



# The Lehigh Valley Talent Supply and Industry Sector Analysis And Strategic Action Plan

FINAL REPORT – JUNE 2018



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## Definition of Terms

**Allentown-Bethlehem-Easton MSA:** A Metropolitan Statistical Area (MSA) is a geographical region with a relatively high population density at its core and close economic ties throughout the area. The United States Office of Management and Budget has designated the Lehigh Valley area of Pennsylvania as part of the Allentown–Bethlehem–Easton, PA Metropolitan Statistical Area. The counties in the Metropolitan area are Carbon, Lehigh, Northampton and part of Warren County.

**Apprenticeship:** An apprenticeship is a combination of on-the-job training and classroom learning. This form of training results in a skilled certification qualification. An apprenticeship relationship is usually administered by an employer. Employees are hired and trained through in-house on-the-job learning that are traditionally specific to a skilled trade, with periods of in-class training held throughout the apprenticeship.

**Co-op:** A Cooperative program (Co-op) combines' classroom education with practical, structured work experience. It differs from the apprenticeship as it is usually provided by an educational institution. A student can complete a number of co-op placements throughout the period of academic study and receive academic credit for each. A co-op can be either paid or unpaid depending on the type of program.

**Economic Development:** Economic development is the range of activities, policies, and programs of a state, region, or municipality used to “create conditions that enable long-run economic growth.” These activities often include investments in the “generation of new ideas, knowledge transfer, and infrastructure” and rely on cooperation between the public and private sectors.<sup>1</sup>

**Employability Skills:** The skills you need to enter, stay in, and progress in the world of work—whether you work on your own or as a part of a team. Examples of Employability Skills include fundamental skills such as communication, personal management skills and teamwork skills<sup>2</sup>.

**Internship:** Traditionally, an intern receives on-the-job training in the workplace. Internships are usually completed as part of coursework and students receive credit towards final program completion. They can be completed full time or part time and can be paid or unpaid.

**Job shadowing:** Job shadowing may be completed over a few hours to a few weeks and involves observing an employee in their workplace. Students interact and network with practitioners while gaining industry exposure to inform their career pathway decisions.

**Low-skill jobs:** Low-skill jobs are a segment of the workforce associated with a limited skill set or minimal economic value for the work performed. It is generally characterized by a lower educational attainment, such as a high school diploma, GED or lack thereof, and typically results in smaller wages.

**LVEDC:** Lehigh Valley Economic Development Corporation

**Middle-Skill Jobs:** those that require more education and training than a high school diploma but less than a four-year college degree.<sup>3</sup>

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<sup>1</sup> Feldman, Maryann, Theodora Hadjimichael, Tom Kemeny, and Lauren Lanahan. 2014. “Economic Development: A Definition and Model for Investment.” Chapel Hill, NC: University of North Carolina. <http://www.eda.gov/tools/files/research-reports/investment-definition-model.pdf>

<sup>2</sup> [http://www.conferenceboard.ca/\(X\(1\)S\(ug1kch5np0oijmduafz3f1a5\)\)/spse/employability-skills.aspx?AspxAutoDetectCookieSupport=1#](http://www.conferenceboard.ca/(X(1)S(ug1kch5np0oijmduafz3f1a5))/spse/employability-skills.aspx?AspxAutoDetectCookieSupport=1#)

<sup>3</sup> <https://www.hbs.edu/competitiveness/research/Pages/middle-skills.aspx>



**NAICS:** The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy<sup>4</sup>.

**SOC:** The Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data<sup>5</sup>.

**Target Sector:** Target sectors best match the unique competitive advantages in the area, as well as the needs of particular industry sectors. The five industry target sectors in this strategy are Advanced Manufacturing and Food and Beverage Manufacturing, High Value Business Services, Transportation, Logistics, Warehousing and Wholesale, Health care Services and Life Science Research and Manufacturing.

**The Lehigh Valley:** The Lehigh Valley located in eastern Pennsylvania, is a two-county region of Lehigh County and Northampton County. Within the counties are 62 distinct municipalities, including three cities, namely, Allentown, Bethlehem, and Easton. The area is part of the Allentown–Bethlehem–Easton, PA–NJ Metropolitan Statistical Area which also includes the neighboring counties of Carbon (PA) and Warren (NJ).

**WBLV:** Workforce Board Lehigh Valley

**Workforce Development:** Workforce development is the range of activities, policies, and programs used to “create, sustain, and retain a viable workforce” that can support current and future business and industry across a state, region, or municipality. This may include education and training, job matching, and employer engagement. It also involves the coordination of public- and private-sector efforts, providing individuals with career opportunities and supporting business and industry workforce needs.<sup>6</sup>

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<sup>4</sup> <https://www.census.gov/eos/www/naics/>

<sup>5</sup> <https://www.bls.gov/soc/>

<sup>6</sup> Haralson, Lyn E. 2010. “What Is Workforce Development?” Bridges. St. Louis, MO: Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/publications/bridges/spring-2010/what-is-workforce-development>.



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# 1. Executive Summary

Shifting economies, global competitiveness, and the immense speed by which technology is advancing are all contributing to the increasing employer demand for higher skill and education levels as they seek to recruit talent. This rising concern for qualified candidates has embedded itself into the discussion of supply and demand alignment. Such discussions are driving conversations, strategic planning and increased collaboration among economic development, workforce development, education institutions and employers. Communities are recognizing the necessity to be proactive and forward-thinking in how they respond to business needs for a skilled and talented labor force. This is driving the necessity for economic and workforce development to work cohesively and in-step with a common agenda to retain a competitive position in the attraction and retention of businesses and a skilled talent pool.

Lehigh Valley Economic Development Corporation and Workforce Board Lehigh Valley have chosen this time to take proactive steps to link business and education within a collaborative environment that supports creation of a strong ecosystem. The goal is to ensure the Lehigh Valley has a talent pipeline that meets the current and future needs of its key economic sectors. It is about influencing skills development to support labor demand today and being responsive to labor demand as industry and businesses transform in the 21st century economy.

The approach used to develop the Lehigh Valley Talent Supply and Industry Sector Analysis & Strategic Action Plan Strategy combined research and analysis of the current economic and workforce context in the Lehigh Valley with a comprehensive consultation and engagement process. This consultation and engagement involved a range of stakeholders from throughout the Lehigh Valley across five priority sectors, and included employers, job-seekers, community organizations, municipal and State leaders, and sector associations. The insights, perspectives, and knowledge shared created a strong foundation that resulted in informed strategic directions, and actions to implement those directions.



## 2. About This Report

### 2.1 The Lehigh Valley

The Lehigh Valley is the 65th largest regional economy in the United States, with a \$39.1 billion private sector GDP. It is located in eastern Pennsylvania and is a two-county region of Lehigh County and Northampton County. Within the counties are 62 distinct municipalities, including three cities, namely, Allentown, Bethlehem, and Easton. The area is part of the Allentown–Bethlehem–Easton, PA–NJ Metropolitan Statistical Area which also includes the neighboring counties of Carbon (PA) and Warren (NJ).

The Lehigh Valley is a destination for people to live. Whether it be relocating within the region (likely from rural to urban settings) or attracting people from outside and inside Pennsylvania, the Lehigh Valley and its main urban areas are experiencing higher rates of in-migration than the State averages. It is also interesting to note the higher rates of in-migration from those that come from abroad to Allentown relative to the other areas in the Lehigh Valley.

For the purpose of the Strategic Action Plan and its embedded recommendations and actions, the following vision applies:

*The Lehigh Valley is a place admired as a best practice for a regional approach to solving employer and employee needs through collaboration and data-driven self-awareness, making its talent supply strong and adaptable to meet the demands of current and future employers and increasing the competitiveness of the regional economy.*

### 2.2 Project Objective

The Talent Supply and Industry Sector Analysis was undertaken through a partnership between the Lehigh Valley Economic Development Corporation (LVEDC) and Workforce Board Lehigh Valley (WBLV). The purpose of the analysis is to define trends and shortfalls in talent supply in specific industry clusters within the Lehigh Valley.

A second goal of the project is to develop a Strategic Action Plan that will guide communication and implementation strategies for the region over the next five years. This ‘road map’ will enable the region to develop economic and workforce development and education strategies that support efforts to establish a continuous talent pipeline within the Lehigh Valley and ensure a competitive and sustainable economy.

### 2.3 Process

The approach used to conduct the analysis and inform the strategic plan combined research of the current economic context using both public and private (subscription) sources with a comprehensive consultation and engagement process. This consultation and engagement involved a range of stakeholders from throughout the Lehigh Valley across five priority industry sectors and included



employers, job-seekers, community organizations, municipal and State leaders, and sector associations. The insights, perspectives, and knowledge shared created a strong foundation that resulted in informed strategic directions and actions to advance solutions and drive impact.

The approach followed a six-stage process as illustrated in Figure 1.

**Figure 1: Project Approach**



### **Talent Supply and Demand Data Collection**

Data discussed or shown in graphs and charts throughout the report are compiled from the following sources:

- United States Census Bureau American Community Survey Estimates
- United States Census Bureau County Business Patterns
- United States Census Bureau Longitudinal Employer-Household Dynamics Statistics
- United States Census Bureau of Labor Statistics Occupational Employment Survey Estimates
- Lehigh Valley Planning Commission Forecast Estimates
- Chmura JobsEQ® Platform Industry and Occupation Snapshot Estimates
- Integrated Postsecondary Education Data System Graduate Estimates
- LVEDC Postsecondary and Technical School Surveys

The above information (where applicable) was collected for the following geographic descriptions:

- United States
- Pennsylvania
- Lehigh County
- Northampton County
- Cities of Allentown, Bethlehem, Easton
- 59 distinct boroughs and townships in the Lehigh and Northampton counties

All data is available in the *Technical Report (Appendix A)*.



## Industry Sector Selection

LVEDC's Sustainable Economic Development Strategy highlights five optimal target industry sectors for the Lehigh Valley based on the site-specific characteristics of the regional economy. These five target sectors best match the unique competitive advantages in the area, as well as the needs of particular industry sectors. The five industry sectors of focus in this strategy include:

- Advanced Manufacturing and Food and Beverage Manufacturing
- High Value Business Services
- Transportation, Logistics, Warehousing and Wholesale
- Health Care Services
- Life Science Research and Manufacturing

The definition breakdown for each industry sector is available in the *Industry Sector Definition Report (Appendix B)*.

## Engagement and Consultation Activities

The research phase included three types of engagement and consultation activities, each involving a range of stakeholders from throughout the Lehigh Valley, and targeting the five industry sectors. These consultations were designed to encourage participants to share their experiences and insights on the availability of skilled talent in the Lehigh Valley, workforce issues and challenges, and gaps and opportunities that would improve the region's positioning in having a strong pipeline of talent.

Engagement and consultation activities included:

- **Employer Telephone Survey** – A statistically valid survey of 315 randomly selected businesses across the five target industry sectors throughout the Lehigh Valley; companies contacted were also given the opportunity to answer the survey questions online if they preferred. The survey was open from October 20, 2017 through January 12, 2018.
- **Stakeholder Interviews** – A total of 32 one-on-one telephone interviews were conducted with business, community, municipal and State leaders in the Lehigh Valley. These interviews were guided by open-ended questions to promote conversation, each averaging approximately 20-30 minutes in length.
- **Focus Groups** – Eight focus groups were hosted in the Lehigh Valley with select groups including the Lehigh Valley Economic Development Corporation Board of Directors, educational stakeholders, the Education and Talent Supply Council, target sector employers, association, not-for-profit stakeholders, and the Lehigh Valley Professionals group (job-seekers). Focus groups were held in November 2017 and April 2018 and were each two hours.

Results from the employer survey and a consultation summary are available in the *Employer Survey and Consultation Summary Report (Appendix C)*.



## 2.4 Notes for The Reader

Insight gathered from the engagement and consultation activities are marked within sections of this report. Conclusions drawn from these activities are a reflection of the responses given at those sessions with those specific stakeholders and should not be taken as generalizations about all employers within the target industry sectors.

Insight gathered and analyzed from the LVEDC Educational Survey does not include responses from local proprietary schools (McCann, WTTI, Lincoln Tech, and Triangle Tech).

If you have any further questions on data sourcing or methodology used throughout this report, please contact Karianne M. Gelinis, LVEDC Director of Talent Supply at [kgelinis@lehighvalley.org](mailto:kgelinis@lehighvalley.org).



## 3. Talent Demand Assessment

### 3.1 Industry and Occupation Overview

2015 County Business Patterns data reveals that there are over 14,000 businesses in the Lehigh Valley employing over 329,000 individuals. The majority of employment is concentrated in educational services, and health care and social assistance (81,325), manufacturing (48,294), retail trade (37,889), professional, scientific, and management, and administrative and waste management (33,243). Figure 2 provides a breakdown of all industries by total employment.

The top employing industry sectors in the Lehigh Valley are Health care and social assistance (51,348), Manufacturing (47,524), Retail trade (37,756) and Educational services industry (29,578). The proportion of industry employment for all industries is similar to the employment percentage seen in Pennsylvania.

**Figure 2: Percentage of the labor force by industry, 2016 (Industries within the Target Sectors Highlighted)**

Industry (NAICS)	The Lehigh Valley	% of total industry
<b>Total</b>	<b>319,644</b>	<b>100%</b>
Health care and social assistance	51,348	16.1%
Manufacturing	47,524	14.9%
Retail trade	37,756	11.8%
Educational services	29,578	9.3%
Accommodation and food services	20,703	6.5%
Construction	16,399	5.1%
Professional, scientific, and technical services	16,029	5.0%
Transportation and warehousing	15,181	4.7%
Administrative and support and waste management services	14,606	4.6%
Finance and insurance	14,250	4.5%
Other services, except public administration	13,649	4.3%
Wholesale trade	10,599	3.3%
Public administration	9,305	2.9%
Arts, entertainment, and recreation	6,914	2.2%
Information	5,757	1.8%
Real estate and rental and leasing	4,351	1.4%
Utilities	3,295	1.0%
Agriculture, forestry, fishing and hunting	1,500	0.5%
Mining, quarrying, and oil and gas extraction	472	0.1%
Management of companies and enterprises	428	0.1%

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

When examining employment by occupation, the top occupations are related to management, business, science-related, and art-based activities (Figure 3). These occupations accounted for 35% of the total employed population in the Lehigh Valley. Employment in sales and office related activities (25% of the total employed population) were the second highest followed by service-based occupations (17% of the



total employed population). A drilled down view of specific occupations (Figure 3) highlights seven occupation types that account for 56% of all jobs available by the Lehigh Valley employers. These occupation types include:

- Office and administrative support occupations (14%)
- Sales and related occupations (10%)
- Management occupations (9%)
- Production occupations (7%)
- Education, training, and library occupations (6%)
- Food preparation and serving related occupations (5%)
- Material moving occupations (5%)

**Figure 3: Percentage of the labor force by Occupations, 2016 (Occupations within the Target Sectors Highlighted)**

Occupations (SOC)	The Lehigh Valley	% of Total Occupations
<b>Total</b>	<b>319,644</b>	<b>100%</b>
Office and administrative support occupations	46,171	14%
Sales and related occupations	33,176	10%
Management occupations	28,184	9%
Production occupations	22,424	7%
Education, training, and library occupations	18,772	6%
Food preparation and serving related occupations	17,396	5%
Material moving occupations	14,708	5%
Business and financial operations occupations	13,811	4%
Health diagnosing and treating practitioners and other technical occupations	13,189	4%
Construction and extraction occupations	12,718	4%
Transportation occupations	12,320	4%
Building and grounds cleaning and maintenance occupations	11,794	4%
Personal care and service occupations	11,675	4%
Installation, maintenance, and repair occupations	10,491	3%
Healthcare support occupations	9,197	3%
Computer and mathematical occupations	7,254	2%
Health technologists and technicians	6,907	2%
Architecture and engineering occupations	6,767	2%
Community and social services occupations	6,490	2%
Arts, design, entertainment, sports, and media occupations	5,015	2%
Life, physical, and social science occupations	2,832	1%
Firefighting and prevention, and other protective service workers including supervisors	2,752	1%
Law enforcement workers including supervisors	2,418	1%
Legal occupations	2,280	1%
Farming, fishing, and forestry occupations	903	0.3%

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates



## 3.2 Target Sector Industry and Occupation Overview

As of 2017, the Lehigh Valley's target sector industries employed over 175,000 individuals. Together, the five target sector industries saw a collective growth of 18,215 workers over the last 5 years (2012-2017) or about an annual 2% increase in its total employment. Looking outwards, the next five years forecast that the target sector industries have an anticipated net employment growth of 7,267 workers. The five-year forecast also predicts that the target sectors will see approximately 37,700 workers leave these industries due to retirements, and 51,775 workers transfer out of these industries and into other industries. Taking into account all three figures (reflecting statistical rounding), the target sector industries have an anticipated replacement demand of 96,826 workers. Figure 4 provides a detailed outlook of each target sector industry.

**Figure 4: Industry Snapshot of Current and Forecasted Employment, the Lehigh Valley**

Target Sector	Employment in 2017	Total Employment Change (2012-2017)	Average Annual Growth Rate (2012-2017)	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand <sup>±</sup>
Advanced Manufacturing and Food and Beverage Processing	24,764	2,564	8%	23,955	-809	11,956
Life Science Research and Manufacturing	10,388	214	-1%	10,953	565	5,354
High Value Business Services	53,126	1,358	2%	54,835	1,709	28,952
Transportation, Logistics, Warehousing and Wholesale	34,271	10,019	5%	35,734	1,463	20,978
Health Care Services	53,056	4,060	2%	57,395	4,339	29,586
<b>Total</b>	<b>175,605</b>	<b>18,215</b>	<b>2%</b>	<b>182,872</b>	<b>7,267</b>	<b>96,826</b>

Source: Chmura JobsEQ® Platform, Q4 2017

± Total Replacement Demand = Number of workers transferring (moving to another industry) and exiting the industry (retiring) + the anticipated employment growth change

### 3.2.1 Advanced Manufacturing and Food and Beverage Manufacturing

Advanced manufacturing and food and beverage processing is an important contributor to the Lehigh Valley economy (Figure 5). Accounting for \$1.74 Billion in wages paid in the region in 2017, this sector is in the midst of a significant transformation. As customer demands change, numerous new subsector opportunities have arisen with this target sector, positioning the Lehigh Valley to continue advancing



activity within this industry. Currently, the Lehigh County boasts the highest concentration of beverage processing activity when compared to other Pennsylvania counties.

**Figure 5: Employment Characteristics, Advanced Manufacturing and Food and Beverage Processing, the Lehigh Valley**

Employed (2017)	Employment Change (2012-2017)	Average Annual Growth Rate	Average Compensation	Total Wages
24,764	2,564	8% ↑	\$70,302 (annual)	\$1.74 Billion (in 2017)

Source: Chmura JobsEQ® Platform, Q4 2017

### Forecasted Talent Demand

The Lehigh Valley boasts a unique mix of assets to accommodate this fast-changing industry. When examining the industry’s forecasted demand scenario (Figure 6), it can be seen that the industry will need to replace nearly 12,000 workers in the next five years. Approximately 4,685 workers are anticipated to exit the workforce in the next five years, with another 8,074 workers transferring to another industry.

**Figure 6: Industry Snapshot of Employment Demand, Advanced Manufacturing and Food and Beverage Processing, the Lehigh Valley**

Target Sector	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand	Anticipated Exits (2017-2022)	Anticipated Transfers (2017-2022)
Advanced Manufacturing and Food and Beverage Processing	23,955	- 809 ↓	11,956	4,685	8,074

Source: Chmura JobsEQ® Platform, Q4 2017

### 3.2.2 Life Science Research and Manufacturing

Life Science Research and Manufacturing industry have boasted many success stories in the Lehigh Valley (Figure 7). Over the last five years, this \$898 Million (in wages) industry was at the forefront of combatting viruses such as Ebola. A specialized industry, life science research and manufacturing activities remain a critical sector for local post-secondary institutions. A strong growth in the healthcare services industry also complements the importance of this target sector.

**Figure 7: Employment Characteristics, Life Science Research and Manufacturing, the Lehigh Valley**

Employed (2017)	Employment Change (2012-2017)	Average Annual Growth Rate	Average Compensation	Total Wages
10,388	214	-1% ↓	\$86,441 (annual)	\$898 Million (in 2017)

Source: Chmura JobsEQ® Platform, Q4 2017



### Forecasted Talent Demand

When examining the industry’s forecasted demand scenario (Figure 8), it can be seen that the industry will need to replace nearly half of its existing workers in the next five years. Approximately 1,999 workers within this industry are anticipated to exit the workforce in the next five years, with another 2,789 workers transferring to another industry. The industry is also forecasted to add another 565 workers.

**Figure 8: Industry Snapshot of Employment Demand, Life Science Research and Manufacturing, the Lehigh Valley**

Target Sector	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand	Anticipated Exits (2017-2022)	Anticipated Transfers (2017-2022)
Life Science Research and Manufacturing	10,953	565 ↑	5,354	1,999	2,789

Source: Chmura JobsEQ® Platform, Q4 2017

### 3.2.3 High Value Business Services

The High Value Business Services industry has the largest employment among the target sectors in the Lehigh Valley (Figure 9). Valued as a \$3.45 Billion (in wages) industry, the high value business services industry is well suited in the Lehigh Valley. The Lehigh Valley’s central location puts companies in close proximity to the financial and insurance centers of New York and Philadelphia. A strong cluster of shared service and back office facilities already exist in the Lehigh Valley, which has supported the continued growth of this target sector industry.

**Figure 9: Employment Characteristics, High Value Business Services, the Lehigh Valley**

Employed (2017)	Employment Change (2012-2017)	Average Annual Growth Rate	Average Compensation	Total Wages
53,126	1,358	2% ↑	\$64,953 (annual)	\$3.45 Billion (in 2017)

Source: Chmura JobsEQ® Platform, Q4 2017

### Forecasted Talent Demand

When examining the industry’s forecasted demand scenario (Figure 10), it can be seen that the industry will need to replace 28,952 workers in the next five years. Approximately 10,930 workers within this industry are anticipated to exit the workforce in the next five years, with another 16,313 workers transferring to another industry. Despite the industry being quite volatile (as occupations under this target sector are often transferable among other industries) is it still forecasted to add another 1,709 workers in the next five years.



**Figure 10: Industry Snapshot of Employment Demand, High Value Business Services, the Lehigh Valley**

Target Sector	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand	Anticipated Exits (2017-2022)	Anticipated Transfers (2017-2022)
High Value Business Services	54,835	1,709 ↑	28,952	10,930	16,313

Source: Chmura JobsEQ® Platform, Q4 2017

### 3.2.4 Transportation, Logistics, Warehousing and Wholesale

Employment in Transportation, logistics, warehousing and wholesale activities are on the rise (Figure 11). Paying nearly \$1.88 Billion in wages, companies such as Amazon.com and FedEx are assisting the Lehigh Valley in its reputation as a formidable location (compared to other Pennsylvania locations) for investment.

**Figure 11: Employment Characteristics, Transportation, Logistics, Warehousing and Wholesale, the Lehigh Valley**

Employed (2017)	Employment Change (2012-2017)	Average Annual Growth Rate	Average Compensation	Total Wages
34,271	10,019	5% ↑	\$54,743 (annual)	\$1.88 Billion (in 2017)

Source: Chmura JobsEQ® Platform, Q4 2017

#### Forecasted Talent Demand

When examining the industry’s forecasted demand scenario (Figure 12), it can be seen that the industry will need to replace 20,978 workers (over 60%) in the next five years. Approximately 7,825 workers within this industry are anticipated to exit the workforce in the next five years, with another 11,688 workers transferring to another industry. Similar to the high value business services, the transportation, logistics, warehousing, and wholesale is volatile (as occupations under this target sector are often transferable among other industries) and is forecasted to add another 1,463 workers in the next five years.

**Figure 12: Industry Snapshot of Employment Demand, Transportation, Logistics, Warehousing and Wholesale, the Lehigh Valley**

Target Sector	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand	Anticipated Exits (2017-2022)	Anticipated Transfers (2017-2022)
Transportation, Logistics, Warehousing and Wholesale	35,734	1,463 ↑	20,978	7,825	11,688

Source: Chmura JobsEQ® Platform, Q4 2017



### 3.2.5 Health Care Services

Over the past five years, the healthcare service industry has continued on as one of the largest industry sectors in the Lehigh Valley (Figure 13). Accounting for \$2.46 Billion in wages paid in the region, this sector can be found throughout the Lehigh Valley, from the populated urban centers to more rural communities.

**Figure 13: Employment Characteristics, Health Care Services, the Lehigh Valley**

Employed (2017)	Employment Change (2012-2017)	Average Annual Growth Rate	Average Compensation	Total Wages
53,056	4,060	2% ↑	\$46,452 (annual)	\$2.46 Billion (in 2017)

Source: Chmura JobsEQ® Platform, Q4 2017

#### Forecasted Talent Demand

When examining the industry’s forecasted demand scenario (Figure 14), it can be seen that the industry will need to replace 29,586 workers in the next five years. Approximately 12,330 workers within this industry are anticipated to exit the workforce in the next five years, with another 12,911 workers transferring to another industry. Perhaps unique to this target sector is the amount of anticipated new employment needed, with approximately 4,339 workers added to the total employment demand.

**Figure 14: Industry Snapshot of Employment Demand, Health Care Services, the Lehigh Valley**

Target Sector	Forecasted Employment in 2022	Anticipated Employment Growth Change (2017-2022)	Total Replacement Demand	Anticipated Exits (2017-2022)	Anticipated Transfers (2017-2022)
Healthcare Services	57,395	4,339 ↑	29,586	12,330	12,911

Source: Chmura JobsEQ® Platform, Q4 2017

## 3.3 Employer Challenges

A survey and a series of focus groups were undertaken to validate the anticipated demand challenges and supplement industry data. Observations, as presented, reflect the views, perceptions, and opinions of the respondents.

### 3.3.1 A Regional Lens on Employer Challenges

- Historical perceptions of the Lehigh Valley’s heavy industrial manufacturing jobs have colored perceptions of modern manufacturing. These outdated perceptions tend to reflect manufacturing jobs in a less-than-positive light among parents and other career influencers.
- Employability (“soft”) skills are as important to employers as technical skills and education. Job candidates are not prepared for the expectations or underestimate the value that employers place



on skills such as communication, motivation, teamwork, ability to follow directions and conflict resolution.

- With near full employment in the region for low-to high-skilled jobs, there is a demand on employers to increase wages as a competitive tool to attract talent. This demand is creating a wage gap versus skill gap environment as businesses that cannot offer a more competitive wage are often left with a lower-skilled labor pool to draw from.
- Some employers find growth is restrained by staffing challenges. This concern expands to potential new businesses relocating to the area, as access to talent is a key influencer to the relocation decision. It also impacts on existing businesses looking to expand operations.
- Skilled professionals active in the job market who previously worked at corporate offices both locally and abroad have salary expectations that do not align with compensation offered by other employers in the region.
- Challenges around employee training exist. Larger companies are often willing to train, but cautious about investing in employees who may leave to work for a competitor. Smaller companies struggle with training costs, the inability to release staff from work, and access to the right training. They often rely on technical schools and/or community colleges to train their workforce.
- Disconnections exist between the needs and expectations of employers and the wants and expectations of an evolving workforce. Today's workforce expectations include integrated technologies that workers are accustomed to in their personal lives, spaces that are designed for greater collaboration or socialization, and workplaces that place emphasis on nurturing emotional, physical, and cognitive well-being.
- Employers express concerns about the need to transfer technical and cultural knowledge from experienced employees who are approaching retirement to employees who will succeed them.

### 3.3.2 Target Sector Industry Challenges

A statistically valid telephone survey of 315 randomly selected businesses in the five priority sectors throughout the Lehigh Valley was conducted. Companies contacted were also given the opportunity to answer the survey questions online if they preferred. Summary findings from the survey are presented below. These observations reflect the views, perceptions, and opinions of the respondents.

#### Advanced Manufacturing and Food and Beverage Manufacturing

- 46% of all employer responses indicated they hired between 1-5 individuals over the past 12 months
- 65% of the employer responses are looking to hire between 1-10 employees in the next 12 months
- 72% of the employer responses indicated they experienced challenges in recruiting, hiring or retaining talent for specific occupations
- Machinists, Engineers, Welders, Mechanics, General Labor, and Electricians are the most difficult skills to retain, recruit or hire



- 68% of all employers identified that a skilled talent pool (both middle-skilled and high-skilled) was essential to their future operations

### Life Science Research and Manufacturing

- 44% of all employer responses indicated they hired between 1-5 employees over the past 12 months
- 55% of the employer responses are looking to hire between 1-10 employees in the next 12 months
- 67% of the employer responses indicated they experienced challenges in hiring talent for specific occupations
- Engineers, Mechanics, Chemical operators, and IT Analysts are the most difficult skills to retain, recruit or hire
- 89% of all employers identified that a skilled talent pool (both middle-skilled and high-skilled) was essential to their future operations

### High Value Business Services

- 58% of all employer responses indicated they hired between 1-5 individuals over the past 12 months
- 75% of the employer responses are looking to hire between 1-10 employees in the next 12 months
- 59% of the employer responses indicated they experienced challenges in recruiting, hiring or retaining talent for specific occupations
- Sales, Engineers, Accountants, and Attorneys are the most difficult skills to retain, recruit or hire
- 79% of all employers identified that a skilled talent pool (both middle-skilled and high-skilled) was essential to their future operations

### Transportation, Logistics, Warehousing and Wholesale

- 37% of all employer responses indicated they hired between 1-5 individuals over the past 12 months
- 50% of the employer responses are looking to hire between 1-10 employees in the next 12 months
- 79% of the employer responses indicated they experienced challenges in recruiting, hiring or retaining talent for specific occupations
- Truck drivers, Forklift operators, Mechanics, and Warehouse workers are the most difficult skills to retain, recruit or hire
- 67% of all employers identified that a skilled talent pool (both middle-skilled and high-skilled) was essential to their future operations



### Health Care Services

- 29% of all employer responses indicated they hired between 1-5 individuals over the past 12 months
- 45% of the employer responses are looking to hire between 1-10 employees in the next 12 months
- 76% of the employer responses indicated they experienced challenges in recruiting, hiring or retaining talent for specific occupations
- Nurses, medical assistants, caregivers/home health aides, certified nurse aides, and paramedics are the most difficult skills to retain, recruit or hire
- 86% of all employers identified that a skilled talent pool (both middle-skilled and high-skilled) was essential to their future operations



## 4. Talent Supply Assessment

Talent supply is measured by determining the availability of the labor force in the Lehigh Valley and the educational qualifications of the population. To gain an accurate reflection, it is necessary to also understand talent demand which is measured by identifying critical occupations, levels of job creation and difficulties in retaining and recruiting talent. The educational survey used to inform on talent supply includes responses from all of the regional CTEs, colleges, and universities including East Stroudsburg and Kutztown. Responses were not received from proprietary schools (McCann, WTTI, Lincoln Tech, and Triangle Tech) and are not included in the scan.

It is important to understand the skill levels of graduates and the skill levels of the employed labor force, as compared to the current and anticipated future needs of businesses. Identifying the supply of local graduates and the high growth sectors in the Lehigh Valley, current and potential future shortages can be determined. Although graduates are not the only talent supply for businesses, they represent a significant pool of local candidates to fill vacancies and support economic growth. Unless existing trends are reversed, these identified critical occupations will require the attraction of labor from outside the Lehigh Valley.

### 4.1 Talent Supply Age Characteristics

According to U.S. Census Bureau Population Estimate (as of July 1), the population of the Lehigh Valley in 2017 is 669,899. This is an increase from 596,871 residents in 2005. Examining age characteristics also identifies that the Lehigh Valley has an aging talent supply. The analysis of the population based on broad age groups showed that the senior population 60 years and above grew from 18% in 2010 to 24% in 2017. Additionally, the core talent supply aged 25-54 years decreased by 2%, which correlates with a loss of approximately 5,891 people. The Lehigh Valley talent supply by broad age groups shows that even if the outgoing talent supply of 91,410 residents is replaced by the future talent supply of 81,233 people in the next ten years, it still results in a shortage of 10,177 people in the labor force. Thus, approximately 10,177 jobs may go vacant, and this does not take into account the increased demand for talent based on economic activity, rather simply existing talent exiting the labor market.

**Figure 15: The Lehigh Valley talent supply by broad age groups, 2017**

Talent Supply Description	Age Groups	Population as of 2017	% of the labor force
Future talent supply in next ten years	5-14 years	81,233	12%
Incoming talent supply	15-24 years	90,026	13%
Core talent supply	25-54 years	254,219	38%
Outgoing talent supply	55-64 years	91,410	14%

Source: U.S. Census Bureau, Population Division, June 2018



## 4.2 Talent Supply Skill Characteristics

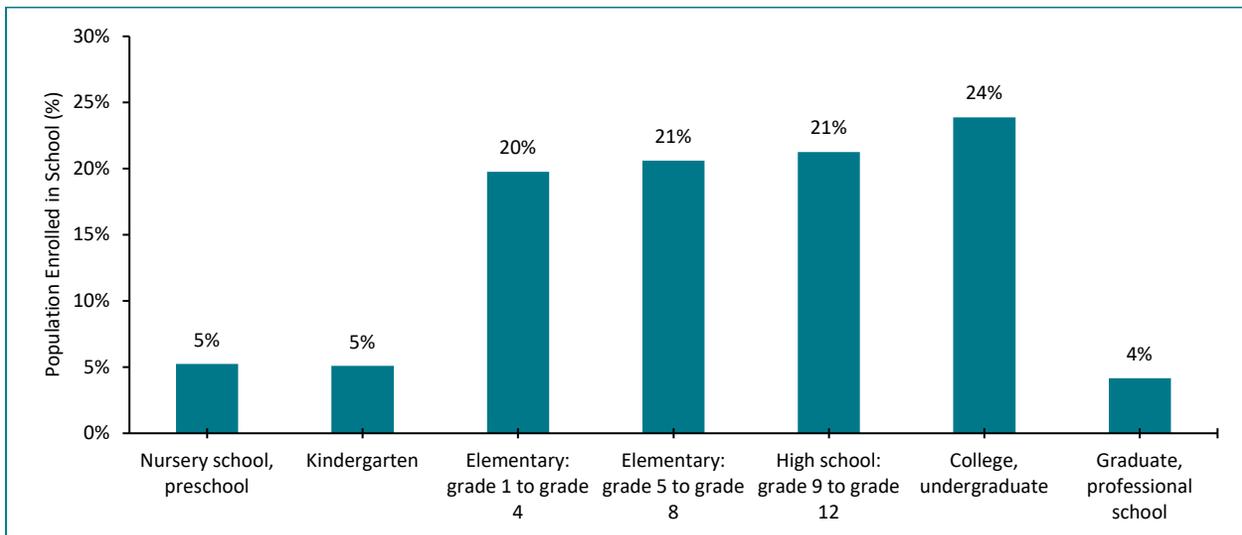
Analyzing the skill level of the current talent supply is important in identifying potential skill gaps that exist in the Lehigh Valley. The analysis of skill levels can help identify if the current workforce meets the employer demand or if a skills gap does exist, informing what skills need to be targeted, and how training can contribute to closing the gap. The skill levels in the Lehigh Valley are determined by analyzing the levels of:

- School enrollment
- Graduation levels
- Skills training programs

### School Enrollment

The proportion of school enrollment based on of the total population in the Lehigh Valley has been consistent from 2005 to 2016 at 24% (Figure 16). Of the 159,974 population, three years and over were enrolled in school. Of this, 41% were enrolled in Elementary school from grade 1 to grade 8, and 21% were enrolled in High School, from grade 9 to grade 12. 28% of the population was enrolled in College or Higher Education of which 24% were Undergraduates.

**Figure 16: Population 3 years and over enrolled in school, 2016**



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

### Graduation Levels

On analyzing data provided to the LVEDC by colleges and universities in the Lehigh Valley (Figure 17), it was determined that approximately 32,064 students graduated from public higher education institutions in the Lehigh Valley over the last three years.



**Figure 17: Total Graduates from the Lehigh Valley, 2014-2017**

Total graduates (credit)	2014-2015	2015-2016	2016-2017
	10,950	11,023	10,091

Source: LVEDC Educational Survey, 2018. Note: The above figure only includes credit graduate programs. Data for non-credit, secondary, or adult programs are not included.

### Skills Training Programs

In examining workplace opportunities offered by Career and Technical Centers (CTCs), and colleges and universities in the Lehigh Valley (Figure 18), there is consistent availability of approximately 6,100 workplace opportunities for students on an annual basis. Workplace opportunities include apprenticeships, internships, co-ops, and job shadowing opportunities, with internships and co-ops being the preferred skill training program offered by education institutions.

**Figure 18: Workplace Opportunities, the Lehigh Valley, 2014 to 2017**

Workplace Opportunities	2014-2015	2015-2016	2016-2017
Apprenticeships	25	19	34
Internships	3,648	3,843	3,885
Co-ops	1,889	1,711	1,689
Job shadowing	544	518	559
<b>Total</b>	<b>6,106</b>	<b>6,091</b>	<b>6,167</b>

Source: LVEDC Educational Survey, 2018

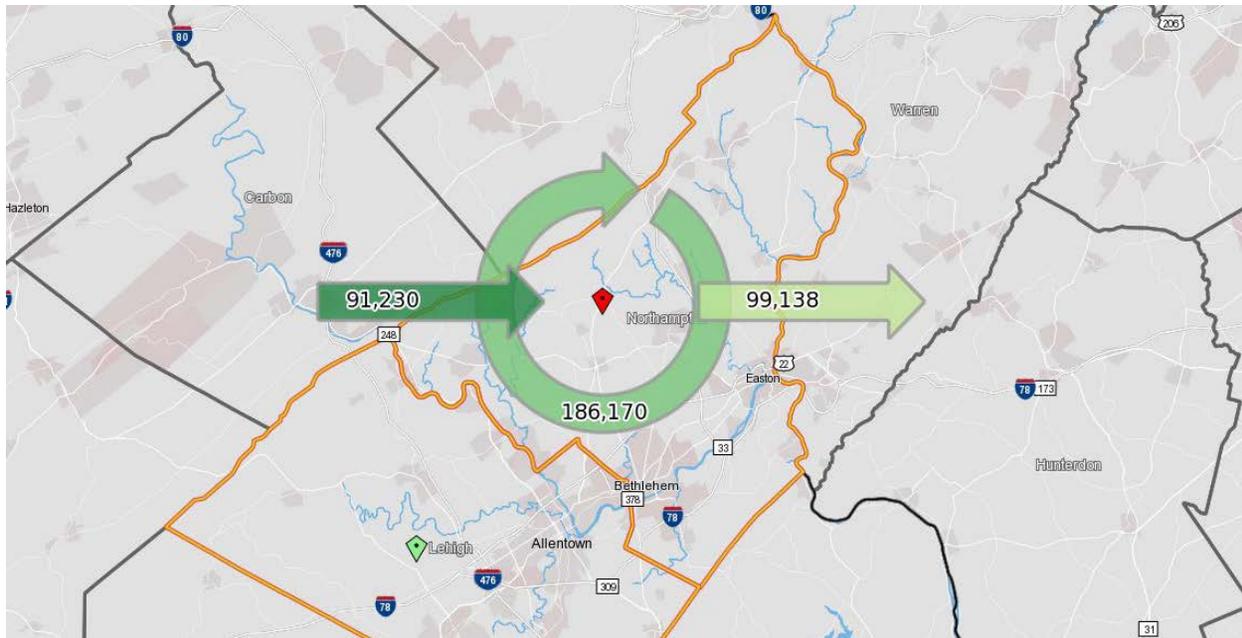
## 4.3 Talent Supply Commuting Patterns

Commuting patterns can be used to identify talent sheds at the regional and sub-regional levels, which can help employers determine how wide to cast their local net for talent. The OnTheMap online tool from the U.S. Census Bureau was updated with 2015 data on commuting patterns in March 2018. This data uses unemployment insurance-covered employers and Census data from individuals to determine commuting patterns at many geography levels.

In 2015, approximately 277,490 individuals were employed in the Lehigh Valley, and 285,308 individuals who lived in the Lehigh Valley were employed. This discrepancy is explained by the 91,320 individuals who commute into the Lehigh Valley for work (and live outside of the Lehigh Valley) and the 99,138 individuals who make the opposite trip out of the Lehigh Valley for work (Figure 19). Therefore, 186,170 individuals work and live in the Lehigh Valley, and have a commute that falls fully within the region; this accounts for 65.4% of all those living in the Lehigh Valley who are employed.



Figure 19: Inflow Outflow Job Counts (Primary Jobs), the Lehigh Valley, 2015



Source: U.S. Census Bureau, Center for Economic Studies

## 4.4 Talent Supply by Occupation and Target Sectors

To gain an understanding of the talent supply needs in the Lehigh Valley, a combination of occupational data and primary research was examined. The occupational data examined existing supply and forecasted occupational growth and the primary research examined survey findings from an educational survey conducted by LVEDC in early 2018 with the Lehigh Valley’s colleges, universities, and CTCs.

### 4.4.1 Occupational Outlook

In 2017 there were a total of 320,516 jobs in the Lehigh Valley. The top ten growing occupations and top ten declining occupations related to the target sectors in the Lehigh Valley are shown in Figure 20 and Figure 21, respectively.

Figure 20: Top Ten Growing Occupations in the Lehigh Valley (2017)

Occupation	Annual Percent Change, Projected Demand 2017-2022	Current Demand	Forecasted Demand	Forecasted Needed Employment
Home Health Aides	3.6%	1,858	2,223	365
Personal Care Aides	3.2%	4,585	5,373	788
Medical Assistants	2.4%	1,803	2,029	226



Occupation	Annual Percent Change, Projected Demand 2017-2022	Current Demand	Forecasted Demand	Forecasted Needed Employment
Software Developers, Applications	2.2%	1,056	1,180	124
Phlebotomists	2.1%	453	503	50
Mental Health and Substance Abuse Social Workers	2.0%	404	445	41
Mental Health Counselors	2.0%	387	427	40
Social and Human Service Assistants	1.9%	791	868	77
Medical Secretaries	1.8%	1,471	1,609	138
Nonfarm Animal Caretakers	1.8%	504	551	47
<b>Total - All Occupations</b>	<b>0.6%</b>	<b>320,516</b>	<b>329,861</b>	<b>9,345</b>

Source: Chmura JobsEQ® Platform, Q4 2017

**Figure 21: Top Ten Declining Occupations in the Lehigh Valley (2017)**

Occupation	Annual Percent Change, Projected Demand 2017-2022	Current Demand	Forecasted Demand	Forecasted Needed Employment
Sewing Machine Operators	-2.5%	554	489	-65
Electrical and Electronic Equipment Assemblers	-2.3%	861	765	-96
Legal Secretaries	-2.2%	268	240	-28
Executive Secretaries and Executive Administrative Assistants	-2.0%	1,124	1,014	-110
Postal Service Mail Sorters, Processors, and Processing Machine Operators	-1.9%	325	295	-30
Assemblers and Fabricators, All Other	-1.7%	589	540	-49
Photographers	-1.3%	254	238	-16
Team Assemblers	-1.2%	3,264	3,074	-190
Inspectors, Testers, Sorters, Samplers, and Weighers	-1.1%	1,611	1,522	-89
Cutting, Punching, and Press Machine Setters, Operators, and Tenders	-1.1%	378	357	-21
<b>Total - All Occupations</b>	<b>0.6%</b>	<b>320,516</b>	<b>329,861</b>	<b>9,345</b>

Source: Chmura JobsEQ® Platform, Q4 2017

Both figures indicate a shift towards healthcare services and IT/computer system applications and a move away from occupations that have been impacted by the advancement of technology in the workplace that has led to the automation of certain skills (ex. package processing).



## 4.4.2 Occupational Outlook by Target Sector

### Common Occupations Across All Industry Sectors

In examining common occupational titles (ranging from high-skilled to middle-skilled talent) across all industry sectors, a total of 26,592 jobs are potentially being shared (Figure 22). The common occupations, for the majority, have historically illustrated significant growth (approximately 4,151 from 2012). However, looking out five years, it is anticipated that the supply will continue to grow but at a slower pace. This trend might be a reflection of the impact of workplace dynamics. As technology advancements emerge within workplaces, so does the risk of automation and efficiencies. Traditional occupations across all industries such as general labor is being replaced by machines or new assembly line processes. However, technology advancements can also support the creation of new occupations. Occupations focused on technology support or security such as computer system analysts or information security analysts are forecasted to grow naturally in the Lehigh Valley. This indicates an anticipated growing demand for these occupations.

**Figure 22: Common Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Laborers and Freight, Stock, and Material Movers, Hand	12,231	3,768	12,984	753
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	4,738	-20	4,911	173
General and Operations Managers	3,457	140	3,568	111
Security Guards	2,324	309	2,385	61
Financial Managers	857	-45	926	69
Computer Systems Analysts	840	-11	863	23
Network and Computer Systems Administrators	679	12	690	11
Chief Executives	434	1	420	-14
Human Resources Managers	250	-4	259	9
Computer Network Architects	232	3	236	4
Database Administrators	223	5	233	10
Purchasing Managers	151	-2	154	3
Information Security Analysts	115	-1	129	14
Training and Development Managers	61	-4	63	2
<b>Total Common Occupations</b>	<b>26,592</b>	<b>4,151</b>	<b>27,821</b>	<b>1,229</b>

Source: Chmura JobsEQ® Platform, Q4 2017

### Advanced Manufacturing and Food and Beverage Manufacturing

Analyzing occupational figures that are best aligned with the advanced manufacturing and Food and Beverage Manufacturing target sector (Figure 23), it is anticipated that the current supply of talent in 2017 is higher than the anticipated supply in 2022. This suggests that the focus of the advanced



manufacturing target sector will be on the retention of existing talent and a focus on replacing any exiting (retiring) talent. Occupations within this sector that are anticipated to continue being in demand and may have a potential supply shortage include production workers and machine operators, which is consistent with the responses received through the employer survey.

**Figure 23: Advanced Manufacturing and Food and Beverage Manufacturing Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Team Assemblers	3,264	531	3,074	-190
First-Line Supervisors of Production and Operating Workers	1,657	122	1,640	-17
Inspectors, Testers, Sorters, Samplers, and Weighers	1,611	218	1,522	-89
Packaging and Filling Machine Operators and Tenders	1,540	313	1,564	24
Helpers--Production Workers	1,103	181	1,182	79
Electrical and Electronic Equipment Assemblers	862	97	766	-96
Welders, Cutters, Solderers, and Brazers	719	21	725	6
Machinists	714	25	712	-2
Assemblers and Fabricators, All Other	590	91	541	-49
Laundry and Dry-Cleaning Workers	587	36	579	-8
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	563	23	509	-54
Sewing Machine Operators	554	-196	489	-65
Computer-Controlled Machine Tool Operators, Metal and Plastic	507	18	500	-7
All other advanced manufacturing occupations	9,413	741	9,131	-282
<b>Total Advanced Manufacturing Occupations</b>	<b>23,684</b>	<b>2,221</b>	<b>22,934</b>	<b>-750</b>

Source: Chmura JobsEQ® Platform, Q4 2017. All other advanced manufacturing occupations include printing press operators, bakers, mixing and blending machine setters, operators, and tenders, food batchmakers, cutting, punching, and press machine setters, operators, and tenders, production workers, etc.

In 2017, the McKinsey Global Institute (MGI) released a research study focused on the impact of automation and the future of work. In the MGI report, manufacturing was noted to be profoundly impacted by automation. The report notes that occupations in this sector are under automation stress due to the repetitive duties. Technological advancement will replace these skills in the future and sway Advanced Manufacturing businesses to attract high-skilled and middle-skilled employees with more technological experience.

The Lehigh Valley is well positioned to compete in the technologically advanced work pool for the manufacturing sector as the emerging talent pipeline from the postsecondary institutions has technology-related degrees in deeply rooted manufacturing related products such as systems engineering.



On analyzing the degrees, it can be determined that approximately 1,600 graduates with specific knowledge in these industries emerge from educational institutions in the Lehigh Valley. This includes individuals with certification, diploma, undergraduate and graduate degrees related to manufacturing, including production and engineering. Examples include the Line Worker Diploma Program, Welding, and Fabrication Program and Machine Tool Technology.

**Figure 24: Graduates with Degrees related to Advanced Manufacturing and Food and Beverage Manufacturing, 2015 to 2017**

Related Programs/Degrees	2015	2016	2017
Automotive Technology	107	119	119
Civil Engineering	75	63	68
Electrical and Electronics Engineering/Technology	171	192	214
Engineering	362	337	273
Industrial Systems Engineering	92	82	89
Manufacturing Degrees	87	112	120
Materials Sci. & Engineering	394	374	376
Mechanical Engineering and Technology	314	320	341
<b>Total Graduates</b>	<b>1,602</b>	<b>1,599</b>	<b>1,600</b>

Source: LVEDC Educational Survey, 2018

Based on the data analyzed, the Lehigh Valley does seem to have a healthy pool of qualified candidates capable of participating in the labor force today and in the future in the Advanced Manufacturing and Food and Beverage Manufacturing sector.

### Life Science Research and Manufacturing

Analyzing occupational figures that are best aligned with the life science research and manufacturing target sector (Figure 25), it is anticipated that the current supply of talent in 2017 is lower than the anticipated supply in 2022. This suggests that the focus of the life science research and manufacturing target sector will be on the attraction and retention of new and existing talent. Occupations within this sector that are anticipated to be in high demand and may have a potential supply shortage include phlebotomists, medical technologists, and technicians.

**Figure 25: Life Science Research and Manufacturing Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Medical and Clinical Laboratory Technologists	498	40	524	26
Phlebotomists	453	23	503	50
Medical and Clinical Laboratory Technicians	411	30	436	25
Medical Scientists, Except Epidemiologists	232	8	246	14
Chemists	229	0	234	5
Medical Equipment Preparers	135	13	140	5
Life, Physical, Social Science Technicians, All Other	97	11	101	4



Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Chemical Engineers	81	7	84	3
Environmental Scientists and Specialists, Including Health	76	-8	79	3
Biomedical Engineers	64	0	66	2
Biochemists and Biophysicists	54	-2	56	2
Microbiologists	41	-1	42	1
Biological Scientists, All Other	36	0	38	2
Life Scientists, All Other	15	1	16	1
Epidemiologists	8	0	8	0
IT Related Degrees to Life Science Research and Manufacturing (Database Administrators, Computer Analysts)	455	8	469	14
<b>Total Life Science Research and Manufacturing Occupations</b>	<b>2,885</b>	<b>130</b>	<b>3,042</b>	<b>157</b>

Source: Chmura JobsEQ® Platform, Q4 2017

Occupations in life sciences have a lower proportion of automation potential. These knowledge-based occupations are reliant on a growing graduate base to backfill support positions as individual's progress in their careers. In analyzing degrees, it was determined that there were 1,031 life science research and manufacturing graduates from the Lehigh Valley colleges and universities in 2017 (Figure 26).

**Figure 26: Graduates with Degrees related to Life Science Research and Manufacturing, 2015 to 2017**

Related Programs/Degrees	2015	2016	2017
Behavioral Neuroscience	29	48	28
Biochemistry	45	34	45
Bioengineering	43	57	48
Biology	229	256	248
Biotechnology	73	81	101
General Bio life Sciences	129	118	128
Information Technology	414	432	433
<b>Total Graduates without IT</b>	<b>548</b>	<b>594</b>	<b>598</b>
<b>Total Graduates with IT</b>	<b>962</b>	<b>1,026</b>	<b>1,031</b>

Source: LVEDC Educational Survey, 2018

These degrees include basic biology and life science programs and core biotechnology programs including biochemistry, molecular biology, genetic engineering, and nanotechnology. Mechanics related to bioscience are involved in developing mechanical controls and manufacturing products for use in molecular processes. A high number of graduates in Chemistry also indicate that the region is well positioned to provide chemical analysts to meet business needs.

However, degrees in Bio-mechanics and Bio-engineering are currently unavailable at the Lehigh Valley colleges and universities, resulting in an out-of-region recruitment process for local businesses seeking



those skill sets; this could be considered a talent gap.

### High Value Business Services

Analyzing occupational figures that are best aligned with the high value business services target sector (Figure 27), it is anticipated that the current supply of talent in 2017 is lower than the anticipated supply in 2022. This suggests that the focus of the high value business services target sector will be on the attraction and retention of new and existing talent. Occupations within this sector that are anticipated to be in high demand and may have a potential supply shortage include business services (secretarial functions), market research analysts and information clerks. It can be assessed that there is a potential shortage of information technology and computer systems related occupations.

**Figure 27: High Value Business Service Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Office Clerks, General	6,585	442	6,509	-76
Customer Service Representatives	6,233	-7	6,273	40
Stock Clerks and Order Fillers	5,594	843	5,696	102
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	5,088	261	4,882	-206
First-Line Supervisors of Office and Administrative Support Workers	3,161	125	3,192	31
Bookkeeping, Accounting, and Auditing Clerks	3,111	101	3,054	-57
Accountants and Auditors	2,600	122	2,696	96
Receptionists and Information Clerks	2,517	127	2,623	106
Shipping, Receiving, and Traffic Clerks	1,877	400	1,911	34
Medical Secretaries	1,470	51	1,608	138
Market Research Analysts and Marketing Specialists	1,203	-20	1,307	104
Billing and Posting Clerks	1,193	31	1,261	68
Information Technology Related Occupations	5,235	124	5,294	59
All other High Value Business Service Occupations	22,474	-41	22,561	87
<b>Total High Value Business Service Occupations</b>	<b>68,341</b>	<b>2,559</b>	<b>68,867</b>	<b>526</b>

Source: Chmura JobsEQ® Platform, Q4 2017. All other High Value Business Service occupations include Human Resource Specialists, Bill and Account Collectors, Management Analysts, Lawyers, Tellers, Business Operations Specialists, Insurance Claims and Policy Processing Clerks, Purchasing Agents, Interviewers, Training and Development Specialists, etc.

In terms of automation disruption in the high value business services sector, finance, sales, and administrative occupations are most subject to automation, particularly in the data collection and processing activities. This includes bankers, tellers, secretaries, cashiers and sales representatives. The majority of graduates have accounting, finance, business, and information technology degrees with a smaller concentration of graduates with specialized business degrees (economics, human resources, marketing).



**Figure 28: Graduates with Degrees related to High Value Business Services, 2015 to 2017**

Related Programs/Degrees	2015	2016	2017
Accounting & Finance	519	525	518
Management and Business	255	268	301
Marketing	87	112	120
Economics & Statistics	48	61	49
Human Resource Management	21	25	28
Communication	28	29	22
Information Technology	414	432	433
<b>Total Graduates</b>	<b>958</b>	<b>1020</b>	<b>1,038</b>

Source: LVEDC Educational Survey, 2018

### Transportation, Logistics, Warehousing and Wholesale

Analyzing occupational figures that are best aligned with the Transportation, Logistics, Warehousing and Wholesale target sector (Figure 29), it is anticipated that the current supply of talent in 2017 is significantly lower than the anticipated supply in 2022. This suggests that the focus of the transportation, logistics, warehousing, and wholesale target sector will be on the attraction and retention of new and existing talent. Occupations within this sector that are anticipated to be in high demand and may have a potential supply shortage include general laborers and truck drivers (both heavy and industrial operators), which is consistent with the responses received through the employer survey.

**Figure 29: Transportation, Logistics, Warehousing and Wholesale Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Laborers and Freight, Stock, and Material Movers, Hand	12,231	3,768	12,984	753
Heavy and Tractor-Trailer Truck Drivers	5,743	1,242	5,912	169
Industrial Truck and Tractor Operators	3,615	1,345	3,763	148
Packers and Packers, Hand	2,424	668	2,514	90
Light Truck or Delivery Services Drivers	2,335	398	2,411	76
Bus Drivers, School or Special Client	1,250	-178	1,264	14
Driver/Sales Workers	1,145	103	1,137	-8
First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	796	269	853	57
Cleaners of Vehicles and Equipment	736	43	772	36
First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	600	123	614	14
Bus Drivers, Transit and Intercity	458	-24	471	13
Taxi Drivers and Chauffeurs	440	8	431	-9



Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Machine Feeders and Offbearers	354	114	376	22
All Other Transportation, Logistics, Warehousing and Wholesale Occupations	1,873	205	1,927	54
<b>Total Transportation, Logistics, Warehousing and Wholesale Occupations</b>	<b>34,000</b>	<b>8,084</b>	<b>35,429</b>	<b>1,429</b>

Source: Chmura JobsEQ® Platform, Q4 2017. All other Transportation, Logistics, Warehousing and Wholesale Occupations include Refuse and Recyclable Material Collectors, Automotive and Watercraft Service Attendants, Conveyor Operators and Tenders, Commercial Pilots, Motor Vehicle Operators, Crane and Tower Operators, Ambulance Drivers and Attendants, etc.

In addition, the MGI report shows that 60% of the transportation, logistics, warehousing, and wholesale target sector will be affected by automation, and unlike other primary sectors this will affect all types of occupations including management, data collection and processing, driving and manual labor. The high potential of automation has already begun to impact the evolution of the trucking industry and its related training activities. The advent of autonomous and semi-autonomous trucks is changing how truck drivers drive. From ‘smart cruise’ applications to collision mitigation systems, truck drivers are quickly requiring new skills reflecting technology sophistication.

The business survey shows that drivers in the Lehigh Valley are difficult positions for employers to fill. The LVEDC Educational Survey also shows that graduates in driver training programs have declined. With several businesses looking to hire 20+ employees in the next twelve months, there is a case for a talent gap in this industry.<sup>7</sup>

On analyzing degrees, the Lehigh Valley educational institutions do have certificate programs in CDL Driver Training and Logistics & Forklift Safety along with other programs in the transportation and warehousing industry, however with declining graduates over the past three years; there may be a need to educate the populous on the training opportunities associated with this industry and its increasing sophistication. The industry has evolved to one that now requires increased formalized education certificates.

**Figure 30: Graduates with Degrees related to High Performance Manufacturing, 2015 to 2017**

Related Programs/Degrees	2015	2016	2017
CDL Truck & Bus Driver	95	94	80
CDL Truck Driver Training	270	255	184
Logistics and Supply Chain Management	135	104	65
<b>Total Graduates</b>	<b>500</b>	<b>453</b>	<b>329</b>

Source: LVEDC Educational Survey, 2018

<sup>7</sup> Figures do not include responses from proprietary schools (McCann, WTTI, Lincoln Tech, and Triangle Tech).



## Health Care Services

Analyzing occupational figures that are best aligned with the healthcare service target sector (Figure 31), it is anticipated that the current supply of talent in 2017 is significantly lower than the anticipated supply in 2022 both for practitioners and support service providers. This suggests that the focus of the healthcare services sector will be on the attraction and new and existing talent. Occupations within this sector that are anticipated to be in high demand and may have a potential supply shortage include registered nurses, nursing assistants, home health aides, and medical assistants, each consistent with the occupational challenges employers identified.

**Figure 31: Health Care Service Occupations and Supply Outlook**

Occupation	Current Supply (2017)	Historic Supply Growth (2012-2017)	Anticipated Supply (2022)	Forecasted Supply Growth (2017-2022)
Registered Nurses	8,047	680	8,523	476
Nursing Assistants	4,341	17	4,559	218
Home Health Aides	1,858	407	2,223	365
Medical Assistants	1,804	39	2,030	226
Licensed Practical and Licensed Vocational Nurses	1,794	27	1,889	95
Physicians and Surgeons, All Other	1,250	14	1,327	77
Pharmacy Technicians	823	17	860	37
Pharmacists	791	24	803	12
Dental Assistants	693	33	753	60
Radiologic Technologists	649	49	681	32
Emergency Medical Technicians and Paramedics	631	-94	675	44
Physical Therapists	537	0	590	53
Dental Hygienists	524	26	569	45
Medical and Clinical Laboratory Technologists	498	40	524	26
All other Health Care Service Occupations	9,402	526	10,118	716
<b>Total Health Care Service Occupations</b>	<b>33,642</b>	<b>1,805</b>	<b>36,124</b>	<b>2,482</b>

Source: Chmura JobsEQ® Platform, Q4 2017. All other Health Care Service Occupations include Medical Records and Health Information Technicians, Physician Assistants, Occupational Therapists, Nurse Anesthetists, etc.

Similar to the life sciences research and manufacturing industry, occupations in healthcare services have a lower proportion of automation potential. There is an increasing role in the use of technology (ex. point of care technology, digitized health records, patient and staff identification systems) in the field which is leading to new desired skills in traditional occupations such as nursing and medical assistance (skills that are now part of today's college programs in these fields).

In analyzing degrees, graduates in nursing and nursing related programs are the third highest in the region compared to other postsecondary degrees. That being said, health related degrees in general in the Lehigh Valley have decreased slightly from 1,402 in 2015 graduates to 1,322 in 2017 (Figure 32).



**Figure 32: Graduates with Degrees related to Health Care Services, 2015 to 2017**

Related Programs/Degrees	2015	2016	2017
Health-Related Degrees	613	543	556
Medical Degrees	163	173	148
Nursing	626	629	618
<b>Total Graduates</b>	<b>1,402</b>	<b>1,345</b>	<b>1,322</b>

Source: LVEDC Educational Survey, 2018

The number of graduates has decreased over the years, indicating that the competitiveness of the sector might be affected in the short term. These numbers need to be monitored to assess if the declining trend continues over the longer term. Efforts should be focussed on improving awareness and increasing enrollment to meet employment opportunities.

## 4.5 Job Seeker Challenges

The summary findings of the perceptions of job seekers in the Lehigh Valley are presented below. These observations reflect the views, perceptions, and opinions of the respondents.

### Job Seeker Challenges

- Easier access to data and information about what occupations are in demand, what companies are hiring, what skills/education are required for these jobs, what jobs pay, and how to successfully secure employment is needed
- A willingness to be flexible and keep an open mind to the jobs that are available and the importance of continuing to utilize and develop skills is necessary
- Access to public transportation causes access challenges as more development occurs in outlying areas away from the Lehigh Valley's population centers
- Language barriers can impede some job seekers because many jobs require basic ability to communicate in English
- Some job seekers face barriers that make mixing personal life commitments and work a challenge (i.e., childcare, interview readiness, being reliable in the workforce)
- On-the-job training is often necessary to strengthen relevant skills, yet job seekers are not effectively connecting to businesses offering these opportunities



## 5. Emerging Observations

### 5.1 Talent Gap Assessment

The talent demand and supply analysis show that the Lehigh Valley has a fairly robust talent pool (both existing and emerging as graduates), capable of participating in the labor force. The area is well positioned to compete in technology advancement as graduates in technology and related degrees are continuously increasing. Furthermore, the growth of workplace opportunities will enable the current and incoming talent pipeline to fully participate in the labor market and develop skills to meet the needs of employers.

In terms of industry needs, the Lehigh Valley needs to focus on developing programs that are individual to the sector. Key assessment outcomes are listed below:

- While occupations including welders, machine operators, truck drivers and packagers might be replaced by automation, the Lehigh Valley is well positioned in terms of technology advancement in the Advanced Manufacturing and Food and Beverage Manufacturing and Transportation, Logistics, Warehousing and Wholesale sectors. As such, employers will need to continue attracting, but more importantly retaining middle-skilled to high-skilled talent to ensure supply is maintained.
- The region is also well positioned to compete in the economy in terms of management and high skills jobs in High Value Business Services, Health Care Services and Life Science Research and Manufacturing. As these sectors are less affected by automation, there will need to be a concerted effort in continuing to grow these skillsets through higher education or attraction efforts.

### 5.2 Stakeholder Observations

#### 5.2.1 Availability of Local, Skilled Talent in the Lehigh Valley

More companies have moved into the area and the unemployment rate of the Lehigh Valley has declined, leading to high levels of competition and increasing wages in sectors that have experienced growth, especially distribution, logistics, and advanced manufacturing.

Demand is high for technically skilled workers (CNC machinists, electromechanical technicians, mechanics, electricians, welders, Programmable Logic Controllers, etc.) highlighting a need for more 'middle-skilled talent' that has the right mix of education and technical aptitude/training. As the job market continues to tighten, some employers are developing their own apprenticeship programs where they are training employees and developing mentoring programs to complement that further.

#### 5.2.2 Aligning the Education Sector with Employer Demands and Expectations

There is a strong desire from the business community to enhance collaborative efforts with the education sector. Businesses leaders want to see more opportunities for workplace learning incorporated into postsecondary programming through such channels as co-ops, internships, etc. Educating the population about where the jobs are, and the skills, experience, and education needed to



capitalize on these opportunities was also identified as necessary. These efforts should specifically target individuals who are in the process of entering or deciding a postsecondary pathway. Helping individuals make informed decisions with the local labor market information will offer a more realistic sense of what career opportunities are available.

Fostering a better realization of what career opportunities exist and how students can best prepare for them from kindergarten to postsecondary can promote and present jobs in compelling ways. Suggestions included school field trips to visit local employers and summer internships for high school students. Attention to students at the middle school and high school levels should also be a priority, specifically on the topics of vocational and technical school training opportunities. Consideration around creating more immersive and experiential experiences for students in 11<sup>th</sup> and 12<sup>th</sup> grades was also expressed. More internship opportunities with the region's small and medium-sized companies were seen to benefit the student and the business.

### 5.2.3 Flexibility Needed in Curriculum, Training and Workplace Opportunity Programs

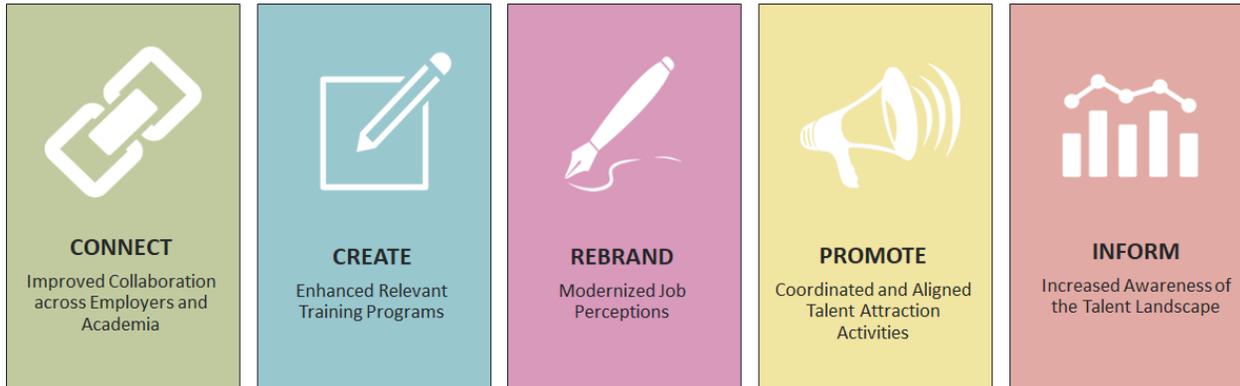
Businesses and industry leaders spoke at length about the need to provide alternate methods of delivering training programs and curriculum. Suggestions included offering accelerated programs and shorter training with stackable credentials. Additionally, employers view noncredit programs that link outcomes to industry accredited skills as valuable. More focus on the employability skills and the cultural transition of moving from college to the workforce supports graduate transition.

Educators and employers believe it is important to increase employer awareness of the value (return on investment) of apprenticeships, co-ops, and internships. Educators and employers recognize that graduates undergoing workplace opportunity training develop better communication and team building skills. They also have the opportunity to engage in day to day activities, facilitate and improve knowledge of procedures, documentation, and tools. Recently, local educational institutions have been encouraging the growth of these platforms as career paths for students, but there appears to be a disconnect in the number of local businesses investing in these types of workplace opportunities.



## 6. Strategy Pillars

Based on the key themes and analysis, distinct recommendations have emerged. In certain instances, these recommendations may support and advance existing initiatives that are underway in the Lehigh Valley. There are significant opportunities for collaboration and cooperation among lead organizations working to support the alignment of talent supply and demand in the region. The recommendations can be sorted into five key strategy pillars.



### 6.1 Strategy Recommendations

#### Recommendation N° 1 | CONNECT | Improved Collaboration across Business and Academia

Consultation and research findings highlight a need to inform students about job and career opportunities that employers are providing today, and about the future of the Lehigh Valley's job market. Improving collaboration between business and academia in the Lehigh Valley will improve the consistency and availability of certifications and training opportunities that employers are demanding, and schools are offering. Businesses report a high level of satisfaction with the certifications and training of employees, but a lower degree of satisfaction with employability skills such as critical thinking, problem solving and communication. The opportunity for dialogue related to these employability skills and how they can be integrated into curriculum and workplace learning will enhance the job search and workplace experience for the job seeker and the employer. Employability skills are critical to talent preparation and marketability. The region should consider ways to define employability skills and codify the instruction of those skills in a structured, consistent, systemic way. To do so will take consistent guidance from regional agencies and perseverance from local employers and educational institutions.

The education sector is looking to employers to inform career resources and provide more mentoring and workplace learning opportunities for students. There is a demand for employers to be actively involved in the schools. Students who have exposure to local employers through job experience opportunities can develop a base of knowledge that better prepares them to enter and be successful in the workforce. Encouraging employers to be more active in developing mentoring and experiential programs will help to grow the local talent pipeline. Opportunities through mentorships, apprenticeships, co-ops, and internships will provide an improved pool of workers.



Creating a unified approach and vision between employers and education providers throughout the Lehigh Valley is a critical step in better understanding what is needed to strengthen the Lehigh Valley competitiveness and economic prosperity.

### **Recommendation N° 2 | CREATE | Enhanced Relevant Training Programs**

Consultation and research findings indicate that employers feel that the delivery of training programs is quite good. Several employers have turned to in-house training or have established relationships with online or postsecondary training programs/seminars. Employers noted that the lack of diversity in the types of training programs available in the Lehigh Valley is a challenge. Employers indicated that many local training programs are dated, and with rapidly changing business environments, training programs focused on technology skills and continuous learning were needed if companies are to remain competitive. Additionally, individuals entering the labor force, changing jobs, or re-entering the labor force after a period of unemployment often require new or improved skills that current training programs are not offering.

An added concern in the current workforce landscape is the number of workers expected to retire in the near future, which has fueled the need for replacement workers. Talent management of an employee includes hiring, training, and replacement and results in both time and monetary costs. Thus, it is important to develop effective and enhanced training programs to reduce staff turnover and provide opportunities for aging workers to remain in the workforce in some capacity. Suggestions included offering more non credit programs, especially tying the outcomes of the program to industry accredited skills, and a greater focus on employability skills and the cultural transition from moving from school to work.

Research findings also indicated that job seekers are unaware of workplace opportunities that exist in the Lehigh Valley. It is perceived by local employers that there is limited exposure for students to job opportunities and career pathways. There is a desire to improve the efficiency and effectiveness of connecting local job seekers with relevant job opportunities.

There was also a desire from stakeholders to increase awareness among employers about the differences and value (return on investment) between apprenticeships, co-ops, and internships. Local educational institutions support the growth of these platforms and are encouraging local businesses to invest in these types of training opportunities. Employers should consider engaging with educational institutions to validate specific skills training for their employees.

### **Recommendation N° 3 | REBRAND | Modernized Job Perceptions**

Based on the insights shared by local stakeholders, there is a perception of manufacturing jobs as low-paying and having limited future growth. These perceptions affect interest in manufacturing jobs, and available talent for the types of positions that today's advanced manufacturers need. There is a desire to rebrand these employment opportunities and industries, focusing on the sophistication of the technologies they use and the quality of the jobs they offer.

Suggestions to support the rebrand include, highlighting success stories of current employees, demonstrating the strength of career paths in these traditional industries, and working with educational institutions (grade school, high school and postsecondary) to demonstrate potential career paths in these industries beyond general labor.



#### **Recommendation N° 4 | PROMOTE | Coordinated and Aligned Talent Attraction Activities**

Consultation activities indicated that employers are finding it difficult to fill vacancies locally. Comments reflected a very tight labor market and stiff competition among a limited talent pool, making talent attraction from outside the Lehigh Valley a top priority. Attracting external talent requires community and cultural developers that support key attributes such as developing quality of place, quality of life, improving transit, providing affordable housing options, and the creation of unique local experiences (cultural assets or tourism assets), in addition to a central repository that showcases the depth and breadth of the available employment opportunities. Promotion of the region and all it offers requires marketing not only on job boards or job fairs but through promotion of the Lehigh Valley as a community of choice. Collaboratively investing in marketing and investing in community development will support a broader awareness of the employment opportunities available and promote the region as a viable option to relocate.

#### **Recommendation N° 5 | INFORM | Increased Awareness of the Lehigh Valley's Talent Landscape**

Reliable, accurate and relevant information is a necessity to the decision-making process. As educators, workforce organizations, and economic development agencies explore solutions to address the supply and demand disconnect, now and looking to the future, there is recognition that the appropriate systems and processes must be utilized. Understanding how the interests of students in local schools and postsecondary streams are impacting programming enrollment and the number of graduates in relevant fields is valuable information as it ultimately influences what jobs these graduates will be pursuing. Further, having a clear picture of where individuals are seeking work, both from an industry and geographic lens informs the commuter flows and helps to validate the types of skills and competencies that are leaving the Lehigh Valley each day.

With access to this type of data, strategies can be directed to influence student career pathways towards the employment opportunities that are locally available, in addition to local campaigns to inform commuters that they can work closer to home. To achieve the goal of attracting and retaining talent, and build a strong talent pipeline, having the necessary systems in place to collect, analyze and monitor local data will serve to produce important intelligence to influence and inform decisions.

## **6.2 Driving Action through Vision**

To build on these recommendations of CONNECT, CREATE, ENGAGE, PROMOTE, and INFORM, the vision will provide an overarching, forward-focused talent alignment of the Lehigh Valley in 20 years. Recognizing that significant efforts are already underway involving key stakeholders on the supply and demand sides of the talent market, the vision is not organization specific. It depicts a reflection of how successful the Lehigh Valley has been in building an ecosystem that fosters talent development, talent attraction and retention, and talent alignment with the region's economic climate. The vision becomes a driver of actions that support the vision being achieved. For the purpose of the Strategic Action Plan and its embedded recommendations and actions the following vision applies:

*The Lehigh Valley is a place admired as a best practice for a regional approach to solving employer and employee needs through collaboration and data-driven self-awareness, making its talent supply strong and adaptable to meet the demands of current and future employers and increasing the competitiveness of the regional economy.*



## 7. Action Plan

### 7.1 Interpreting the Action Plan

#### Timing and Priority

The level of priority should consider:

1. The level of immediacy based on regional objectives
2. The potential to contribute to an increase in the attraction and retention of talent in the Lehigh Valley
3. The resources required (i.e., the capacity to implement given the current state)

The timeline assigned to each action may be operationalized as:

- Short-term – within a year
- Medium-term – 1-3 years
- Longer term – 3-5 years

For each action presented, it is important to identify a lead organization, along with potential partner organizations that can contribute to implementation and monitoring. Review by LVEDC and WBLV and the identified organizations is necessary to validate the alignment with organization mandates, priorities, and available resources.

### 7.2 Role Clarity

#### Economic Development

At its most basic level, economic development has been defined as the “sustained, concerted actions of communities and policymakers... [to] improve the standard of living and economic health of a specific locality”.<sup>8</sup> Over time, the economic development practice has passed through various distinct phases:

In practice, this generally translates into the following types of activities in the community:

- Support and foster industry and business growth
- Investment Attraction and Aftercare
- Business Retention & Expansion (BR&E)
- Economic Gardening
- Entrepreneurial Support
- Incubation, Acceleration, and Technology Transfer
- Tourism Development and Destination Marketing
- Intersects with Workforce Development (on Talent Demand)

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<sup>8</sup> Whatiseconomics.org, “What is economics?” (no date): <http://www.whatisconomics.org/economic-development>;

For a discussion of all three phases refer to Dickinson, Brock, “The Three Ages of Economic Development,” *Municipal World*, (February 2015); pp.27-29; Canadian CED Network, “What is CED?” (no date): [https://ccednet-rcdec.ca/en/what\\_is\\_ced](https://ccednet-rcdec.ca/en/what_is_ced)



## Workforce Development

Workforce development, as a function area, has evolved from human resource development and workforce planning into a “broad range of policies and programs which increase the capacity of individuals to participate effectively in the workforce throughout their working life”.<sup>9</sup> This has expanded workforce development beyond policies to include activities in economic development, immigration, human capital, social security, education, and training.<sup>10</sup>

In practice, this generally translates into the following types of activities in the community:

- Employment and Training Services
- Policy Directions for Employment and Training
- Labor Market Research and Planning
- Employer Engagement and Resourcing
- Skills Development and Educational Alignment
- Employment, Skills, and Training Grants/Funding
- Intersects with Economic Development (on Talent Demand and Supply)

Each of workforce and economic development organizations carries out distinct services within their areas of function, yet there are clearly overlaps such as business engagement and employer engagement and resourcing, and skills development and educational alignment. In the United States, the interdependence and deep correlation between economic and workforce development has long been recognized, and is best summed in the following quote:

*“Workforce development” is an essential component of (community) economic development in any economic climate.... Generally speaking, the term has come to describe a relatively wide range of activities, policies and programs employed by geographies to create, sustain and retain a viable workforce that can support current and future business and industry.*<sup>11</sup>

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<sup>9</sup> Bramwell, Allison – MOWAT Centre EI Task Force. 2011. “Training Policy for the 21st Century: Decentralization and Workforce Development Programs for Unemployed Working-Age Adults in Canada”. 2011 Mowat Centre for Policy Innovation;

<sup>10</sup> Wood, Donna E. and Thomas R. Klassen. 2009. “Bilateral Federalism and Workforce Development Policy in Canada.” Canadian Public Administration 52.2

<sup>11</sup> Lyn E. Haralson - Federal Reserve Bank of St. Louis, <https://www.stlouisfed.org> › Publications › Bridges › Spring 2010



## 7.3 Strategic Action Plan

### Recommendation N°. 1 | CONNECT

**Action 1:** Engage with educational institutions (leadership, teachers, and students) to develop a greater understanding of current work opportunities in the Lehigh Valley and the skills, education levels, and knowledge needed to succeed.

#### Tactics

1. Continue to create opportunities for employers to come together to explore opportunities for training coordination to provide specific skills training for employees. This may be across internal departments, through an external consortium, and/or with educational institutions.
2. Create a Speakers Bureau with representatives from local employers who are supportive of engaging with local educational institutions and sharing their existing career stories or business approach to hiring.
3. Conduct an annual “familiarization tour” of local businesses, inviting faculty members, career counselors, and administration from local educational institutions to experience local workplaces. This may be held annually, promoted as the Lehigh Valley Business Education Day and focused on getting educators into local workplace environments.
4. Engage with educational institutions to ensure that relevant workforce information is shared, and that decision-making bodies are informed on matters related to future job development including academic, technical, and employability skills.

**Action 2:** Continue to advocate for greater awareness of the importance of employability skills.

#### Tactics

1. Advocate for employability skills training programs (e.g., Skillsoft) across institutions to improve job retention and career growth.
2. Develop a mentorship program connecting talent with existing leaders in targeted sector areas, exposing talent to the realities of the workplace, and the types of skills needed for success.
3. Create a network to help semi-retired and retired individuals access employment opportunities to fill employment gaps and provide mentorship.

**Action 3:** Support the continued development of an employer-driven, competency-based career pathways system.

#### Tactics

1. Through sector specific training that has been endorsed by the sector, create a career laddering platform that supports lower-skilled workers to make an immediate contribution, and explore opportunities for workplace advancement.
2. Develop and clarify high priority career pathways to demonstrate career progression from entry level to highly skilled opportunities.



## Recommendation N°. 1 | CONNECT

**Action 4:** Promote STEM education to create a regional competitive advantage.

### Tactics

1. Strengthen student access and exposure to STEM through the introduction of pathways that move from exploration to hands-on learning. This may involve research, or creation of and increased access to a Maker Space, a Breaker Space, a Coding Space, etc.
2. Increase K-12 involvement in Talent Supply Work, through direct outreach and engagement that supports information sharing, and conversations about the economy and how it influences work availability. Such information supports career guidance initiatives that are held at the schools.



## Recommendation N°. 2 | CREATE

### Action 1: Promote awareness of ongoing training services and initiatives.

#### Tactics

1. Create a regional database of workforce and professional training opportunities for employees and employers to access. This could be presented in the form of a training calendar with links to local providers to promote what is available locally and regionally.
2. Encourage local business owners to seek experiential work term opportunities (internships, co-ops, apprenticeships) for local secondary and postsecondary students.
3. Document and share best and promising practices for employers to showcase tangible approaches to creating and adapting to a flexible workplace.
4. Convene an annual or bi-annual forum with economic development, employment agencies, chambers and other intermediary groups, employers and postsecondary institutions to evaluate skill and occupation needs in the region and match those needs with available training programs. This event may support an Employer/Recruitment panel to share insight into hiring practices, hiring preferences, and challenge recruitment and retention issues.

### Action 2: Improve flexibility in learning and knowledge exchange to encourage broader participation, especially for learners who have barriers to access.

#### Tactics

1. Encourage the development of more online, part-time and modular programming to increase access.
2. Encourage businesses to use mentorship as both a recruitment and retention practice.

### Action 3: Promote Cultural Diversity Training and multi-generational awareness.

#### Tactics

1. Offer easy-to-access training for employers to increase awareness and share strategies for managing diverse and multi-generational workplaces.

### Action 4: Promote exploration of technical and applied skills needed in high-demand sectors.

#### Tactics

1. Integrate a Career and Technical Education Introduction in the classroom as part of the career exploration curriculum.



### Recommendation N°. 3 | REBRAND

#### Action 1: Improve perceptions about and understanding of modern manufacturing jobs.

##### Tactics

1. Develop a program of business tours, seminars, and hands-on learning opportunities for students to demonstrate the new image of targeted sectors.
2. Expand and increase access by students and the community to targeted job profiles to increase student awareness of local opportunities.
3. Share employee experiences living and/or working in the Lehigh Valley via a social media campaign utilizing relevant platforms that are popular among target audiences such as K-12, parents, postsecondary students, career practitioners, etc.

#### Action 2: Encourage employers to undertake a workplace skills inventory to support promotion from within.

##### Tactics

1. Support businesses to carry out workplace skills assessments, resulting in an evidence-based analysis of in-house skills, knowledge, and competencies. This will support employer's promoting employees from within, and then backfilling the lesser skilled positions through external recruitment; this also demonstrates employer commitment to employee advancement.

#### Action 3: Increase awareness of the assets of the Lehigh Valley to promote it as a "place of choice" to work, live, and raise a family.

##### Tactics

1. Encourage businesses to promote their corporate culture beyond salary as candidates are considering workplace culture, personal alignment with corporate values, quality of life and place, and opportunities for advancement.



## Recommendation N°. 4 | PROMOTE

**Action 1:** Promote the Lehigh Valley as a great place to live, work, and raise a family.

### Tactics

1. Develop an information resource that highlights information on housing, education, lifestyle, affordability, etc. in the Lehigh Valley. This can be used across organizations, local businesses and stakeholder groups to promote the Valley with a common message to strengthen and consistently reflect the local brand.
2. Host a job fair of local employers for community college and career and technical students similar to the Lehigh Valley Collegiate Career Expo.
3. Coordinate with academia to reach alumni who have left the region and promote employment opportunities and attract alumni back; gather insights into their reasons for leaving.
4. Promote local industry associations / business associations as key stakeholders supporting business and talent attraction, retention and expansion.

**Action 2:** Community Asset Mapping.

### Tactics

1. Map existing community assets to showcase a detailed and clear lifestyle value proposition; promote this within and outside of the region.

**Action 3:** Promote Buy Local Activities.

### Tactics

1. Promote buy local to showcase the amenities of the region and encourage a deeper connection and sense of place.

**Action 4:** Attract High Value Jobs through Business Attraction and Retention.

### Tactics

1. Strategically target high value business services employers to increase local job opportunities in higher-skilled, higher wage occupations.



## Recommendation N°. 5 | INFORM

**Action 1:** Maintain a current view of the labor market demand, as informed by employers.

### Tactics

1. Convene targeted sector working tables to ensure current, relevant, and validated identification of current and future talent demand.
2. Conduct an annual Employer Survey to ensure a current and reflective profile of employer job demand, occupation vacancies, and labor market challenges.

**Action 2:** Monitor available labor market information to accurately reflect labor force activity.

### Tactics

1. Uncover migratory patterns of the Lehigh Valley residents who leave for postsecondary. Track where they go, what programming they complete, and if/when they return.
2. Research skills, occupations and zip codes of the Lehigh Valley residents who leave for employment outside of the Lehigh Valley (commuters).
3. Continue to utilize existing data sources to remain current on labor market trends, training and postsecondary preferences of students, and the emergence of new jobs as a result of technology and economic shifts.



## 8. Conclusion

The Lehigh Valley has recognized the necessity to be proactive and forward-thinking in the response to business needs for a skilled and talented labor force. In this ever-changing global environment, competition for talent is no longer constrained by distance, rather communities on either side of the globe are linked through ease of mobility and transformational technologies. Economic activity on a global scale is fueling a battle for talent and those regions that ensure a reliable, current and evidence-based understanding of their local labor market will be best positioned to win this battle.

Workforce and economic development organizations carry out distinct services within their areas of function, yet there are clearly overlaps such as business engagement and employer engagement and resourcing, and skills development and educational alignment. The convergence of workforce and economic development is at the point at which the local labor force can meet industry's skills and knowledge needs. This is driving the necessity for these two core functions (economic and workforce development) to work cohesively and in-step with a common agenda to drive competitiveness in the attraction and retention of businesses and a skilled talent pool.

This commitment to collaboration and cooperation is clearly evident in the Lehigh Valley with local economic development organizations, Lehigh Valley Economic Development, Workforce Board Lehigh Valley, educational institutions, and other key stakeholder groups coming together with a common agenda. In short, this initiative strives to strengthen the alignment of talent supply and demand, with consideration of future requirements across targeted economic sectors. It is about influencing skills development to support labor demand today and being responsive to labor demand as industry and businesses transform in the 21<sup>st</sup>-century economy.