2018 Quarter 2

New River Mount Rogers

(WDA II)

Quarterly Workforce Report

VIRGINIA TECH

Office of Economic Development

VIRGINIA CAREER WORKS

NEW RIVER | MOUNT ROGERS REGION

Quarterly Workforce Report 2018.2

Welcome to the 2018 second quarter workforce report, produced by the Virginia Tech Office of Economic Development on behalf of the New River Mount Rogers Workforce Development Board (WDA II). This region comprises the New River Valley Regional Commission and the Mount Rogers Planning District, including the counties of Bland, Carroll, Floyd, Giles, Grayson, Montgomery, Pulaski, Smyth, Washington, Wythe and the independent cities of Bristol, Galax and Radford. These quarterly reports present an analysis of regional labor supply and demand data, to inform the public of the evolving workforce landscape. Please note that the data presented in this report is the most up-to-date data available as of June 2018.

The data presented in this report represent a brief workforce gap analysis for the next few years (2017-2022), followed by some descriptions of best practices for workforce systems. For each of the region's target industries, we provide basic statistics of the industry and a handful of current in-demand occupations. No indicator of demand or supply is perfect. Taken together, however, they offer a glimpse of possible programs to support, skill sets to promote, and broader strategies to pursue. Some indicators of current and future demand and supply include:

- *Demand*: occupation growth, average number of job openings per year (due to occupation growth and retirements), number of jobs posted within a given period versus the actual number of jobs filled during that period, and frequency of job postings.

- *Supply:* number of current jobs (i.e. number of people who already hold the position), annual number of graduates from programs that align with one or more in-demand occupations, the rate at which workers' skill sets (cited on their resumes) match the skills demanded in job postings.

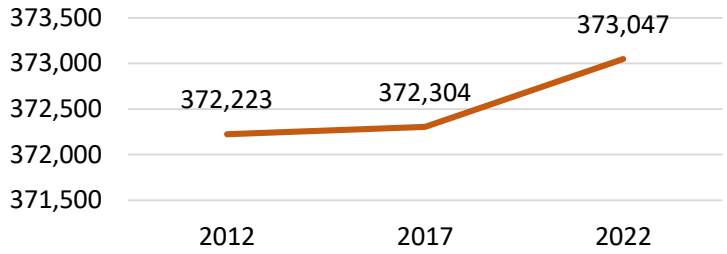
Still, these indicators do not account for other key factors that may prevent workers from obtaining in-demand jobs. Other barriers not represented here are extensive. One key barrier is whether workers for middle-skill jobs (e.g. nurses, machinists or welders) actually pass the certification exams after completing a training program (pass rates for most professional certificates are difficult metrics to collect). Another barrier is a worker's ability to maintain a job due to personal or professional challenges ranging from lack of soft skills (critical thinking or customer service) to lack of transportation or sufficient child care options. These barriers require broader regional strategies that one or more training programs and the workforce system alone can not address.

Economic & Workforce Trends

Population Trends

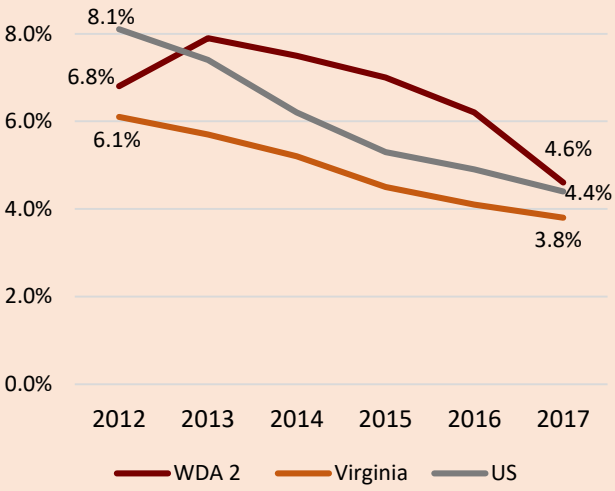
During the last 5 years (2012-2017), WDA 2's population has remained stable with relatively 0% growth. This trend may continue in the next five years. At both state and national levels, the population is expected to grow by 6% during the same period (2012-2022).

Population Trend (2012-2022)

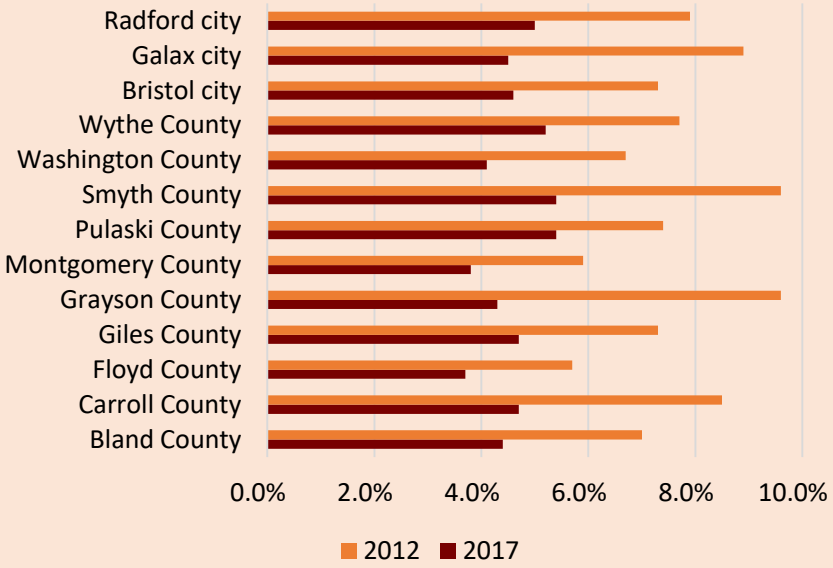


Labor Force Trends

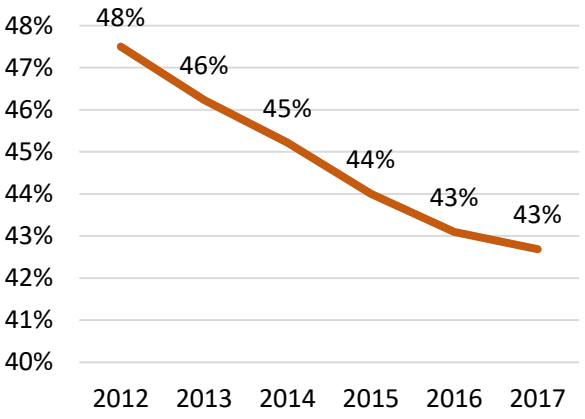
Unemployment Rate (2012-2017)



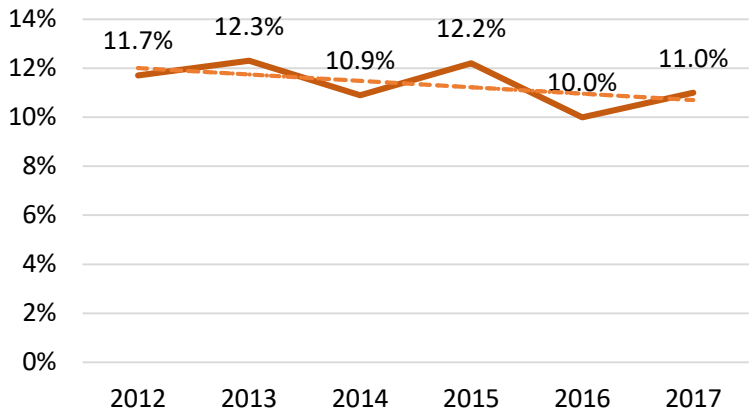
Unemployment Rate (2012-2017)



Labor Force Participation 2012-2017



Underemployment 2012-2017 (March)

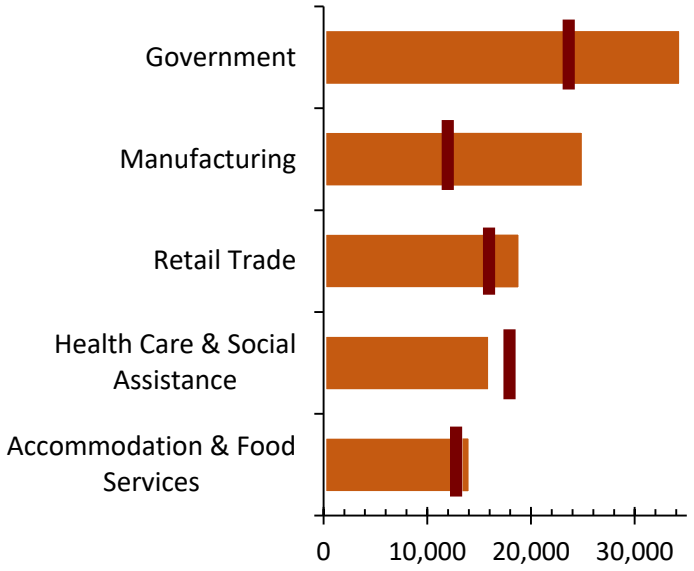


Sources: EMSI Developer 2018.2 Demographic Report, American Community Survey, U.S. Census (2016, Local Area Unemployment Statistics. U.S. Bureau of Labor Statistics. (2017). American Community Survey. US Census. (2016)

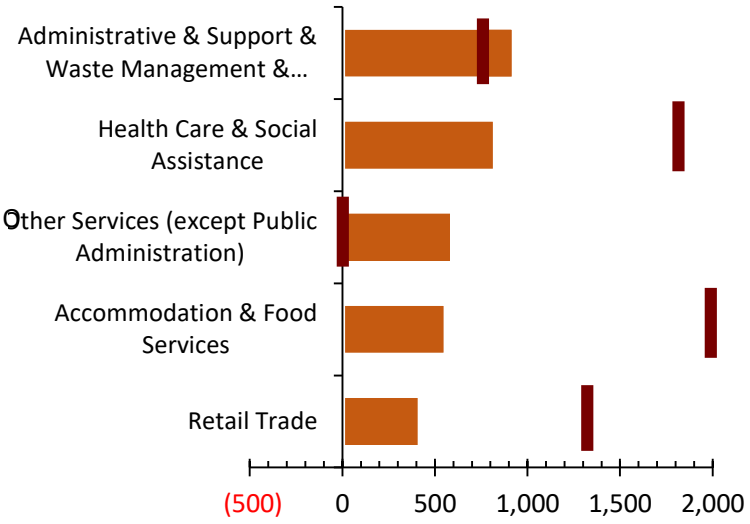
Industry Trends

The orange bars below show major industry trends in WDA I. The maroon lines represent national industry trends for similar sized regions. For example, WDA II has a larger presence of government and manufacturing than the national average. WDA II also has more growth in administrative, support, waste management and remediation services as well as other services, excluding public administration.

Top Five Employing Industries

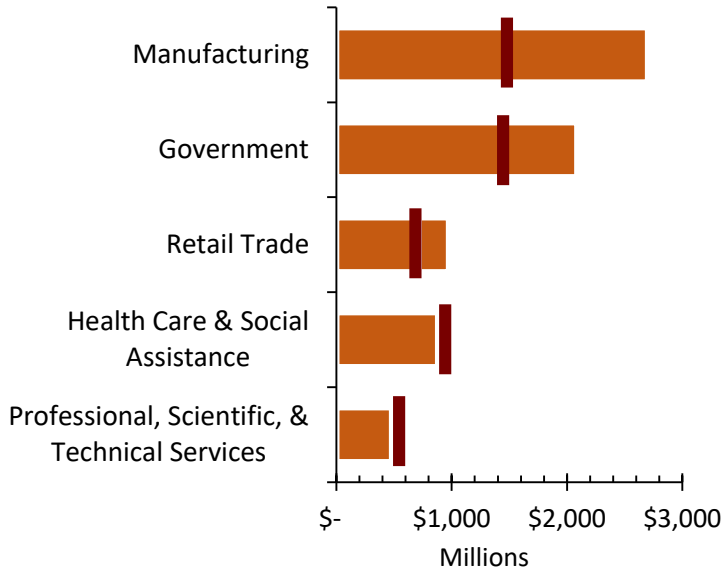


Top Five Growing Industries

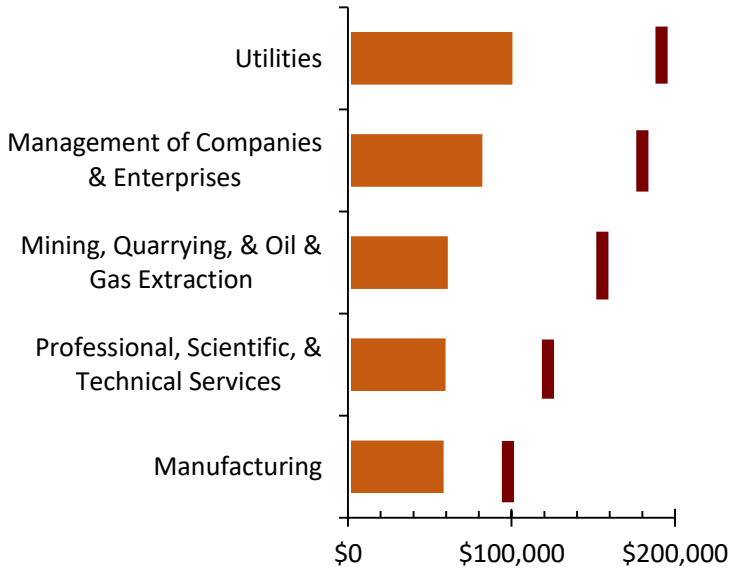


Manufacturing is the most profitable for the region, but it has the fifth highest earnings per worker. The higher than national average GRPs in manufacturing, government and retail indicate a significant reliance on these industries for the region's economic activity and well-being. Future economic prosperity could be attained through more industry diversification and growth in the region's other top traded sectors: healthcare and professional, scientific, and technical services.

Top Five Industries Based on Gross Regional Product (GRP)



Top Five Industry Earnings per Worker



Sources: EMSI Developer 2018.2 Class of Worker

Manufacturing Industry

All in-demand occupations listed below have significant numbers of annual openings. Particularly need exists for middle skill occupations (maintenance, technicians), managerial positions, and knowledgeable sales representatives. However, there is limited supply of potential workers coming out of programs, possibly due to lack of awareness of these employment opportunities. Meanwhile, open managerial positions implies a need to foster more leadership and critical thinking soft skills in our workforce both in classrooms and on-the-job. Resumes may not be a good indicator of managerial skills here. On-site managerial training or support for part-time training programs may be beneficial.

2017 Jobs	% Projected Job Growth	Location Quotient	Gross Regional Product
17,132	**4%**	**1.26**	**$2.2B**
9.9% of 173,256 total jobs	(2017-2022)	Employment in this industry is 1.26 times more concentrated than the national average	This industry generates 15% of the area's GRP

Food & Beverage Manufacturing

2017 Jobs	% Projected Job Growth	Location Quotient	Gross Regional Product
1,108	**18%**	**1.93**	**$149M**
0.6% of 173,256 total jobs	(2017-2022)	Employment in this industry is 1.93 times more concentrated than the national average	This industry generates 1% of the area's GRP

In-Demand Occupations at $15/hr or above

**Data in RED indicate distinct demand

Description	Supply	Indicators of Possible Demand (2017-2022)				Other Relevant Details	
	2017 Jobs	Projected 5yr Change	Average Annual Openings	Unique Postings to Hires	Posting Trend line (9/2016- 4/2018)	Median Hourly Earnings	Typical On-The-Job Training
Maintenance & Repair Workers	1,781	5%	**194**	**94:83**		$16.11	Moderate OJT
General & Operations Managers	1,411	6%	**135**	**113:74**		$37.55	None
Sales Representatives, Wholesale & Manufacturing	1,046	7%	**126**	**65:41**		$24.84	Moderate OJT
Electrical, Electronics, & Electromechanical Assemblers	913	(4%)	**109**	7:22		$17.28	Moderate OJT
Inspectors, Testers, Sorters, Samplers, & Weighers	797	2%	**102**	**23:15**		$16.60	Moderate OJT
First-Line Supervisors of Production & Operating Workers	893	2%	**94**	**83:26**		$26.31	None
Welding, Soldering, & Brazing Workers	834	(2%)	**92**	4:15		$19.20	Moderate OJT
Industrial Machinery Installation, Repair, & Maintenance Workers	833	8%	**91**	11:25		$20.39	Long-term OJT
Machinists	544	5%	**63**	1:2		$20.97	Long-term OJT
Engineering Technicians, Except Drafters	516	0%	**48**	**9:5**		$24.93	None

Sources: EMSI Developer 2018.2 Class of Worker

CAREER PIPELINE: Program Completions for In-Demand Occupations

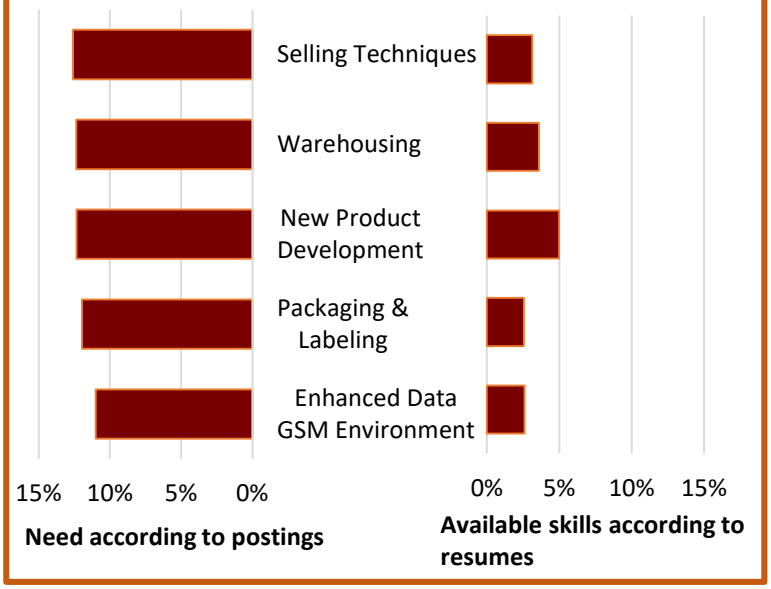
2016 Programs	2016 Program Completions	2016 Regional Openings	Institutions offering programs
7	146	479	4

Program	Institutions that offer these programs	Award level	Program Completions (2012-2016)
Welding Technology/ Welder *(Welding, Soldering, & Brazing Workers)*	NRCC, VHCC, Washington County Adult Skill Center	< 1 academic year 1 but < 2 academic years	25 → 59
Industrial Electronics Technology *(Electrical, Electronics, & Electromechanical Assemblers)*	NRCC	< 1 academic year Associate's Degree	18 → 40
Electrical, Electronic & Communications Engineering Technology (*Electrical, Electronics, & Electromechanical Assemblers)*	NRCC, VHCC, WCC	< 1 academic year Associate's Degree	27 → 24
Industrial Production Technologies *Industrial Machinery Installation, Repair, & Maintenance Workers)*	NRCC, VHCC, WCC	< 1 academic year 1 but < 2 academic years	28 → 14
Environmental Control Technologies *(Industrial Machinery Installation, Repair, & Maintenance Workers)*	VHCC	1 but < 2 academic years Associate's Degree	9 → 9
Machine Tool Technology/Machinist *(Machinists, Maintenance & Repair Workers)*	Washington County Adult Skill Center	< 1 academic year	10 → 0
Industrial Technology *(Inspectors, Testers, Sorters, Samplers, & Weighers)*	WCC	Associate's Degree	2 → 0

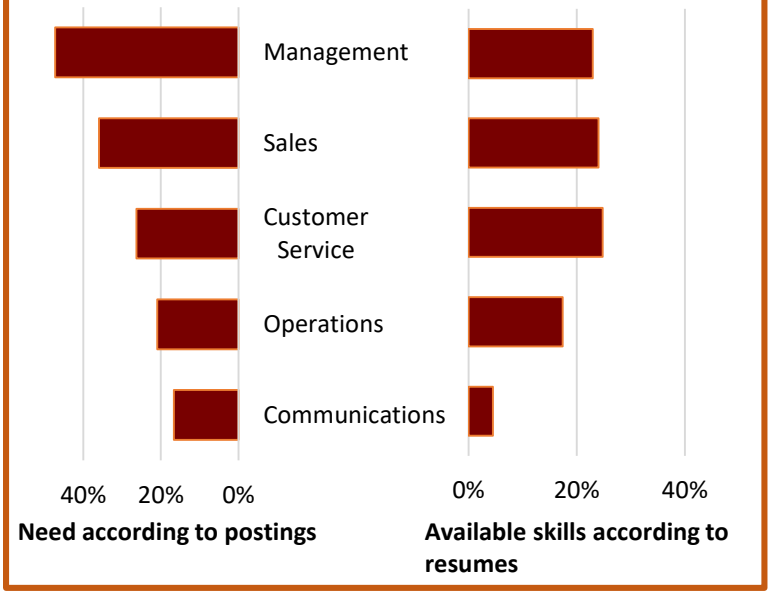
**Programs exclude Bachelor's degrees and above.*

In-Demand Occupation Skill Gaps based on Job Postings and Resume Data

Top 5 Hard Skills



Top 5 Soft Skills

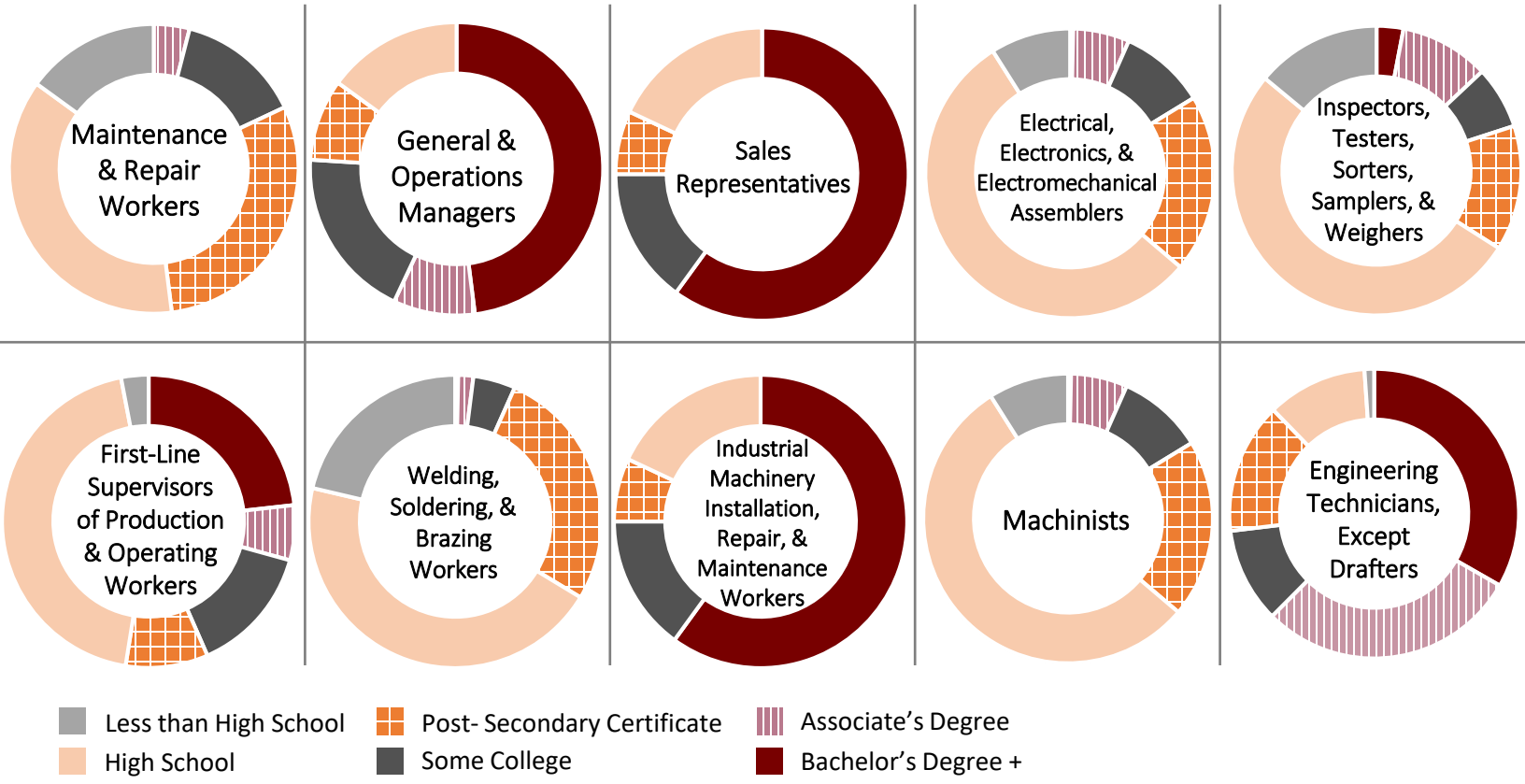


Source: EMSI Developer 2018.2 Class of Worker

Competencies for In-Demand Occupations

Knowledge Competencies	Skills Competencies
• Mathematics • Engineering and Technology • Mechanical • English Language • Production and Processing • Design • Computers and Electronics • Education and Training • Physics • Customer and Personal Service	• Critical Thinking • Reading Comprehension • Active Listening • Monitoring • Operation Monitoring • Speaking • Quality Control Analysis • Writing • Complex Problem Solving • Troubleshooting

Educational Attainment for In-Demand Occupations



Sources: EMSI Developer 2018.2 Class of Worker
*O*NET 15.0 Database, June 2010. O*NET Educational Attainment is a breakdown of the education levels generally required for employment in an occupation. These levels are national averages and may not reflect educational attainment in the region.*

Healthcare and Social Services Industry

As the healthcare and social services sector grows, demand for nurses, counselors and therapists, and social workers becomes more apparent. With these jobs in particular, supply is comparable to national numbers, but still does not meet the demand for these workers. Furthermore, compensation for these jobs is drastically lower than other regions, and the retirement risk is high. Finding ways of training individuals for these occupations and incentivizing them to stay in the region is key. Incentives could include increased wages, improving the region's quality of life, integrating students into the community and workforce before they graduate (e.g. internships), and providing scholarship funds that stipulate community service after graduation.

2017 Jobs	% Projected Job Growth	Location Quotient	Gross Regional Product
16,118	**11%**	**0.83**	**$878M**
10.5% of 152,878 total jobs	(2017-2022)	Employment in this industry is less concentrated than the national average	This industry generates 8.1% of the area's GRP

In-Demand Occupations at $15/hr or above

**Data in RED indicate distinct demand

Description	Supply	Indicators of Possible Demand (2017-2022)				Other Relevant Details	
	2017 Jobs	Projected 5yr Change	Average Annual Openings	Unique Postings to Hires	Posting Trend line (9/2016- 4/2018)	Median Hourly Earnings	Typical On-The-Job Training
Secretaries & Administrative Assistants	2,681	4%	**314**	109:110		$15.23	None to moderate-term OJT
First-Line Supervisors of Office & Administrative Support Workers	1,475	7%	**168**	**19:15**		$20.11	None
Registered Nurses	2,172	7%	**146**	**604:81**		$25.44	None
Counselors	1,147	5%	**134**	**27:22**		$19.11	Possible internship/ residency
Social Workers	918	6%	**107**	**7:5**		$18.48	Possible internship/ residency
Miscellaneous Community & Social Service Specialists	754	7%	**97**	**88:29**		$15.53	None to Short-term OJT
Licensed Practical & Licensed Vocational Nurses	1,056	8%	**94**	**81:56**		$16.80	None
Preschool & Kindergarten Teachers	657	4%	**73**	8:27		$17.69	None
Therapists	611	7%	**39**	**255:24**		$34.34	Possible internship/ residency
Physicians & Surgeons	492	9%	**24**	**130:7**		$87.39	Internship/ residency

Source: EMSI Developer 2018.2 Class of Worker

PIPELINE: Program Completions for In-Demand Occupations

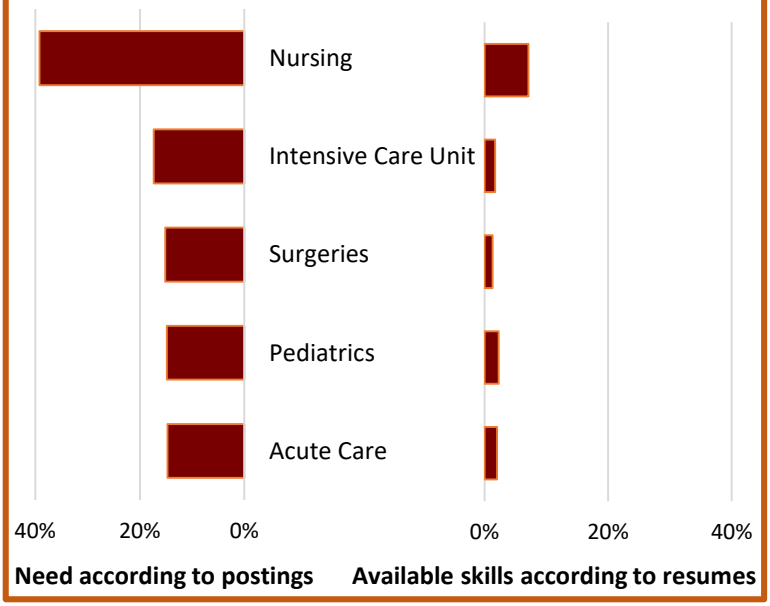
2016 Programs	2016 Program Completions	2016 Regional Openings	Institutions offering programs
6	233	796	5

Programs	Institutions that offer these programs	Award level	Program Completions (2012-2016)	National Exam Pass Rate (2012-2016)	
				WDA2	USA
Health/Medical Preparatory Programs *(Registered Nurses, Licensed Practical and Licensed Vocational Nurses, Physicians and Surgeons)*	Virginia Intermont College	Associate's Degree	0 0	NA	NA
Mental & Social Health Services & Allied Professions *(Counselors)*	NRCC, VHCC, WCC	< 1 academic year 1 but < 2 academic years Associate's Degree	255 64	NA	NA
Public Health *(Community and Social Service Specialists)*	WCC	< 1 academic year	0 0	NA	NA
Registered Nurse	NRCC, VHCC, WCC	Associate's Degree	144 121	88%	84.87%
Licensed Practical/Vocational Nurse Training	NRCC, WCC	< 1 academic year 1 but < 2 academic years	49 48	84%	83.33%
Administrative Assistant & Secretarial Science *(Secretaries & Administrative Assistants)*	Washington County Adult Skill Center	1 but < 2 academic years	10 0	NA	NA

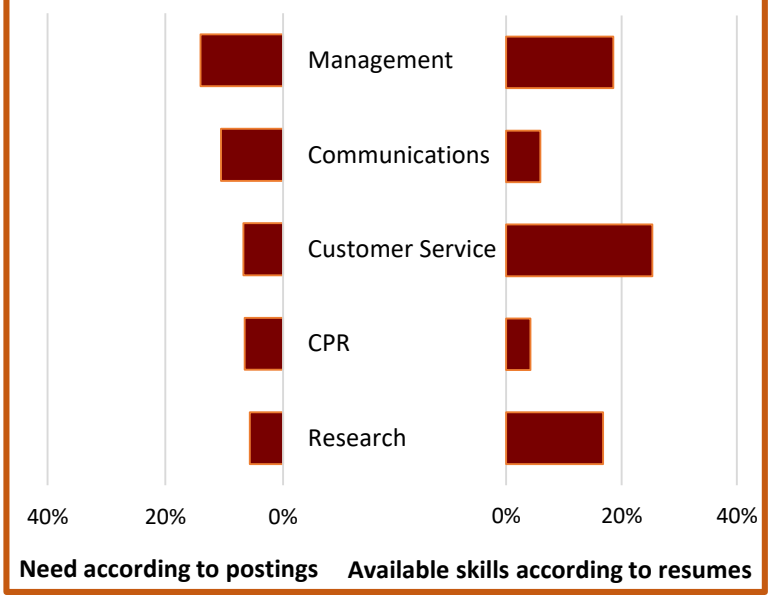
**Programs exclude bachelor's degrees and above. Thus, this listing focuses more on middle skill, health care occupations than social services jobs and those requiring bachelor's or above.*

Skills Gaps according to Jobs Postings and Resume Data

Top 5 Hard Skills



Top 5 Soft Skills

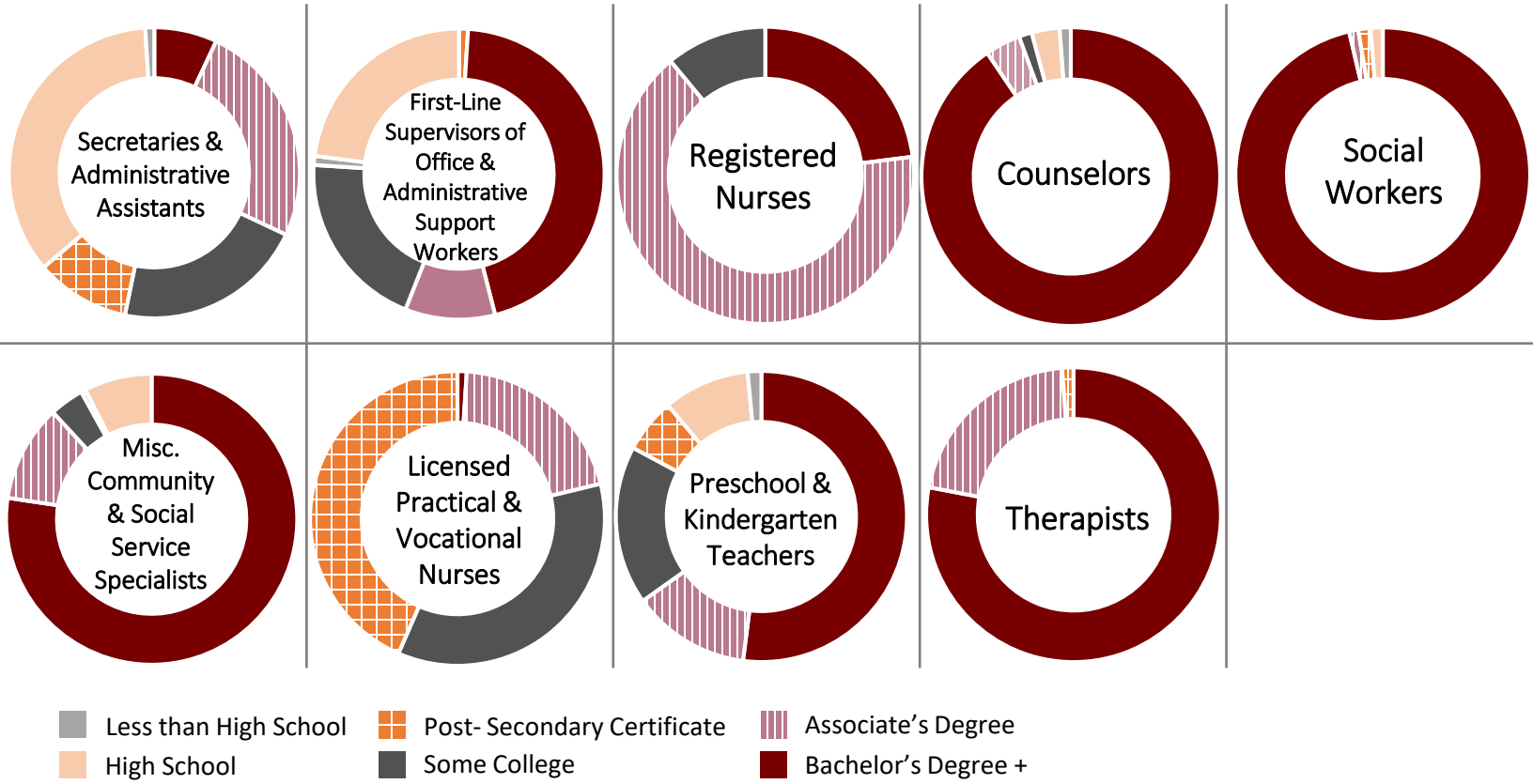


Source: EMSI Developer 2018.2 Class of Worker
**Programs excludes Bachelor's degrees and above.*

Competencies for In-Demand Occupations

Top Knowledge Competencies	Top Skills Competencies
• English Language	• Active Listening
• Customer and Personal Service	• Speaking
• Psychology	• Social Perceptiveness
• Education and Training	• Reading Comprehension
• Therapy and Counseling	• Critical Thinking
• Clerical	• Writing
• Sociology and Anthropology	• Monitoring
• Computers and Electronics	• Service Orientation
• Medicine and Dentistry	• Coordination
• Administration and Management	• Active Learning

Educational Attainment In-Demand Occupations



Sources: EMSI Developer 2018.2 Class of Worker
*O*NET 15.0 Database, June 2010. O*NET Educational Attainment is a breakdown of the education levels generally required for employment in an occupation. These levels are national averages and may not reflect educational attainment in the region.*

Professional, Scientific, & Technical Service Industry

This industry is comprised mostly of consulting and R&D businesses, which require a variety of personnel. Relevant, in-demand occupations include administrative and accounting positions, general managers, computer specialists, and engineering technicians. The pipeline of potential workers does not meet current demand. Those requiring bachelor's degrees suffer because potential workers may leave the region for school or work. Those requiring some college to associate's degrees do not have enough students entering programs, perhaps due to lack of interest or certain computer and math skills. Similar to other industries, the needed skill sets for managers is also limited. A multipronged approach to this industry may be needed; for example, combining awareness campaigns, high school outreach and better skills preparation, and incentives to stay in the region such as better connecting students to job opportunities.

2017 Jobs	% Projected Job Growth	Location Quotient	Gross Regional Product
5,269	**10%**	**0.54**	**$479M**
3.5% of 152,878 total jobs	(2017-2022)	Employment in this industry is less concentrated than the national average	This industry generates 4.4% of the area's GRP

In-Demand Occupations at $15/hr or above

**Data in RED indicate distinct demand

Description	Supply		Indicators of Possible Demand			Other Relevant Details	
	2017 Jobs	Projected 5yr Change	Average Annual Openings	Unique Postings to Hires	Posting Trend line (Sep. 2016- Mar. 2018)	Median Hourly Earnings	Typical On-The-Job Training
Secretaries & Administrative Assistants	2,681	-2%	**314**	109:110		$15.23	None to Moderate-term OJT
Bookkeeping, Accounting, & Auditing Clerks	1,576	6%	**176**	29:78		$15.27	None
General & Operations Managers	1,411	6%	**135**	**113:74**		$37.55	None
Accountants & Auditors	945	7%	**96**	**81:40**		$28.05	None
Software Developers & Programmers	784	4%	**71**	**157:32**		$34.40	None
Computer Support Specialists	727	9%	**67**	**111:35**		$20.42	None
Management Analysts	579	4%	**59**	**49:9**		$38.15	None
Engineering Technicians, Except Drafters	516	4%	**48**	**9:5**		$24.93	None
Designers	393	**13%**	**43**	**49:16**		$15.94	None
Computer & Information Analysts	441	**13%**	**39**	**29:9**		$31.89	None

Source: EMSI Developer 2018.2 Class of Worker

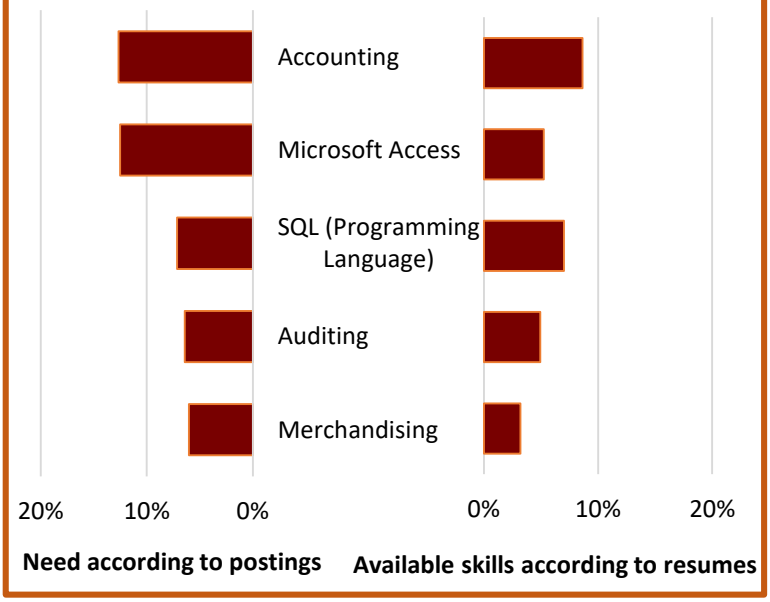
PIPELINE: Program Completions for In-Demand Occupations

2016 Programs	2016 Program Completions	2016 Regional Openings	Institutions offering programs
8	118	665	4

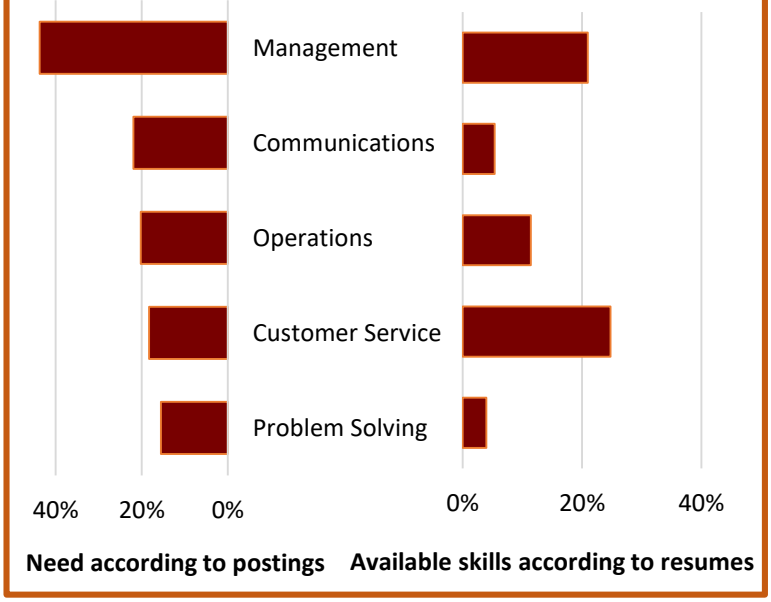
Programs	Institutions that offer these programs	Award level	Program Completions (2012-2016)
Computer & Information Sciences (*Software Developers & Programmers, Computer Support Specialists, Computer & Information Analysts)*	NRCC, VHCC, WCC	< 1 academic year, 1 but < 2 academic years, Associate's Degree	86 → 42
Accounting & Related Services *(Bookkeeping, Accounting, & Auditing Clerks, Accountants & Auditors)*	NRCC, VHCC, WCC	< 1 academic year, 1 but < 2 academic years, Associate's Degree	32 → 27
Electrical, Electronic & Communications Engineering Technology/Technician *(Engineering Technicians, Except Drafters)*	NRCC, VHCC, WCC	< 1 academic year, Associate's Degree	27 → 24
Industrial Production Technologies/Technicians *(Engineering Technicians, Except Drafters)*	NRCC, VHCC, WCC	< 1 academic year, 1 but < 2 academic years	28 → 14
Environmental Control Technologies/Technicians *(Engineering Technicians, Except Drafters)*	VHCC	1 but < 2 academic years, Associate's Degree	9 → 9
Web Page, Digital/Multimedia & Information Resources Design *(Designers)*	NRCC, VHCC	< 1 academic year, 1 but < 2 academic years	7 → 2
Industrial Technology/Technician *(Engineering Technicians, Except Drafters)*	WCC	Associate's Degree	2 → 0
Administrative Assistant & Secretarial Science (*Secretaries & Administrative Assistants)*	Washington County Adult Skill Center	1 but < 2 academic years	10 → 0

Skills Gaps according to Jobs Posting and Resume Data

Top 5 Hard Skills



Top 5 Soft Skills

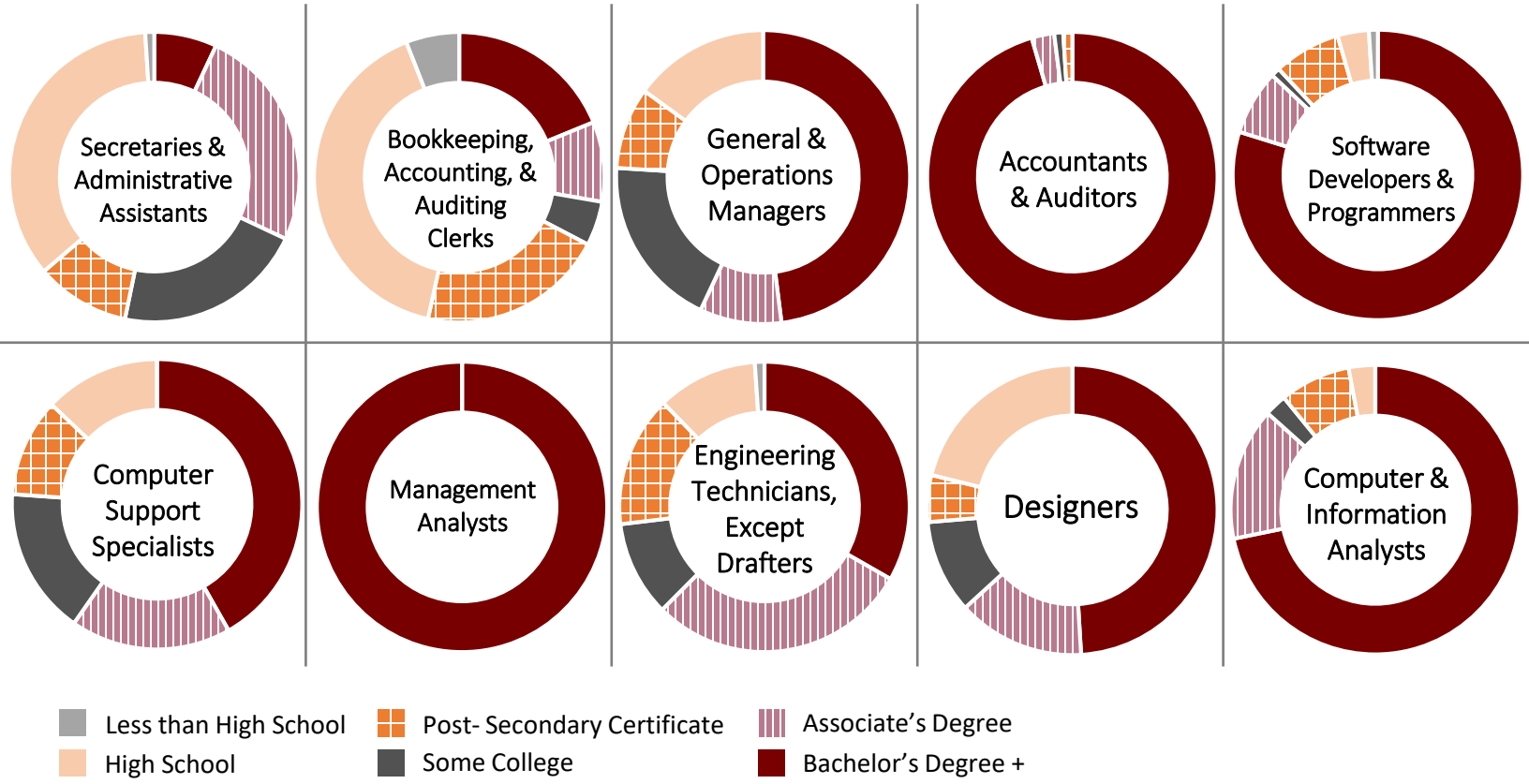


Source: EMSI Developer 2018.2 Class of Worker
**Programs excludes Bachelor's degrees and above.*

Competencies for In-Demand Occupations

Knowledge Competencies	Skills Competencies
• Computers and Electronics • English Language • Mathematics • Customer and Personal Service • Engineering and Technology • Administration and Management • Design • Clerical • Education and Training • Production and Processing	• Reading Comprehension • Critical Thinking • Active Listening • Speaking • Writing • Complex Problem Solving • Monitoring • Judgment and Decision Making • Active Learning • Mathematics

Educational Attainment for In-Demand Occupations



Sources: EMSI Developer 2018.2 Class of Worker
*O*NET 15.0 Database, June 2010. O*NET Educational Attainment is a breakdown of the education levels generally required for employment in an occupation. These levels are national averages and may not reflect educational attainment in the region.*

Tourism Industry

In-demand occupations at $15 or above for tourism include managerial and administrative positions, maintenance workers, and commercial drivers. Management positions particular to the tourism industry require not only comprehensive leadership and critical thinking skills but also strong customer service abilities. Identifying workers with at least some of those skill sets and helping them to foster this mix of skills may be vital to creating a strong tourism backbone. Meanwhile, professional certifications for maintenance and repair as well as commercial driver's license (CDL) drives could be encouraged.

2017 Jobs	% Projected Job Growth	Location Quotient	Gross Regional Product
3,359	**3%**	**0.78**	**$172M**
2.2% of 152,878 total jobs	(2017-2022)	Employment in this industry is less concentrated than the national average	This industry generates 1.6% of the area's GRP

In-Demand Occupations at $15/hr or above

**Data in RED indicate distinct demand

Description	Supply		Indicators of Possible Demand			Other Relevant Details	
	2017 Jobs	Projected 5yr Change	Average Annual Openings	Unique Postings to Hires	Posting Trend line (Sep. 2016- Apr. 2018)	Median Hourly Earnings	Typical On-The-Job Training
General & Operations Managers	1,411	6%	**135**	**113:74**		$37.55	None
Lodging Managers	44	2%	5	1:4		$20.92	None
Athletes, Coaches, Umpires, & Related Workers	308	3%	**43**	9:16		$16.37	None to Long-term OJT
First-Line Supervisors of Building & Grounds Cleaning & Maintenance Workers	296	2%	**34**	**17:16**		$15.32	None
First-Line Supervisors of Sales Workers	1,802	4%	**205**	**199:54**		$17.37	None
First-Line Supervisors of Office & Administrative Support Workers	1,475	7%	**168**	**19:15**		$20.11	None
Bookkeeping, Accounting, & Auditing Clerks	1,576	-2%	**176**	29:78		$15.27	Moderate OJT
Maintenance & Repair Workers	1,781	5%	**194**	**94:83**		$16.11	Moderate OJT
Driver/Sales Workers & Truck Drivers	3,028	3%	**352**	**3,332:175**		$15.22	Short-term OJT

Source: EMSI Developer 2018.2 Class of Worker

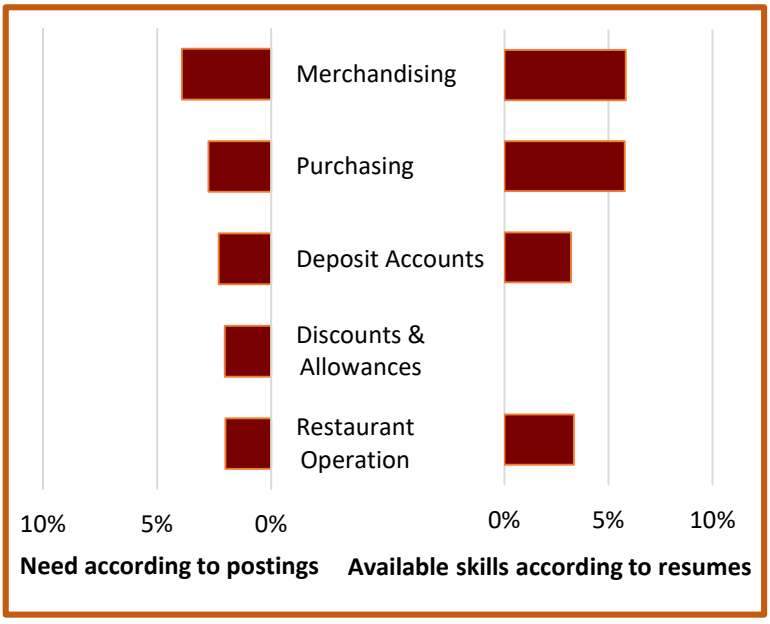
Program Completions for In-Demand Occupations

2016 Programs	2016 Program Completions	2016 Regional Openings	Institutions offering programs
3	89	300	3

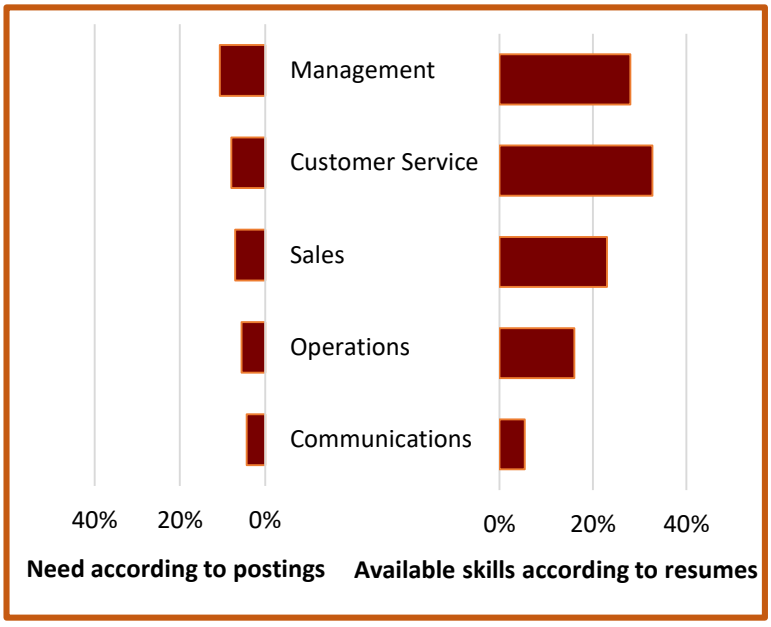
Programs	Institutions that offer these programs	Award level	Program Completions (2012-2016)
Hospitality Administration/Management *(Lodging Managers)*	VHCC, Southeast Culinary & Hospitality College	< 1 academic year, Associate's Degree	7 5
Business Administration, Management & Operations *(General & Operations Managers, First-Line Supervisors of Building & Grounds Cleaning & Maintenance Workers)*	NRCC, VHCC, WCC	< 1 academic year, 1 but < 2 academic years, Associate's Degree	66 57
Accounting & Related Services (*Bookkeeping, Accounting, & Auditing Clerks)*	NRCC, VHCC, WCC	< 1 academic year, 1 but < 2 academic years, Associate's Degree	32 27

Skills Gaps according to Jobs Posting and Resume Data

Top 5 Hard Skills



Top 5 Soft Skills

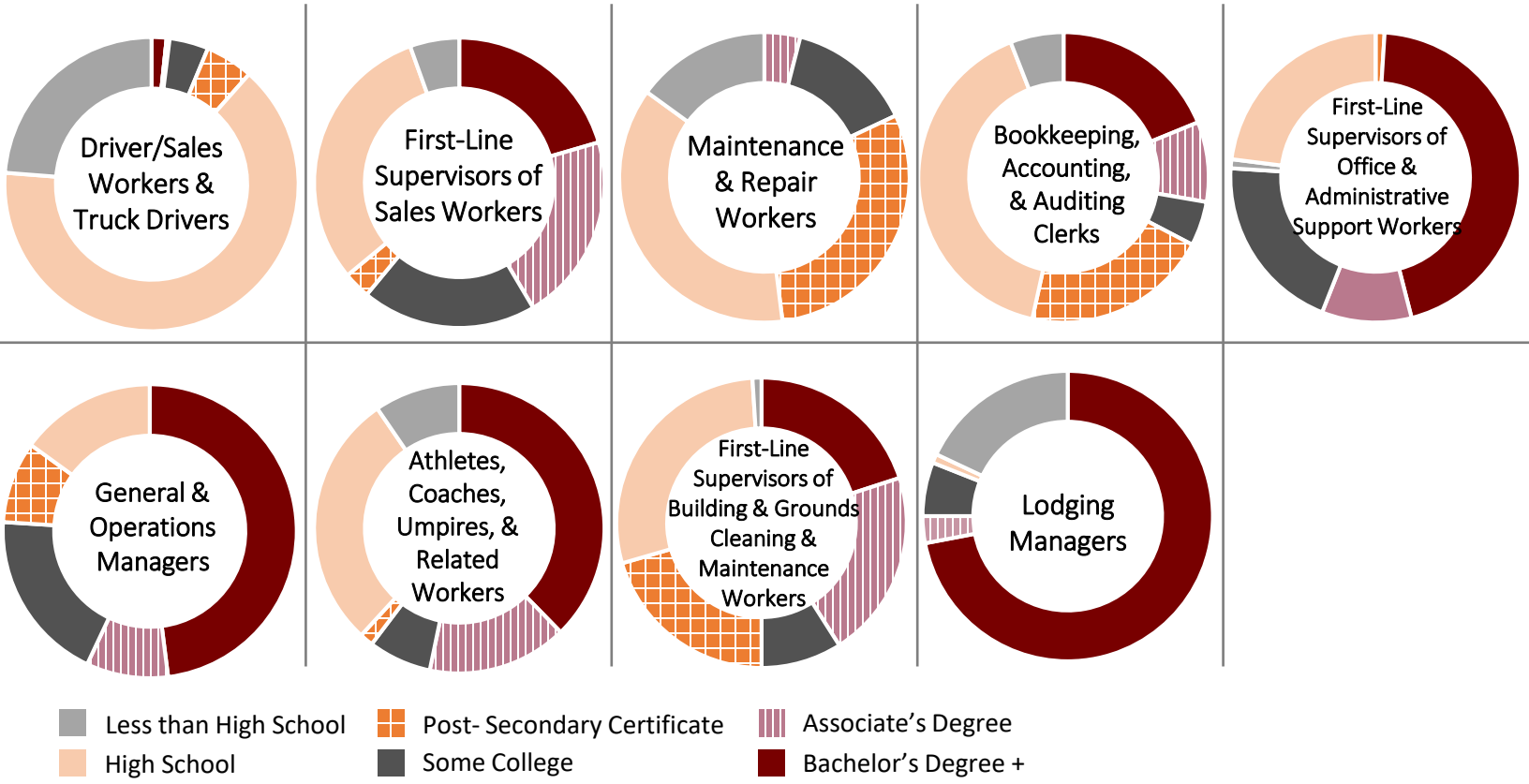


Source: EMSI Developer 2018.2 Class of Worker
**Programs excludes Bachelor's degrees and above.*

Competencies for In-Demand Occupations

Knowledge Competencies	Skills Competencies
• Customer and Personal Service • English Language • Administration and Management • Education and Training • Mathematics • Personnel and Human Resources • Sales and Marketing • Clerical • Computers and Electronics • Public Safety and Security	• Speaking • Critical Thinking • Monitoring • Active Listening • Reading Comprehension • Management of Personnel Resources • Social Perceptiveness • Coordination • Writing • Time Management

Educational Attainment for In-Demand Occupations



Sources: EMSI Developer 2018.2 Class of Worker
*O*NET 15.0 Database, June 2010. O*NET Educational Attainment is a breakdown of the education levels generally required for employment in an occupation. These levels are national averages and may not reflect educational attainment in the region.*

Skill gaps in incumbent employees

Invest in internal training and development

The most recent data (2016) from the Bureau of Labor Statistics shows the average worker stays at a job for 4.2 years. Because of this turnover, industries may be reluctant to increase investment in training. However, a Deloitte Consulting study shows that many company executives from different industries view internal training as the most promising method to mitigating talent shortages among skilled workers. To develop a culture of internal training, workforce partners may assist employers in the design, execution, and evaluation of internal training programs.

In the design phase, businesses must assess the training needs of workforce and identify skill gaps. Through technical and/or financial assistance, workforce can assist managers in defining their training objectives. Promoting readily available industry tools (e.g. The Manufacturing Institute's NAM-endorsed Manufacturing Skills Certification System) may help businesses to target their investment where training will have the most impact.

Many training models exist: internal vs. outsourced, classroom vs. workshop style, individual vs. group training, skills-based vs. management training, in-person vs. online training. Regardless of which model, the question for the workforce system is how to employ its knowledge, technical and financial resources to develop more to-the-point training that is tailored to companies and workers.

In the evaluation phase, workforce as an external agent can assist companies in reviewing and redesigning their training programs if they do not meet the intended objectives. Employees' feedback can inform this process. Over time, employers can gauge the effectiveness of their training by tracking improvements in employee performance, an area where workforce assistance can be of great value.

Internal Recruitment

Qualified candidates within an organization are often overlooked for positions. Companies can harness this untapped potential to close the skills gap by thinking about their employees as a cluster of competencies. Internal talent recruitment programs are most successful with strategic workforce planning to address talent gaps, a solid database of employee profiles, the necessary technology to manage the process, and collaboration among managers responsible for talent acquisition and retention.

Various web-based tools are available for industries to support their internal-mobility programs. One application from the San Francisco-based company Recruitsoft helps Whirlpool Corporation's employees retrieve a list of jobs that match their backgrounds so they may apply for jobs online. Whirlpool's managers who need to fill an opening can enter the job criteria and instantly receive names of internal and external candidates who fit the description.

Fidelity Investments in Boston has also created an internal site called MyCareer@Fidelity, which enables employees to map their career path at the company. Employees type in their current job and can see the next logical job and alternatives. Or they can type in the position they would like to hold in five years and identify the path to get there.

While application of these web-based tools seems promising in providing opportunities for internal recruiting, many companies in this region are small and cannot afford to develop such software. As a result, many lose upward mobile employees to other regions and jobs, missing out on promising middle managers. What ways can the workforce system help companies in developing a culture of internal mobility to better retain employees? Through the America's Promise grant, the workforce board and its partners are already developing a portal that could serve such functions in the future.

Sources:
http://www.workforce.com/2004/02/27/new-internal-hiring-systems-reduce-cost-and-boost-morale/
Bureau of Labor Statistics. (2016). Employment Tenure in 2016 (pp. 1–11).
Deloitte Consulting LLT, & Manufacturing Institute. (2015). The skills gap in U.S. manufacturing 2015 and beyond.

Skill gaps in prospective employees

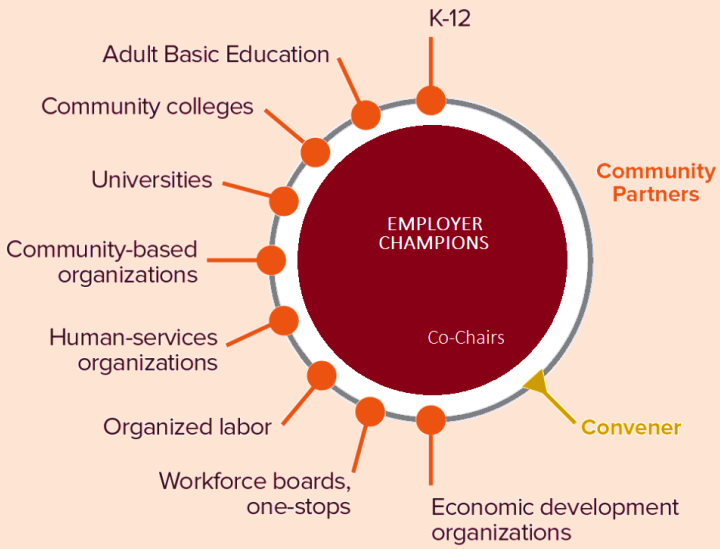
Sector-Based Workforce Development

Organizing the training of workers in the context of an industry is not a new concept. The basic idea is if policies and programs focus on a group of firms with similar products, processes, occupations and locations, it will be easier and more efficient to identify and address common needs. In this approach a workforce intermediary has a key role to bridge the needs of employers and workers, and broker resources and services to facilitate connections.

One of the oldest and most respected industry sector partnerships is the Wisconsin Regional Training Partnership (WRTP). The most important principle of the WRTP is the organizational and programmatic focus on joint labor-management leadership (i.e. collaboration between labor and management to improve working conditions and quality of services). The WRTP relies on strong relationships with employers and union leaders to secure better outcomes for workers inside firms.

This intermediary role of WRTP is widely understood, but in practice such efforts imply a level of dynamism that is often hard to develop in an intermediary. This Wisconsin program illustrates how workforce boards must see industry-workforce partnerships as a long-term process of relationship building. The mix of relevant intermediary services—their capacity to provide answers to firms while delivering on social priorities—implies flexibility and adaptation on the part of workforce systems and industry.

Funding and sustainability of partnerships in sector-based workforce development is another challenge. Colorado Department of Labor and Employment (CDLE) has overcome this issue by adopting several strategies.



1. In 2008, the Colorado Workforce Development Council (CWDC) created a Sector Strategy/steering Committee of industry leaders and agency heads from workforce, education, and economic development to guide policies and practical development of sector partnerships (the committee is still active).

2. In the same year, CWDC repurposed WIA discretionary funds to create start-up grants to support local sectoral partnerships.

3. Since 2008, Colorado's local workforce areas and their partners were convened for annual Sector Strategy Academies to learn from one another and from national sector practitioners.

4. An online portal allows local partnerships to share information with one another on an ongoing basis.

5. Since 2011, train-the-trainer curriculum and tools have been published annually to expand the concept and practice of sector partnerships to new areas and organizations.

Sources:
Conway, M., & Giloth, R. P. (Eds.). (2014). Connecting people to work: workforce intermediaries and sector strategies. New York: Aspen Institute
Turner, Shiloh, Kathy Merchant, John Kania, and Ellen Martin. 2012. Understanding the Value of Backbone
https://www.colorado.gov/pacific/cwdc

Skill gaps in prospective employees

Building the pipeline early on

Involvement with local schools and community colleges, as well as external training and certification programs helps industries to close the skills gap. Increasingly, community colleges are entering into partnerships with employers and industry associations to provide "sector-based" or "job-driven" training in health care, advanced manufacturing, IT and other fields to expand training.

Apprenticeships and work-based learning models appear to be expanding as well, making it easier for students to gain on-the-job training and work experience as well as a general postsecondary credentials. Workforce boards as apprenticeship partners can play a wide range of roles namely:

1. Intermediary organizations play a crucial role in the development of new and emerging apprenticeship programs and help to maintain developed apprenticeship systems. Intermediary organizations provide continuity in the function of systems, such as standards setting, quality assurance, training, advocacy, fund development, and data collection. Intermediary organizations act as backbone organizations, who a) guide vision and strategy; b) support aligned activities; c) establish shared measurement practices; d) build public will; e) advance policy; and f) mobilize funding.
2. Recruiters who refer apprentices to programs. Workforce boards are natural partners in this role, given their basic role in preparing individuals for and referring them to high-demand workforce opportunities. However, skill gaps and finding the right candidates to refer are among major challenges. Information brochures about apprenticeships for students and jobseekers, or a simple guide for the job seeker on the process and benefits of apprenticeships are among some approaches to addressing skill mismatch problems.

Photo from: http://www.gpb.org/blogs/georgia-at-work/2017/10/05/technical-college-system-of-georgia-extends-german-apprenticeship

3. Program sponsors who formally administer and operate the program, registering it with the appropriate federal state agency.

Sources:
Conway, Maureen and Robert Giloth. 2013. Connecting People to Work: Workforce Intermediaries and Sector Strategies. Aspen Institute, Washington DC.
Bergman, T., & Kobes, D. (2017). The State of Apprenticeship Among Workforce Board. Jobs For The Future, 16.

Skill gaps in prospective employees

Education-industry apprenticeships

According to Jaime Fall, Director of Upskill America, *"[t]he most successful education/industry partnerships I've seen are [those that] bring together a large set of partner companies that value the skills individuals learn during their apprenticeship and work to create a talent pipeline for the industry in the region, not just one employer. This doesn't work when individual companies just work to prepare enough talent to meet their own needs."*

An example of such collaborations is KY FAME (Kentucky Federation of Advanced Manufacturing Education), a consortium of regional manufacturers that work together to implement dual track, apprenticeship-style training through partnerships with local technical colleges to deliver the Advanced Manufacturing Technician Program.

The Kentucky Skills Network as a partnership of local and state workforce development organizations acts as the intermediary organization in KY FAME. It brought together a consortium of businesses and has partnered with the German American Chamber of Commerce (GACC) as part of its Skills Initiative. This partnership is an important element, in that the GACC provides the training, certification, and assessment materials, as well as coordination support, to help bring businesses to the table.

Workforce boards are looking for a range of support for their efforts to promote apprenticeships among employers; a number of solutions developed by board members include:

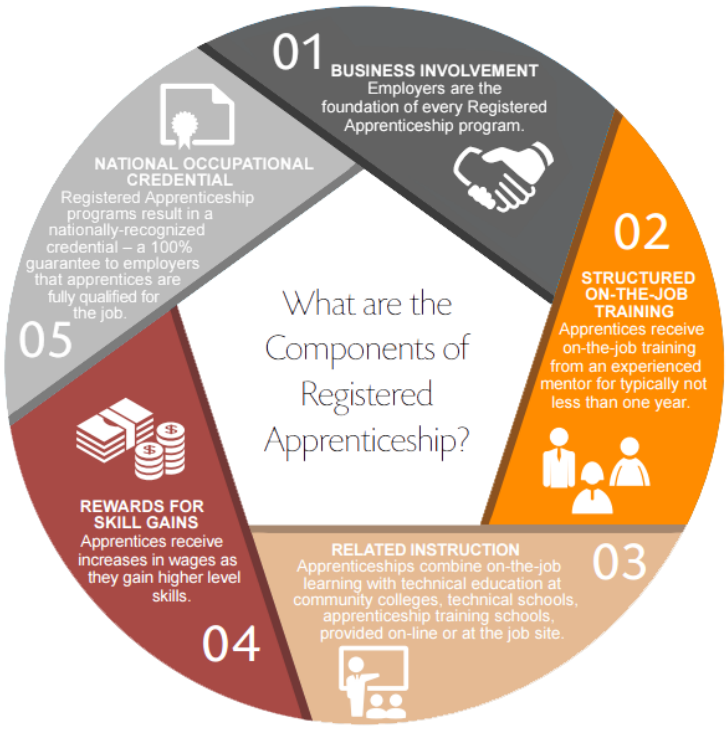
"testimonials from employers of all sizes to share when conducting...outreach"

"businesses who are already doing apprenticeships (especially in non-construction fields) to be champions and credible messengers for other businesses."

"data on the benefits and return on investment of apprenticeships for employers; and case studies and examples of the benefits provided to employers by apprenticeship programs."

Boards are also developing creative ways to integrate apprenticeships into existing activities. Examples are:

- Dedicating WIOA funds to apprenticeships by supporting co-enrollment with WIOA
- Using WIOA funds to support students that are in technical training at a community college
- Providing on-the-job training funds, while other funds are used for the classroom training provided by community colleges
- Developing a special apprenticeship supportive services policy that provides more funding than its "regular customer" supportive services
- Setting aside budget funds to support apprenticeships.



Sources:
Craig, R., & Bewick, T. (2018). Making Apprenticeships Work - Five Policy Recommendation. University Ventures.
A Quick-Start Toolkit: Building Registered Apprenticeship Programs, U.S. Department of Labor

Workforce Gap Summary

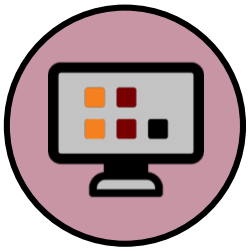
The population growth in the New River Mount Roger's Workforce Development Area is expected to remain stagnant (2012-2022), and workforce participation in the region has declined by 5% in the past five years (2012-2017). At the same time, unemployment and underemployment have declined. One way of addressing these trends would be to grow a diverse set of industries, relying less on manufacturing, government and retail for employment and growing the health care sector as well as professional, scientific, and technical services. The workforce development board has highlighted four industries to support through targeted workforce development. Below is a summary of a brief demand-supply analysis of occupations in these industries.

Manufacturing Industry

In-demand occupations consist of middle-skill jobs (maintenance and technicians), managerial positions, and knowledgeable sales representatives. Gaining a better knowledge of the number of professional certifications may give a better understanding of supply. Meanwhile, the workforce system may encourage youth to enter these careers, build their skill sets and employer connections through apprenticeships and internships with local companies, and offer opportunities for students and incumbent workers to gain more soft skills used in managerial positions.

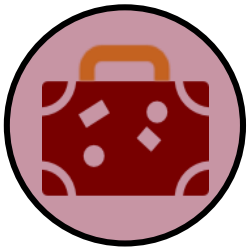
Healthcare and Social Services Industry

In-demand occupations include nurses, counselors and therapists (physical and psychological), and social workers. Future supply of these workers may be low and many existing workers are close to retirement. Retaining high school students and postsecondary graduates in the region will be necessary to grow and sustain the needed supply for these occupations. Incentives may be wage increases, better connecting students with employers and the region's activities so they are more invested in the area, improving and marketing the region's quality of life, or offering educational funding for in-demand programs that stipulate regional service upon graduation.



Professional, Scientific, & Technical Service Industry

In-demand occupations include administrative and accounting positions, general managers, computer specialists, and engineering technicians. Those requiring bachelor's degrees suffer because potential workers may leave the region for school or work. Those requiring some college to associate's degrees do not have enough students entering programs, perhaps due to lack of interest or certain computer and math skills. Similar to other industries, the needed skill sets for managers is also limited. A multipronged approach to this industry may be needed; for example, combining awareness campaigns, high school outreach and better skills preparation, and incentives to stay in the region such as better connecting students to job opportunities.



Tourism Industry

In-demand occupations at $15 or above for tourism include managerial and administrative positions, maintenance workers, and commercial drives. Management positions particular to the tourism industry require not only comprehensive leadership and critical thinking skills but also strong customer service abilities. Identifying workers with at least some of those skill sets and helping them to foster this mix of abilities may be vital to creating a strong tourism backbone. Meanwhile, professional certifications for maintenance and repair as well as commercial driver's license (CDL) drives could be encouraged.

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