

New River/Mount Rogers Skills Gap Analysis

PART A: OVERVIEW OF REGIONAL CONDITIONS

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This Report is Dedicated to the Memory of Thomas Michael "Mike" Maynard (1948-2013)

Mike was a visionary leader, an amazing critical thinker and problem solver. His leadership on the process development and implementation of this project was invaluable. So now the work begins, and as we move forward with projects and initiatives (using this study), we will not have Mike to guide us, but here are some of the questions he would ask:

1. What is the desired outcome?
2. How will we know if we have accomplished those outcomes?
3. Can we prove it?



Virginia Tech Office of Economic Development Graduate Assistant Acknowledgements

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Overview of Regional Conditions

Section 1: Background

Geography

Located in southwestern Virginia, the New River/Mount Rogers Workforce Investment Area (WIA) is comprised of thirteen political jurisdictions, including the counties of Bland, Carroll, Floyd, Giles, Grayson, Montgomery, Pulaski, Smyth, Washington, Wythe, and the independent cities of Bristol, Galax, and Radford. The terrain of the region is characterized by fertile river valleys and scenic mountain vistas. Two major interstates traverse the WIA including I-81 which spans Montgomery County to Bristol, and I-77 running north to south from Bland to Carroll counties. The region has no commercial airports within its immediate jurisdictional boundaries.

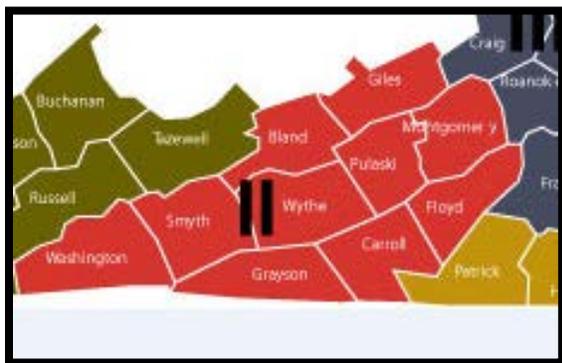


Figure 1: Geographic Location of the New River/Mount Rogers WIA

Population

Estimates provided by the U.S. Census Bureau indicate the current population of the WIA is 371,013.ⁱ Montgomery County is the largest jurisdiction, accounting for 94,179 individuals or one-quarter of the total region population.ⁱⁱ Washington County is the second most populous jurisdiction, having a total of 54,691.ⁱⁱⁱ Combined, Montgomery

and Washington counties include 148,870 individuals, or 4 out of 10 people counted in the WIA. In contrast, the region's four smallest jurisdictions (Bland, Bristol, Floyd, and Grayson) have a combined population of only 44,572. See Appendix: Overview for more information.^{iv}

Age and Gender^v

Across the WIA, the median population age is 38.4 years. Examination of age trends by jurisdiction indicates that the overall regional median age is skewed by the presence of large university student populations in Montgomery County and Radford city. If these two jurisdictions are removed from examination, the median population age increases to 43.7 years.

Of all jurisdictions, Galax has the highest median age (44.7 years) while Radford city has the youngest population (21.9 years- median age). Proportionally, Floyd County has the highest percentage of school age children (ages 5-17) at 16.4%, as compared to Radford city at 10.4%. Across the region, some jurisdictions have more significantly aged populations than others; for example, 40.4% of the population of Galax is age 65 and over, as compared to only 14.3% of the population of Montgomery County and 12.4% of Radford city.

By gender, the regional population is slightly more female (50.2%). Bland has the region's most significant percentage of males, a factor largely influenced by the presence of a large state correctional facility, 56.5%. Galax reports the largest proportion for females, 54.1%.

Household Income and Poverty^{vi}

Across the New River/ Mount Rogers Region, a total of 66,351 households (44.6%) have income and benefit levels less than \$35,000 annually. By county, Giles (37.2%) and Bland (39.2%) have the lowest proportion of their residents living in households with income and benefit levels below \$35,000, while Smyth, Carroll, Radford, Grayson, Bristol, and Galax each report that over half of all households in their respective jurisdictions fall into this household income grouping. Galax stands out with 6 out of 10 households with income and benefit levels below \$35,000 annually.

In contrast, throughout the WIA, 11.5% of households (17,089) report household incomes and benefits in excess of \$100,000 annually. A strong majority of this group falls into the specific income bracket of \$100,000-\$149,999 (11,197). Montgomery County has the highest percentage of households in this category, reporting a total of 17.2%. Washington, Giles, Pulaski, and Floyd counties also have at least 10% of households with annual income and benefit levels in excess of \$100,000.

Median (or midpoint) household income levels vary significantly across the New River/Mount Rogers WIA, ranging from \$24,059 to \$45,231. When compared with mean (average) household income levels, they provide additional insight into local income distribution and reflect that some jurisdictions have considerable differences within their populations. This is particularly true for Montgomery, Grayson, and Galax which each reported differences in excess of \$15,000 between median and mean reported household incomes.

Figure 2: Household Income- New River/Mount Rogers WIA, by Jurisdiction^{vii}

	Total: Households (#)	% of Households with Incomes Below \$35,000	% of Households with Incomes At Least \$100,000	Median Household Income	Mean Household Income	Per Capita Income
Bland	2,464	39.2%	7.7%	\$42,658	\$49,966	\$18,712
Carroll	12,622	51.5%	7.3%	\$33,600	\$44,006	\$18,888
Floyd	6,076	37.7%	11.2%	\$44,038	\$53,700	\$21,855
Giles	7,126	37.2%	12.5%	\$45,231	\$56,902	\$23,766
Grayson	6,807	54.3%	6.8%	\$31,931	\$47,694	\$21,639
Montgomery	34,739	40.7%	17.2%	\$44,166	\$61,293	\$23,292
Pulaski	14,874	41.2%	11.1%	\$43,072	\$51,669	\$22,231
Smyth	12,567	50.6%	8.0%	\$34,394	\$47,222	\$20,169
Washington	22,913	40.5%	13.3%	\$42,844	\$59,033	\$24,768
Wythe	11,610	43.7%	9.7%	\$40,564	\$55,498	\$24,083
Bristol	7,757	54.5%	5.4%	\$30,636	\$42,173	\$18,999
Galax	3,354	62.1%	6.6%	\$24,059	\$40,710	\$20,039
Radford	5,624	53.7%	9.0%	\$29,757	\$42,310	\$15,748
Virginia (Statewide)	3.0 million	27.1%	29.7%	\$63,636	\$86,343	\$33,326
United States	115.2 million	33.7%	22.2%	\$53,046	\$73,034	\$28,051

Further examination of regional poverty indicators show multiple trends at play. To begin, poverty rates in Radford, Galax, and Bristol cities, and Montgomery and Smyth Counties are notably higher than other jurisdictions. When examined along with household income data, poverty rates in Radford city and

Montgomery County may be skewed due to the presence of large student populations residing in these jurisdictions. High poverty rates in the remaining jurisdictions may be influenced by long-term systemic job loss which occurred in these two jurisdictions during the previous decade.

Concerning poverty, it is also important to note that over one-half of persons under age 18 in Galax fall below the federal poverty threshold. For Bristol city and Grayson and Smyth counties, one-third of all persons under age 18 also fall below the poverty line. Comparable national poverty rate are 14.9% for all people and 20.8% for persons under age 18.

Figure 3: Percentage of All People Whose Income in the Past 12 Months is Below the Poverty Level^{viii}

	Poverty Rate (All People)	Under 18 Years of Age	18-64 Years of Age	65+ Years of Age
Bland	14.2%	17.9%	12.5%	15.9%
Carroll	18.9%	27.3%	17.8%	13.4%
Floyd	12.8%	15.3%	12.7%	9.8%
Giles	14.1%	16.3%	14.7%	9.4%
Grayson	18.8%	32.6%	16.3%	13.7%
Montgomery	24.4%	17.6%	28.9%	5.2%
Pulaski	14.7%	20.4%	14.0%	10.8%
Smyth	20.2%	32.2%	18.5%	11.7%
Washington	12.4%	15.3%	12.4%	9.3%
Wythe	14.0%	19.2%	12.9%	11.6%
Bristol	22.4%	33.8%	21.4%	13.3%
Galax	28.3%	51.7%	26.9%	11.2%
Radford	35.2%	17.8%	42.3%	13.5%
Virginia (Statewide)	11.1%	14.6%	10.4%	7.9%
United States	14.9%	20.8%	13.7%	9.4%

Labor Force Participation and Employment^{ix}

Census estimates indicate that across the region, 57.2% of individuals over the age of 16 participate in the civilian labor force. Of those included in the civilian labor force, 92.2% (163,269) are employed. The estimated average unemployment rate for the WIA is 7.8% (13,754).

By jurisdiction, Floyd (62.9%) and Wythe (61.0%) counties had the region’s highest proportion of labor force participation. Unemployment averages for Montgomery, Washington, Grayson, and Giles counties were the lowest across the WIA, ranging between 6.2%-6.8%. In contrast, several jurisdictions did record notably elevated unemployment rates; Wythe, Carroll, Pulaski, and Radford city each exceed 9%. Bristol city recorded the region’s highest unemployment estimate of 12.8%.

Labor force participation rates for the working-age population (age 25-64) is slightly more difficult to obtain. OED estimates that across the WIB, 73.2% of this target population are a part of the civilian labor force (135,990), while slightly over one-quarter (26.7%) are not in the labor force or armed forces.^x

Regional Interconnectivity and Workforce Commuting Patterns^{xi}

On average, commuting workers of the New River/Mount Roger WIA have a travel time of 21.9 minutes. By jurisdiction, Floyd commuters have the region’s most lengthy travel times of 33.6 minutes, while workers in Bristol city and Montgomery County record the shortest (17.4-17.9 minutes). See Overview-Appendix for more information about commuting travel times.

Commuting data provided by the U.S. Census Bureau’s OnTheMap program offers additional insights into workforce commuting patterns. A strong majority of people who work in the New River/Mount Rogers WIA also live in the region (70.9%). Examination of net job flows indicates a rather balanced distribution for workforce inflow/outflow patterns for those coming to or leaving the region for work (net increase 1,725 jobs). Notably 31% of out-commuters fall into an earnings category of more than \$3,333/month.

Figure 4: Employment Inflow/Outflow for the New River/Mount Rogers WIA (2011 Employment Estimates)^{xii}

	Count	Share
Total Employment in the New River/Mount Rogers WIA (Primary Jobs)	133,212	100.0%
<i>Workers Who Are Employed and Live in the New River/Mount Rogers WIA (Primary Jobs)</i>	94,502	70.9%
<i>Workers Who are Employed in the New River/Mount Rogers WIA but Live Outside of WIA (Primary Jobs)</i>	38,710	29.1%
People Who Live in the New River/Mount Rogers WIA but are Employed Outside of the WIA	36,985	28.1%
Total Net Job Inflow (+) or Outflow (-) for the New River/ Mount Rogers WIA	+1,725	--

Figure 5: Worker Characteristics, Based on Live-Work Status (Primary Jobs)^{xiii}

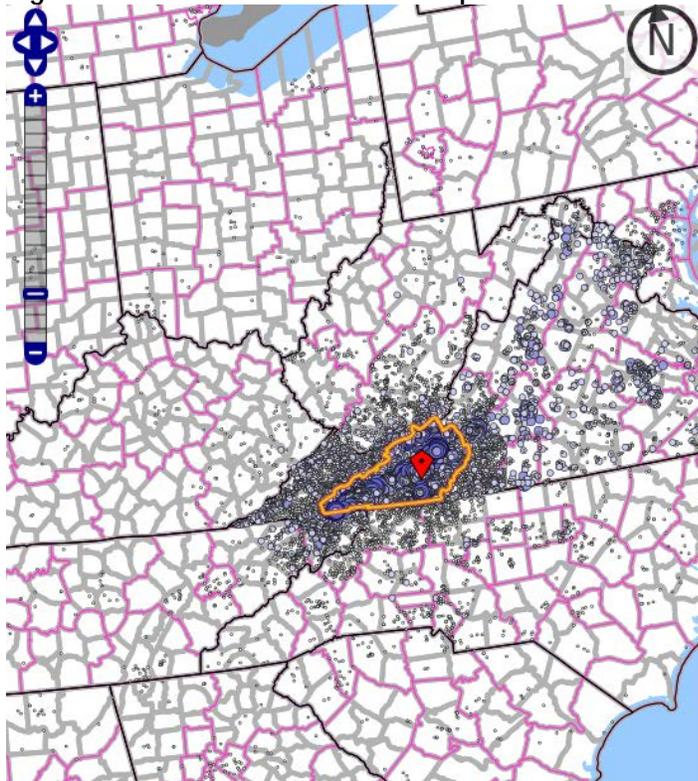
	Workers Who Live and Work in WIA 2 (Share)	Workers Who Live in WIA 2 but Work Elsewhere (Out-Commuters)	Workers Who Do Not Live in WIA 2 but Work in WIA 2 (In-Commuters)
Worker Age			
Workers Age 29 and Younger	20.0%	25.5%	28.8%
Workers Age 30 to 54	56.7%	54.6%	52.3%
Workers Age 55+	23.3%	19.9%	18.9%
Worker Earnings Per Month			
Earning \$1,250 per month or less	22.6%	25.4%	29.0%
Earning \$1,251 to \$3,333 per month	47.8%	43.6%	45.0%
Earning More than \$3,333 per month	29.7%	31.0%	26.0%
Worker Employment by Industry Class			
Goods Producing Industries	25.1%	18.5%	20.2%
Trade, Transportation, and Utilities Industries	15.2%	27.8%	28.1%
All Other Services Industries	59.8%	53.8%	51.7%

By county, most people who work in the region live in Montgomery (16.9%) and Washington (10.0%) counties. For those workers who in-commute to the region, Sullivan County is the primary jurisdiction of origin. In total 4.4% (5,807) jobs are held by individuals living in Sullivan County. Roanoke County is the region's second largest jurisdiction for in-commuters, representing 1.5% (2,047 jobs). Figure 7 provides a visualization of where people who work in the New River/Mount Rogers WIA live.

Figure 6: Top WIAs of Origin for In-Commuters Who Are Employed in the New River/Mount Rogers WIA (Primary Jobs)^{xiv}

	Count (#)	Share of Jobs in WIA 2 (%)
Southwest Virginia LWIA I	7,281	5.5%
01 LWIA (Northeast TN)	6,884	5.2%
Western Virginia LWIA III	5,726	4.3%
01 WIA Region 1 (Southern WV)	2,936	2.2%
Western Piedmont LWIA XVII	2,302	1.7%

Figure 7: Place of Residence for People Who Work in the New River/Mount Rogers WIA^{xv}

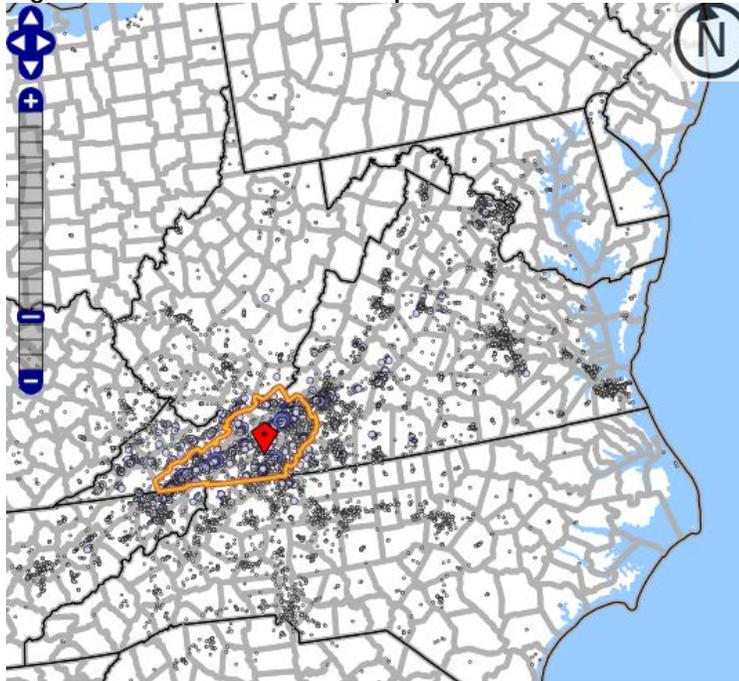


For out-commuters from the WIA, the Roanoke metro-area is a top destination. Combined, Roanoke city (3.5%), Roanoke County (2.0%), and Salem city (1.7%) employ 9,437 WIA residents (7.2% of the region's employed labor force). Sullivan County is also an important out-commuting destination for WIA residents, absorbing 3,049 workers (2.3% of the WIA's employed labor force).

Figure 8: Top Destinations for Out-Commuters Who Live in the New River/Mount Rogers WIA (Primary Jobs)^{xvi}

	Count (#)	Share of Jobs in WIA 2 (%)
Western Virginia LWIA III	10,782	8.2%
Southwest Virginia LWIA I	5,787	4.4%
01 LWIA (Northeast TN)	4,201	3.2%
West Piedmont LWIA XVII	2,059	1.6%
Northwest Piedmont WDB (North Carolina Border Region)	1,809	1.4%

Figure 9: Place of Work for People Who Live in the New River/Mount Rogers WIA^{xvii}



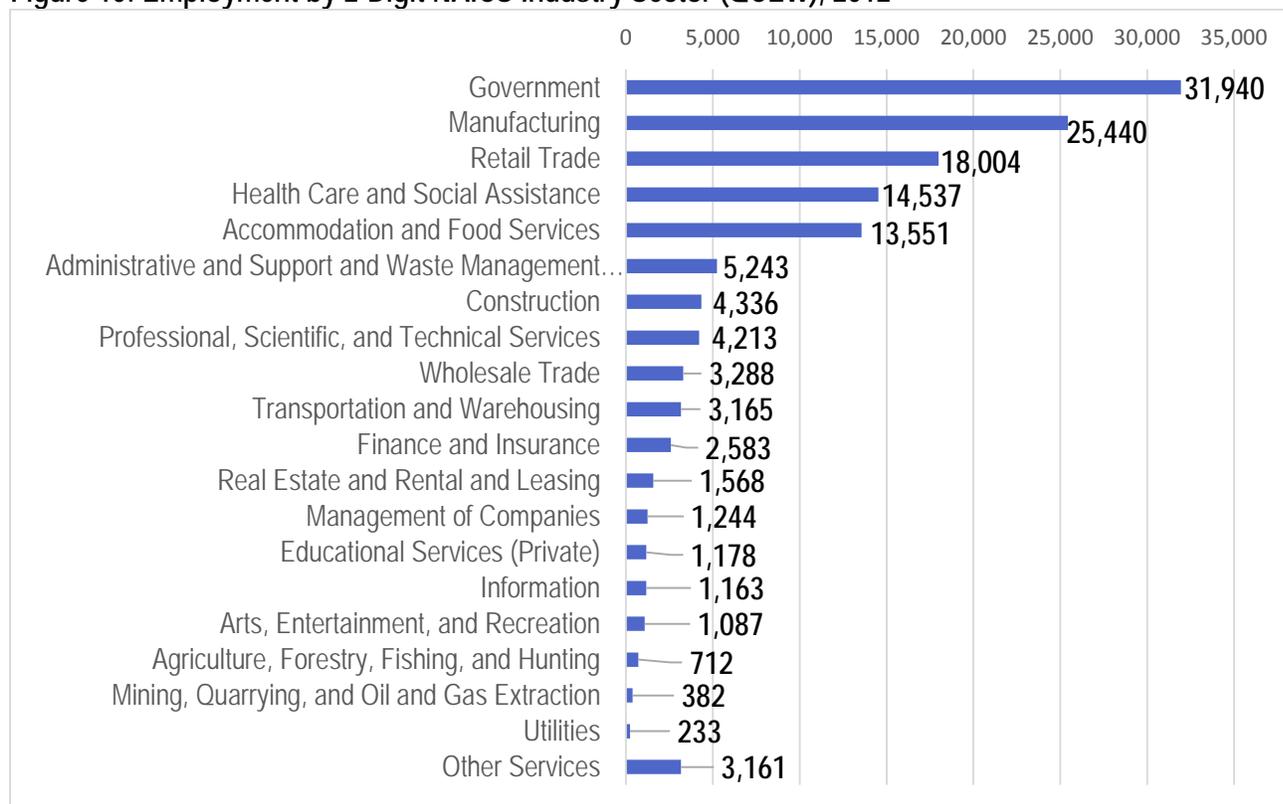
Regional Industry and Occupation Employment- Overview^{xviii}

Examination of 2012 employment data by industry sector shows that Government is the leading regional employer, representing 23.3% of all jobs. Manufacturing is the region’s largest private employer and overall second largest industry, accounting for 25,440 jobs or 18.6% of all regional jobs. Retail Trade and Health Care and Social Assistance are also large employers, representing 13.1% and 10.6% of employment respectfully.

Since 2002, Government and Health Care and Social Assistance have the highest net job growth, with each sector adding over 2,000 jobs. Accommodation and Food Services also grew notably, adding over 1,200 jobs. Despite this growth, the New River/Mount Rogers WIA was especially hard-hit by declines in traditional wood products and textile manufacturing industries. As a result, the region lost over one-quarter of its 2002 manufacturing employment by 2012 (-8,700 jobs).

Overall, total regional employment across all industries declined by 3,713 jobs (2.7%). The national economic recession beginning in 2008 continues to impact employment dynamics across the region. Industry sector analysis included in subsequent sections of this study highlight specific subsector and geographic employment dynamics.

Figure 10: Employment by 2-Digit NAICS Industry Sector (QCEW), 2012^{xix}



Office and Administrative Support jobs form the region’s largest occupation group, employing 20,184 workers (14.7% of all 137,030 regional jobs). Production occupations are the second largest category of jobs, totaling 16,404 or 12.0% of workers. Sales and Related occupations (14,732 jobs, 10.8%) and Food Preparation and Serving Related occupations (13,677 jobs, 10.0%) are also top forms of regional employment.

Management and STEM-based occupations for engineering, computers, and life sciences record some of the region’s highest levels for median hourly earnings. Median hourly earnings in these fields of work averaged between \$31 and \$39 for the region. Service-sector employment in food preparation and personal care were amongst the region’s lowest earnings, falling below \$10/hour.

Drilling further down into the region’s top occupation categories, Combined Food Preparation and Serving Workers (including Fast Food) was the single largest job title for employment across the New River/Mount Rogers WIA. In total, this job title accounts for 5,262 jobs (3.8% of all regional jobs). As highlighted in Figure K, the region’s top ten job titles for employment reflect a combined total of 32,834 jobs (24.0% of all regional jobs). An important takeaway to note from Figure 11 is the median hourly earnings for the region’s top job titles; in short, 22,907 of the top ten jobs depicted have median earnings below \$11.50/hour.

Figure 11: Top Ten Job Titles for Employment in the New River/ Mount Rogers WIA (2012), SOC 5-Digit^{xx}

SOC	Description	2002 Jobs (#)	2012 Jobs (#)	Change 2002-2012 (#)	% of All Jobs	Median Hourly Earnings
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	4,589	5,262	673	3.8%	\$8.55
41-2011	Cashiers	5,101	5,102	1	3.7%	\$10.04
41-2031	Retail Salespersons	4,376	4,456	80	3.3%	\$11.01
25-1099	Postsecondary Teachers	3,055	3,585	530	2.6%	\$36.19
43-9061	Office Clerks, General	3,227	3,224	(-3)	2.4%	\$11.36
35-3031	Waiters and Waitresses	2,387	2,569	182	1.9%	\$9.46
43-5081	Stock Clerks and Order Fillers	2,433	2,294	(-139)	1.7%	\$10.24
43-4051	Customer Service Representatives	1,995	2,218	223	1.6%	\$18.98
25-3099	Teachers and Instructors, All Other	1,670	2,086	416	1.5%	\$29.73
29-1141	Registered Nurses	1,916	2,038	122	1.5%	\$25.00
Total for Top 10 Regional Job Titles		30,749	32,834	2,085	24.0%	--

Figure 12: Industry Sectors Employing Region’s Top Ten Occupations (2012)^{xxi}

Top 10 largest occupations, by number of jobs	Top Regional Industry Subsectors for Occupation Employment		
	Top 3 industry sectors (NAICS 3-Digit) employing these occupations	# of Jobs (2012)	% of Occupation Employed in Sector
Combined Food Preparation and Serving Workers, Including Fast Food	Food Services and Drinking Places	4,364	82.9%
	Local Government	284	5.4%
	Food and Beverage Stores	251	4.8%
Cashiers	Gasoline Stations	1,460	27.8%
	Food and Beverage Stores	1,221	24.4%
	General Merchandise Stores	972	19.9%
Retail Salespersons	General Merchandise Stores	1,170	27.2%
	Building Material and Garden Equipment and Supplies Dealers	630	13.6%
	Clothing and Clothing Accessories Stores	595	13.9%
Postsecondary Teachers	State Government	3,380	93.7%
	Educational Services (Private)	198	6.1%
	Hospitals (Private)	<10	.1%
Office Clerks, General	State Government	635	19.8%
	Local Government	413	12.7%
	Ambulatory Health Care Services	193	6.2%
Waiters and Waitresses	Food Services and Drinking Places	2,322	90.7%
	Accommodation	100	3.9%
	Amusement, Gambling, and Recreation Industries	53	1.7%

Top 10 largest occupations, by number of jobsContinued	Top Regional Industry Subsectors for Occupation Employment		
	Top 3 industry sectors (NAICS 3-Digit) employing these occupations	# of Jobs (2012)	% of Occupation Employed in Sector
Stock Clerks and Order Fillers	General Merchandise Stores	765	34.2%
	Food and Beverage Stores	570	24.9%
	Warehousing and Storage	92	4.0%
Customer Service Representatives	Administrative and Support Services	1,009	44.7%
	Credit Intermediation and Related Activities	103	4.4%
	Insurance Carriers and Related Activities	78	3.6%
Teachers and Instructors, All Other	State Government	1,133	55.1%
	Local Government	643	30.6%
	Educational Services (Private)	162	7.1%
Registered Nurses	Hospitals (Private)	1,143	55.8%
	Ambulatory Health Care Services	298	15.5%
	State Government	235	11.3%

Section 2: Understanding Baseline Workforce Knowledge and Skills

Identifying Regional Baseline Knowledge Competency Areas and Levels

As noted above, many top occupations are concentrated in a few service providing industry sectors. Other occupations are important to multiple industries, although they may have different skills needs depending on the industry's business model and service delivery processes. A deeper understanding of the specific knowledge and skills necessary for regional occupations by industry is important for employers, workers, and workforce development providers alike, to identify opportunities to apply the skills workers learn in one job to new jobs in different industry sectors or related occupations. Identifying knowledge levels is a two part task which first requires identification of the regional knowledge baseline across all manufacturing industries, followed by identification of occupation-specific knowledge levels (see Report Parts B-C for additional information).

Constructing a scorecard outlining knowledge competency levels of workers employed across all regional industries began with creation of a regional occupation listing which included the top job titles (SOC 5-digit) from each major occupation grouping (SOC 2-digit) which were then weighted by the number of employees.

To further screen the data:

- Occupation groups which employed more than 5,000 individuals would be disaggregated to SOC 5-digit job titles which employed over 500 people;
- Occupation groups which employed 2,000 to 4,999 individuals would be disaggregated to SOC 5-digit job titles which employed over 200 people;
- Occupation groups which employed 1,000 to 1,999 individuals would be disaggregated to SOC 5-digit job titles which employed over 100 people;
- Occupation groups which employed less than 1,000 individuals would be disaggregated to SOC 5-digit job titles which employed over 50 people.

Through this process, a total of 114 unique job titles were identified. These job titles reflect 101,708 jobs or 70.5% of all regional employment.

From this point, data for the regional occupation listings were aggregated and analyzed using a weighted average to account for differentiation created by the employment size of each job title. All data for each job title was obtained from the U.S. Department of Labor's ONET database. This weighted average provides a baseline most common to the regional workforce for each data descriptor, and serves as a benchmark against which to assess the level of individual job titles. Weighted averages for each knowledge and skill data descriptor also provide a base for comparisons between the New River/ Mount Rogers WIA and neighboring workforce regions or specific industry subsectors.

Key findings of the workforce baseline knowledge competency identification exercise may be referenced as the Overview: Appendix. A detailed summary of competency definitions utilized in the above outlined process may also be referenced in the Overview: Appendix.

Examination on baseline competency scores only provides a starting point for efforts to identify workforce knowledge and skills requirements. Interviews with company officials, plant and facility tours, and presentations to industry associations and community stakeholder groups provided additional insight as to how these competencies are translated to employer hiring needs across the region. Information highlights gleaned from that process follow below.

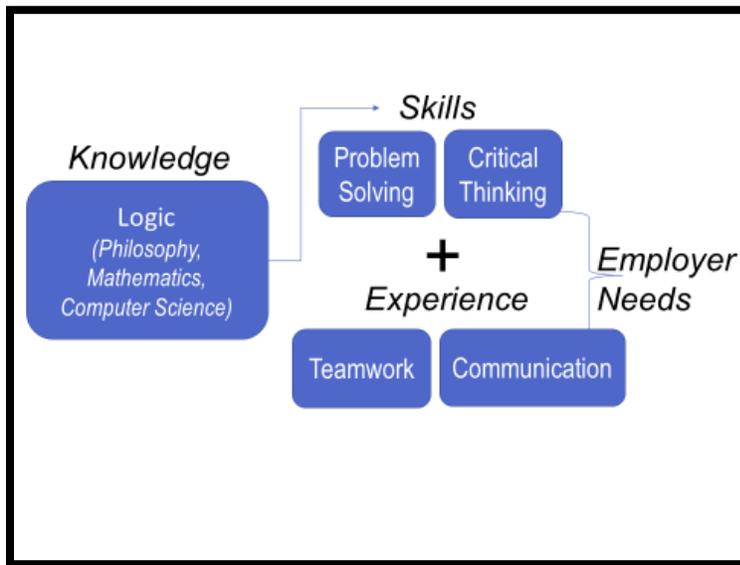
The following provides a summary of key findings of OED's data and employer outreach findings for baseline workforce knowledge and skills competencies:

Key Findings: Baseline Workforce Knowledge and Skills Competencies

- Customer and Personal Service is a knowledge competency strongly present across most forms of employment in the New River/Mount Rogers region. This may be a rather obvious finding for most service-oriented jobs such as cashiers, waitress, and retail salespersons. However, when diving deeper into industry-specific requirements, customer and personal service is becoming increasingly important to all levels of employment in other types of businesses. For example, in the Health Care and Social Assistance sector, customer service may impact business operations for large network providers as many types of funding models are now correlated to patient experience surveys.
- Mathematical knowledge and skill competencies were also in strong demand for almost all forms of regional employment. One of the most frequently cited mathematical competency needs includes the ability to rationalize how a sample size is proportionate to a larger unit. This ability is strongly correlated to basic understanding of units of measurement, fractions, decimals, percentages, and proportions. Logic is an underlying principal behind most forms of regional mathematical competency needs.
- Demonstration and Instruction (i.e.: Education and Training) also emerged as a knowledge and skill competency valued by local employers. In particular, the ability of a worker to clearly explain how to perform job tasks, and then instruct another to replicate the given tasks was very important to multiple industry sectors and occupational levels. Additionally, worker ability to clearly articulate the importance of task performance to addressing needs of larger business process or systems requirements was also frequently noted by regional employers.
- When speaking to employers, the following words were frequently noted as 'soft skills,' or basic worker traits often viewed as the basic demonstrations of employability: problem solving, and critical thinking.

- In today's competitive job market, most forms of employment offering livable wages strongly desired workers who have prior work experience. Moreover, many employers also desired workers who have prior experience in a similar form of industry or occupation. Related to this point, teamwork and communication skills, as acquired through prior work experience, were amongst the most competitive factors influencing hiring decisions.

Figure 13: OED Summary of Baseline Workforce Knowledge, Skill, and Experience to Respond to Regional Employer Needs



Section 3: Regional Educational Attainment Characteristics and Credential Trends

Educational Attainment^{xxii}

Understanding educational attainment levels for the region's working age population (ages 25-64 years) provides insights into the aptitude and availability of the region's degree-holding or credentialed workforce. In total, an estimated 55.1% (102,319) of the region's working age population have some form of postsecondary educational training. Of this total, 44,487 individuals (23.9%) have educational attainment levels to at least a bachelor's degree, while an additional 18,439 (9.9%) have an associate's degree. As depicted in Figure X, educational attainment trends do exhibit some variance across specific age subgroups; overall younger workers have higher proportions of college and above degree attainment.

Virginia has some of the nation's highest levels of educational attainment. Proximity to the national capital region and presence of large military, R&D, university, and governmental facilities all contribute to this outcome. Outside of the state's urban centers, educational attainment levels are often much lower. In the New River/Mount Rogers WIA, only 23.9% of adults age 25-64 have educational attainment levels to at least a bachelor's degree, as compared to the state rate of 30.2%. Nationally, an estimated 60.9% of the working-age population has some form of postsecondary educational training while 30.2% have educational attainment to at least the baccalaureate level.

Figure 14: Educational Attainment for the Working-Age Adult Population (Ages 25-64)^{xxiii}

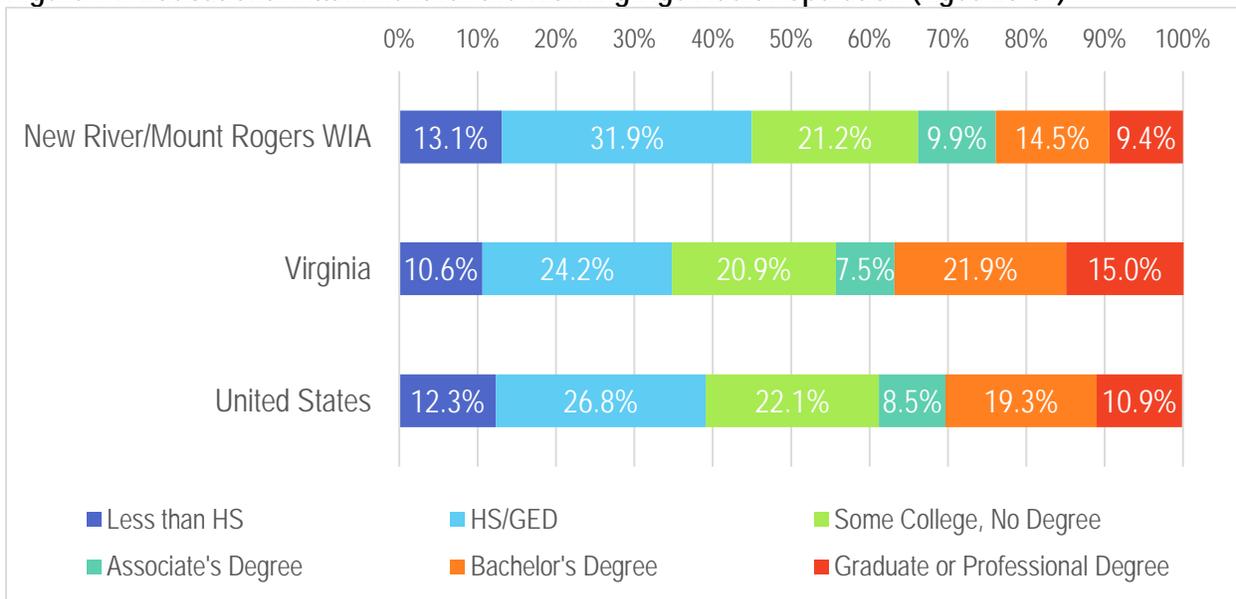
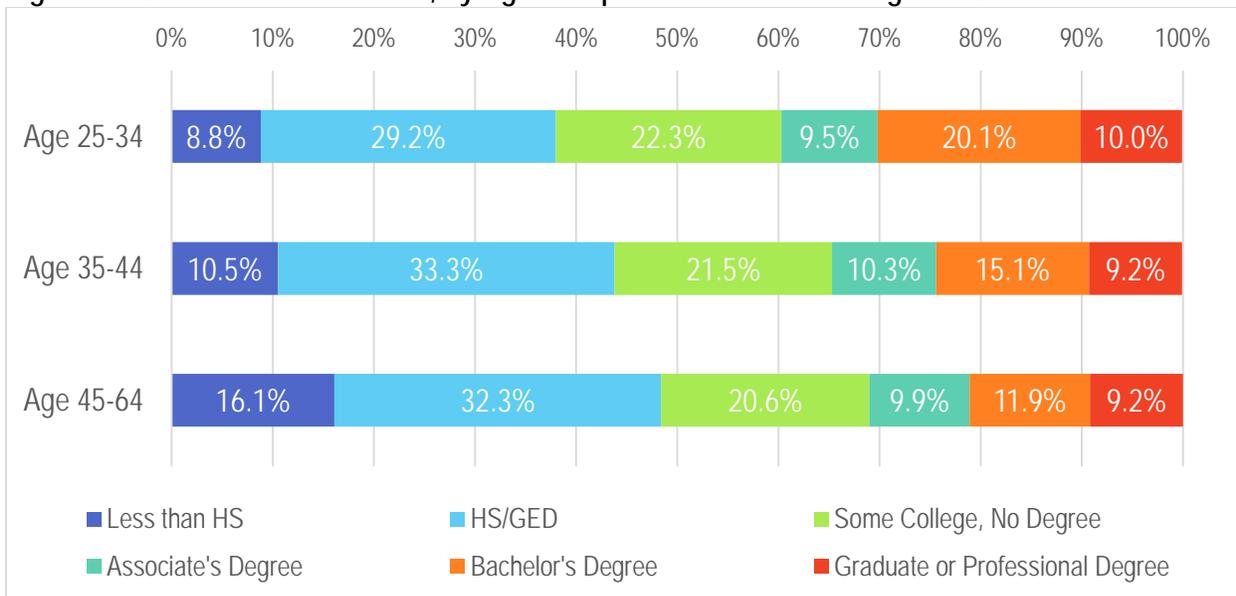


Figure 15: Educational Attainment, by Age Group: New River/Mount Rogers WIA^{xxiv}



Educational Attainment and Employment^{xxv}

For the working age population (ages 25-64), individuals with a high school diploma or less have the highest proportions of workers not participating in the labor force. Unemployment rates are also the highest amongst those who lack some form of postsecondary education. In total, the region has an estimated 82,138 working-age adults with some postsecondary education, as part of the civilian labor force.

Figure 16: Educational Attainment for the Working-Age Population (25-64 years) and Employment: New River/Mount Rogers WIA^{xxvi}

	Population, All Levels of Educational Attainment		Less than HS		HS/GED		Some College or Associate's Degree		Bachelor's Degree or Higher	
	Count	%	Count	%	Count	%	Count	%	Count	%
Total Population Age 25-64	185,823	--	24,305	13.1%	59,199	31.9%	57,832	31.1%	44,487	23.9%
Civilian Labor Force	135,990	73.2%	11,835	48.7%	42,017	71.0%	44,842	77.5%	37,296	83.8%
Not in Labor Force	49,530	26.7%	12,470	51.3%	17,157	29.0%	12,848	22.2%	7,055	15.9%
Unemployment Rate (Civilian Labor Force)	8,515	6.3%	1,741	14.7%	3,523	8.4%	2,367	5.3%	884	2.4%

Program Completions and Credentialing Trends

High School Diplomas^{xxvii}

The Advanced Studies Diploma is the form of high school diploma most frequently awarded to completers across the New River/Mount Rogers WIA. To graduate with an Advanced Studies Diploma, must earn at least 26 standard units of credit, and at least nine verified units of credit. By comparison, students earning a Standard Diploma must earn at least 22 units of credit, and at least six verified credits. Verified credits are earned by passing end-of-course SOL tests or other Virginia Board of Education-approved assessments.

Students entering ninth grade during academic years 2013-2014 will also face additional requirements for Standard and Advanced Studies Diploma attainment. Standard Diploma seekers must now earn a board-approved career and technical education credential and successfully complete one virtual course. Advanced Studies Diploma seekers must also successfully complete one virtual course.

Figure 17: High School Diploma Award Counts, by Academic Year (AY) for Public School Systems in the New River/Mount Rogers WIA^{xxviii}

	AY: 2010-2011	AY:2011-2012	AY:2012-2013
Advanced Diploma	1,441	1,509	1,504
Standard Diploma	1,384	1,330	1,323
GED/ISAEP	65*	44*	27*
Modified Standard Diploma	36*	23*	30*
Special Diploma	93*	93*	89*

**Some information was suppressed due to confidentiality; as such, the total regional number may be slightly higher than the total presented above.*

Career and Technical Education (CTE)-Provided Through County-Level School Divisions

Career and Technical Education (CTE) places a strong emphasis on alignment of secondary and postsecondary education and training opportunities to prepare students for future employment. In the Commonwealth of Virginia, a CTE program completer is a student who has fulfilled requirements for high school graduation and completed a CTE concentration (sequence) of coursework.^{xxix} Across the New River/ Mount Rogers WIA, CTE completion has steadily increased since AY 2010-2011. Credential

attainment in this region has also increased markedly in recent years, with most of this growth being driven by workplace readiness assessments. Specific information pertaining to the Virginia Career Readiness Certificate (CRC) may be further obtained in Part B: Manufacturing.

Figure 18: Career and Technical Education Trends for the New River/Mount Rogers WIA (AY: 2010-2011 to AY: 2012-2013)^{xxx}

	AY: 2010-2011	AY: 2011-2012	AY: 2012-2013
National Occupational Competency Testing Institute (NOCTI) Assessments	361	427	347
State Licensures	73	50	57
Industry Certification	1,131	1,351	1,998
Workplace Readiness	256	861	987
Total Credentials Earned	1,821	2,689	3,389
Students Earning One Or More Credentials	1,467	2,246	2,753
CTE Completers	1,678	1,702	1,769

Postsecondary Educational Training- Public 2-Year Institutions (Virginia Community Colleges)

True to trends for rural regions of the Commonwealth, the Virginia Community College System (VCCS) is a primary provider of 2-year or less postsecondary education and skills training programs. 12-month headcounts for 2011-2012 show that 16,943 individuals were enrolled in courses at the region's three VCCS institutions. 2011-2012 enrollment totals depict notable growth in recent years, increasing by 1,112 students since 2008-2009. At the height of the national recession in 2009-2010, regional community college enrollment spiked to almost 17,500 students. Wytheville Community College experienced the region's largest enrollment growth between years 2008-2009 and 2011-2012, up 658 students.

Figure 19: 12-Month Unduplicated Headcount Enrollment for Community Colleges in the New River/Mount Rogers WIA (Reflects All Programs)^{xxxii}

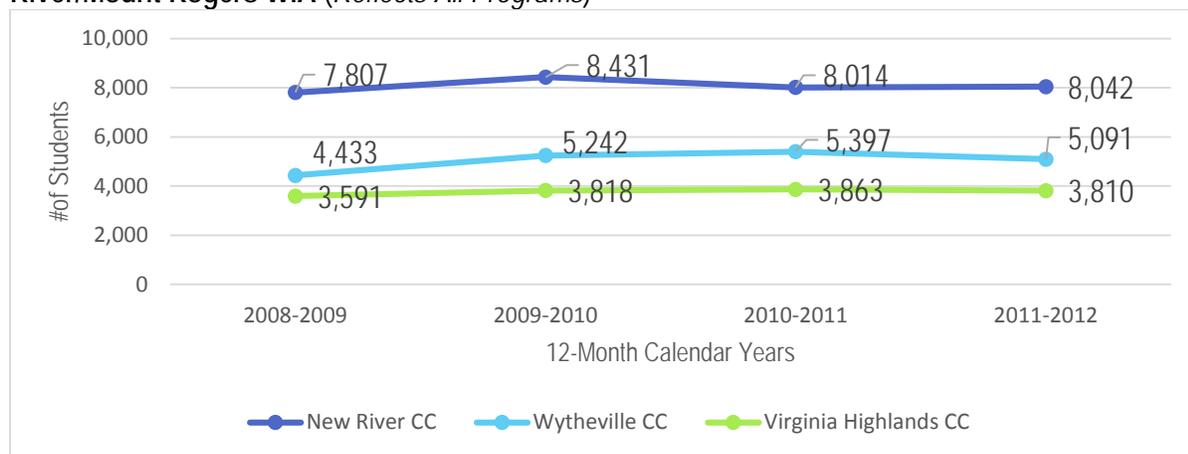


Figure 20, utilizing program completion data by domicile and excluding out of state students, shows that most regional resident community college completions provide a Certificate reflecting 1 to 2 years of coursework. Wytheville Community College (WCC) is the leading provider of education and training for certificates less than an associate's degree. Community college representatives suggested in interviews of this study that WCC's high number of completions in 1-2 year certificate programs are likely attributable to programs focused in health/mental health care training.

Figure 20: Completions at Regional Community Colleges, for Students Claiming Domicile in the New River/Mount Rogers WIA, Academic Year 2012-2013^{xxxii}

	New River Community College	Wytheville Community College	Virginia Highlands Community College	Total: Regional Community Colleges
Certificate (Less Than 1 Year)	123	254	95	472
Certificate (1-2 Years)	80	374	209	663
Associate's Degree (Transfer Credit)	174	165	100	439
Associate's Degree (Occupational/Technical)	215	153	128	496

As higher education tuition costs continue to rise nationally, community colleges offer opportunities to help reduce costs for those individuals seeking four-year college degrees. In the Commonwealth, VCCS has Guaranteed Admissions Agreements with programs at more than twenty colleges/universities.^{xxxiii} Regionally, the VCCS has programmatic agreements at Radford University (including Nursing), Virginia Tech (including the colleges of Agriculture and Engineering), and Emory & Henry College.

For regional residents, New River Community College (NRCC), is the leading institution for completions of Associate degrees for transfer. Given the close proximity of NRCC to Radford University and Virginia Tech, it is not surprising to discover that most students seek transfer to these institutions. Data from each of the three regional community colleges indicates that strong percentages of transfer students pursue distance-based programmatic offerings at or near their community college of origin. For example, WCC has high transfer rates to Old Dominion University (ODU). This is likely because ODU has programmatic offerings based on or near WCC facilities. Similarly, Virginia Highlands Community College (VHCC) likely has many transfer students seeking baccalaureate and above degree offerings provided through the Southwest Virginia Higher Education Center.

SCHEV continues to expand data resources for program completions and college transfer, and OED believes forthcoming information could offer valuable insights for how regional accessibility to training may be leveraged for efforts to promote industry connectivity. In particular, this information is relevant to career pathway strategy formation, and development of internship and on-the-job applied learning exercises. SCHEV, in partnership with the VCCS, will soon release longitudinal job placement and earnings data for program completers. Placement and earnings data will be further organized by the students' subject area, thus helping to enhance greater regional understanding pertaining to supply and industry demand for completers.

Figure 21: Destination Institutions for Community College Students Who Completed an AA/AS Prior to Transfer (Data is provided for 4-Year Institution Enrollment during AY 2012-2013)^{xxxiv}

	Virginia Public 4-Year Institutions	Virginia Private/Non-Profit 4-Year Institutions
New River Community College	Total Transfers: 142	Total Transfers: 21
	Radford University (78) Virginia Tech (47) Old Dominion University (8) Virginia Commonwealth University (3) George Mason University (3) James Madison University (2) Norfolk State (1)	Liberty University (9) Bluefield College (5) Jefferson College of Health Sciences (2) Ferrum College (1) Hollins University (1) Mary Baldwin College (1) Roanoke College (1) Shenandoah University (1)
Wytheville Community College	Total Transfers: 83	Total Transfers: 14
	Old Dominion University (35) Radford University (29) Virginia Tech (17) University of Virginia (2)	Liberty University (5) Bluefield College (2) Emory & Henry College (2) Jefferson College of Health Sciences (2) Bridgewater College (1) Lynchburg College (1) Virginia Intermont (1)
Virginia Highlands Community College	Total Transfers: 28	Total Transfers: 10
	Virginia Tech (11) Old Dominion University (5) UVA- Wise (5) Radford University (4) James Madison University (1) University of Mary Washington (1) University of Virginia (1)	Emory & Henry College (4) Virginia Intermont (2) Bluefield College (1) Ferrum College (1) Southern Virginia University (1) Liberty University (1)

4+-Year Colleges/Universities

During Academic Year 2012-2013, a total of 10,317 individuals completed a degree at one of the region's 4-year and above public or private/non-profit institutions of higher education. Virginia Tech was the region's largest producer of bachelor's degree graduates, producing a total of 5,604 degrees. Radford University was the second leading producer of bachelor degree graduates, reporting a total of 1,761 for the academic year. Figure X in the Appendix: Overview provides a summary of degrees issued by regional institutions, organized by level of degree award.

Examining the number of residents of the WIA who complete degrees at regional 4+-year institutions is more difficult than was the case for community colleges. This challenge is created by a sizeable population of students attending Virginia Tech, Radford, and the Edward Via College of Osteopathic Medicine (VCOM) who claim residency in Montgomery County and City of Radford (see Appendix: Overview- County Profiles for more information). Despite this potential skewing of information it appears that a strong percentage of

regional residents who completed a bachelor’s degree at a public institution in Virginia most often did so at Virginia Tech or Radford University.

As highlighted in Figure 22, a total of 1,339 residents of the WIA completed a degree at one of the region’s five baccalaureate and above degree-issuing institutions during Academic Year 2012-2013. Virginia Tech and Radford University were the leading issuers of bachelor’s degrees to WIA residents, each providing over 400 degrees respectively. Radford University was the leader for master’s degrees, issuing 138 during Academic Year 2012-2013.

Figure 22: Degree Completions at Regional and Statewide Institutions, for Students Claiming Domicile in the New River/Mount Rogers WIA (AY 2012-2013)^{xxxv}

	Virginia Tech	Edward Via College of Osteopathic Medicine (VCOM)	Radford University	Emory & Henry College	Virginia Intermont College*	All Virginia Public 4-Year Institutions (% at Regional Institutions)	All Virginia Private/Non-Profit 4-Year Institutions (% at Regional Institutions)
Associate’s Degree	9	NA	NA	NA	NA	--	--
Bachelor’s Degree (Four or Five Year)	489	NA	430	64	36	1,096 (83.9%)	197 (50.8%)
Master’s Degree	87	NA	138	10	NA	272 (82.7%)	77 (13.0%)
Doctoral/First Professional Degree	29	47	0	NA	NA	54 (53.7%)	66 (71.2%)

*Virginia Intermont College closed – effective May 2014.

Part A: Overview Conclusion: Using Subsequent Sections of This Report

The region’s economy and worker skills sets are strongly influenced by the presence of state government institutions, manufacturing firms, and health care and social assistance employers. Geographic concentration of these driving forces of employment often shapes the density and diversity of specific job titles throughout the region. Proximity to three neighboring states and other Virginia WIAs also creates unique opportunities and challenges impacting regional employment dynamics.

For individuals willing and able to commute, the industry sectors comprising manufacturing operations in the Tri-Cities, TN and Winston-Salem, NC metro regions may offer potential employment opportunities providing higher earnings. Growth of health-related businesses and research activity in the Roanoke, VA MSA also provides bright spots for potential employment of WIA residents, particularly for occupations which may be in present over-supply across the WIA.

In contrast, decline of the coal industry in neighboring West Virginia and Southwest Virginia WIA 1 may negatively impact WIA 2-based businesses serving the coal industry. For example coal-related layoffs occurred recently as Pulaski-based Caterpillar closed their mine equipment manufacturing operations, displacing over 200 workers. Additionally, displaced workers from WIA 1 will likely seek employment

opportunities in the New River/Mount Rogers WIA and thereby expand the potential pool of job seekers across the region. Washington County, Bristol city, and Bland County may experience the most impacts for cross-commuting workers to coal-producing localities.

To further examine how industry and occupational dynamics influence the knowledge and skills sets of the regional workforce this report provides a detailed analysis in Part B and Part C of the largest sectors for private employment-Manufacturing (NAICS 31-33) and Health Care and Social Assistance (NAICS 62). Employment trends, occupational skills analysis, employer outreach findings, and review of existing education and training programs for these leading industries may be referenced in these sections and their accompanying appendices.

The historic presence of agriculture within the New River/Mount Rogers WIA contributes to enhanced understanding for how workforce knowledge and skill sets are transferable across multiple types of work. Agriculture also represents a significant proportion of regional self-employment and business ownership. Part D of this report provides an analysis of the regional agriculture economy including types of commodities produced and occupations employed. This section also highlights best practices for how agricultural education programs can advance science, technology, engineering, and mathematics (STEM) based training initiatives.

Across the region, Professional, Scientific, and Technical Service (NAICS 54) firms provide many services which support numerous economic drivers across the New River/Mount Rogers WIA. This sector is very diverse both regionally and nationally. In more rural parts of the WIA, the Professional, Scientific, and Technical Service sector is primarily characterized by law offices and accounting firms. Architectural and engineering firms which specialize in civil engineering, and building design and construction services are also a leading source of regional employment in this sector.

In the northern jurisdictions of the WIA, the Virginia Tech Corporate Research Center (CRC) is a unique asset which contributes to a greater diversity of Professional, Scientific, and Technical Service firms in Montgomery County. As many of the companies in the CRC are Virginia Tech start-ups, or those which seek close proximity to university assets, the primary focus of these firms often align to Virginia Tech's research strengths. Some CRC firms also provide services, such as specialized testing, to directly support other local R&D companies. Part E of this report will offer a summary of the density and diversity of regional Professional, Scientific, and Technical Service employment.

This report concludes in Part F with examination of the regional tourism economy. When preparing this information, multiple jurisdictions expressed a specific interest for understanding how workforce skills sets align to support business development activities necessary to grow locally-owned and operated food, accommodation, and recreation businesses. As such, most information in Part F focuses on best practices for education and training models for aspiring entrepreneurs, and customer service training in the tourism industry.

End Part A: Overview: Regional Conditions

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