eleVAte
Skills for Jobs and Business Growth

2017
Quarter 1

New River Mount Rogers (WDA II) Quarterly Workforce Report

New River/Mount Rogers
Workforce Development Board

Prepared by the Virginia Tech Office of Economic Development
March 2017

VirginiaTech
Invent the Future

Quarterly Workforce Report 2017.1

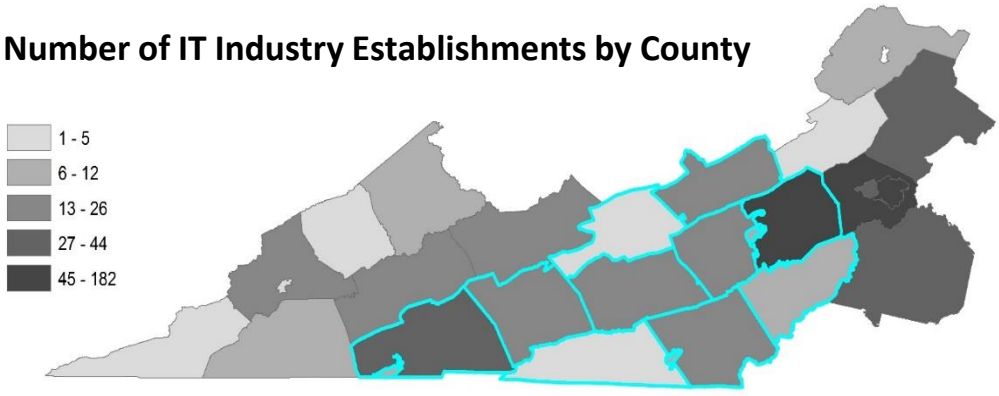
Welcome to the 2017 first quarter workforce report, produced by the Virginia Tech Office of Economic Development on behalf of the New River Mount Rogers Workforce Development Board (WDB). This region comprises the New River Valley Regional Commission and the Mount Rogers Planning Districts, including 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 March 2017.

Each quarterly workforce report focuses on one particular industry sector, so that over the course of each year, multiple top sectors are covered in depth. Additionally, each report provides key economic and demographic trends in the region that may affect workforce and industry currently or in the future.

This quarter, we focus on the Information Technology (IT) industry sector and IT occupations in the New River Mount Rogers region. The IT industry sector is comprised of many different sub-industries. The Virginia Tech Office of Economic Development uses the CompTIA IT/Tech Services Industry Sector definitions of the IT sector, which includes 22 six-digit NAICS industries. Similarly, we use the CompTIA Tech Occupations list of IT jobs, which includes 50 five-digit SOC Code occupations. This report will briefly explore the IT industry, and will then delve into IT occupations, possible career pathways, and training opportunities.

The latter half of this report will explore two regional trends that often pose challenges and opportunities for improvement. First, we examine unemployment levels, meanings behind unemployment data, and other factors that might emerge as we consider that one measure of economic growth. Second, we will explore access to childcare in the region and how such access affects our workforce.

The 22 IT industries comprising the IT sector employ around 2,728 workers in the NRMR region. Top employing industries that are also projected to grow in the coming five years are Engineering Services, Computer Systems Design Services, and Computer Facilities Management Services. The above map shows geographical distribution of IT establishments in Southwest Virginia. The darker shades indicate a higher number of establishments per county. NRMR (highlighted in blue) has a decent number of IT establishments, with 322 IT establishments counted in 2016, not including sole proprietor establishments without payroll. Montgomery County has the highest number of IT establishments in the WIA II, followed by Washington County. Bland and Grayson counties have the lowest presence of IT establishments.



Source: EMSI Analyst 2017.1. Dataset "Payrolled Business Locations 2016".

The IT sector often offers high wage jobs and can be an economic driver to the region if a competitive niche is found. Growth in the region's IT sector may be facilitated by enhancing and expanding broadband infrastructure (for businesses and households alike), fostering a home-grown skilled IT workforce, and supporting quality of life initiatives to keep skilled workers and businesses in the region.

TEDS®
STRATEGIC TALENT MANAGEMENT SOLUTIONS

Source: TEDS, Inc. http://teds.com/

One example of a prosperous IT company in the NRMR Workforce Development Area is TEDS, Inc., which employs over 500 workers. Located in Smyth County, TEDS develops talent management software so businesses might "align business objectives with all facets of the talent lifecycle," including onboarding, performance, skill competencies and succession.

TEDS is home-grown. Research and planning for the business begin in 1989 with its parent company, CBM Technologies in Marion, VA. TEDS became incorporated in 2003 and has grown to serve millions of users from different industries. Their current healthcare system clients include Textron and Sandia National Laboratories. They pride themselves on being hassle free with a single user interface and a single database. They update their software according to the needs of their customers through quarterly updates.

IT occupations and skills do not just benefit the IT Industry Sector. Indeed, IT jobs span across many different industries, including government, healthcare, corporate business, manufacturing, aerospace, and schools. As Table 2 shows, IT and Tech-related industries employ a higher concentration of the top ten IT occupations (shown in Table 1); however, IT jobs are present across more than 16 high level industry sectors in the region.

Median Earnings for Top 10 $28/hour

170 Annual Job Openings for Top 10

108 Average Monthly Hires for Top 10

Table 1: Top 10 Employing IT Occupations ('12-'17)

Occupations	2017	2012-2017 Change	Annual Openings
Electrical & Electronic Equipment Assemblers	574	-6	33
Computer User Support Specialists	543	34	23
Industrial Engineers	429	20	23
Software Developers, Applications	416	55	22
Mechanical Engineers	375	-13	19
Computer Systems Analysts	282	23	12
Network & Computer Systems Admins	276	7	8
Software Developers, Systems Software	202	12	9
Electrical & Electronics Engineering Tech	198	-7	11
Electrical Engineers	198	-15	10

Table 2: Industries Employing Top 10 Information Technology Occupations

Industries (4 digit NAIC)	2017 Total Jobs	2017 IT Jobs	% IT Concentration within Industry	% IT Presence Across Industries
Electrical Equipment Manufacturing	2,313	643	27.8%	17.9%
Computer Systems Design & Related Services	1,398	479	34.3%	14.3%
Education and Hospitals (State Government)	12,126	235	1.9%	6.6%
Motor Vehicle Parts Manufacturing	2,345	180	7.7%	4.7%
Motor Vehicle Manufacturing	3,054	157	5.1%	4.3%
Architectural, Engineering, and Related Services	1,179	114	9.7%	3.4%
Ventilations, Heating, Air Conditioning, & Commercial Refrigeration Equipment Manufacturing	705	89	12.6%	2.4%
Resin, Synthetic, Rubber, & Artificial Synthetic Fibers & Filaments Manufacturing	1,369	86	6.3%	2.4%
Management of Companies & Enterprises	1,146	82	7.2%	2.3%
Aerospace Product & Parts Manufacturing	491	75	15.3%	2.2%
ALL INDUSTRY TOTAL (including those not shown)	**99,460**	**3,420**	**3.4%**	**100%**

Source: EMSI Analyst. 2017.1. Class of Worker QCEW, Non-QCEW, and Self-Employed

IT career paths can vary. Below are *example* IT career pathways, including specialties in 1) Interactive Media, 2) Networking, and 3) Programming. These pathways show levels of education recommended, details of each occupation including growth projections to 2021, and beneficial hands-on experiences. Pathways read from left to right, where each occupation *can* build on the previous job experience.

Model inspired by: the Information Technology Career Pathway created by Ohio Department of Education
*Data Collected from EMSI Analyst 2017.1 Class of Workers and O*Net.*

Below is a sampling of existing college programs that are offered in the NRMR Workforce Development Area pertaining to IT occupations. Programs prepare students to become IT and computer software specialists upon completion. For more information about these programs or others related to IT occupations, please contact New River Community College or Wytheville Community College.

New River Community College

Associate's of Applied Science in Information Systems Technology, with Cyber Security Specialization

New River Community College offers an associate's degree in information technology with a focus in cyber security. The program is a four semester program that can be done in two years. This program prepares students to work to protect computer networks and information and to safeguard electronic infrastructure and digital files. After completing this program, students will be prepared to enter the workforce as a entry-level computer security specialist or a information security specialist.

Wytheville Community College

Associate's of Applied Science in Information Systems Technology

Wytheville Community College offers an associate's degree in information systems technology, with two different specializations: network administration and cybersecurity. Both specialties are offered in a two year program that focuses on coursework in computer applications, web page designs and applications, operating systems, computer hardware, and computer programing languages including Java. This degree prepares students to work in the field of networking systems technology. Students can also look to transfer credits to a four year institution to obtain a bachelor's degree in computer systems.

Career Studies Certificate in Networking

The Career Studies Certificate in Networking at Wytheville Community College is a two semester program comprised of twelve credit hours. The program coursework includes an introduction to network concepts, Linux System Administration, network security basics, administration of network resources, and background on protocols and communication. This certificate provides preliminary training that prepares students to enter the workforce in the networking field and future coursework if they wish to continue to an associate's or bachelor's.

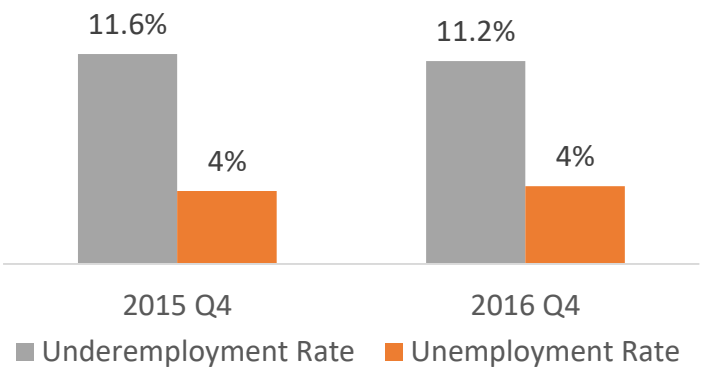
Courtesy of Shutterstock.com

The unemployment rate in the NRMR region is comparable to the state and nation. Variation across counties is insignificant. Unemployment ranges from 5.7% in Smyth County to as low as 3.6% in Montgomery County.

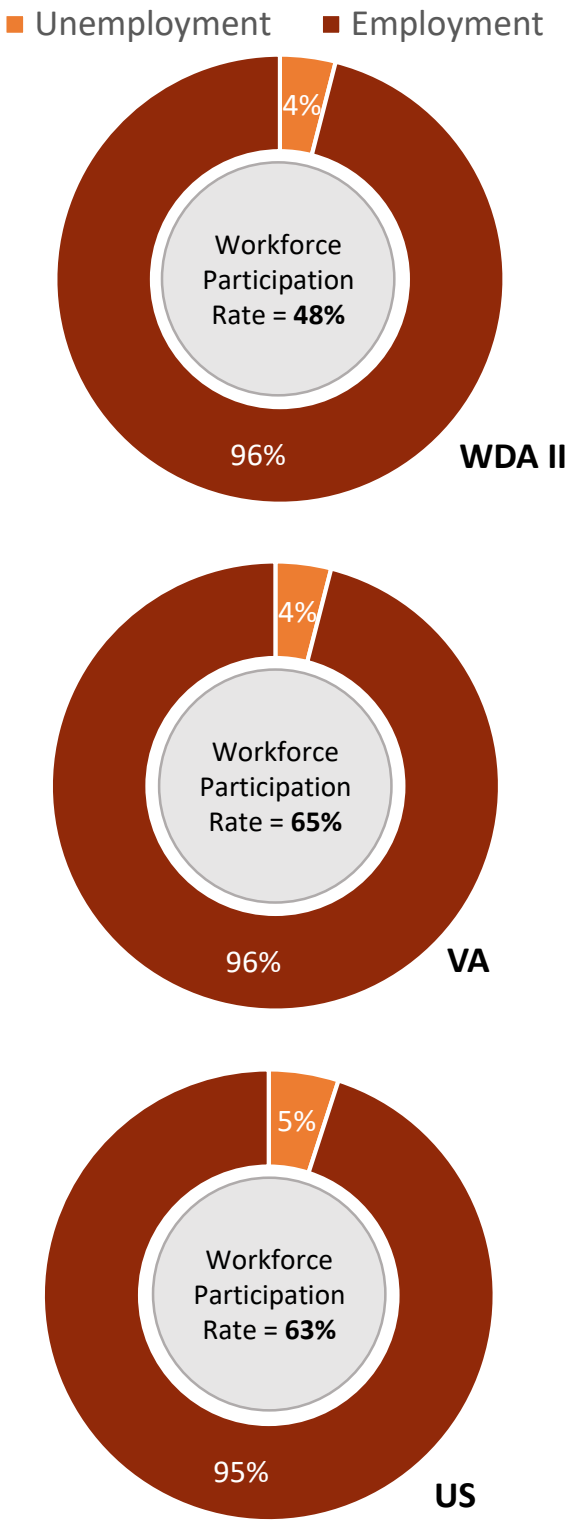
Unemployment statistics can be misleading, however, because they only count people who have no employment and are *actively* applying for jobs. This overlooks growing numbers of people who are either *underemployed* or disengaged from the labor force entirely. Even before the Great Recession, the region experienced losses in industries with high wage jobs such as coal and manufacturing. Those jobs have often either not been replaced or have been replaced by lower paying, often service industry, occupations. As a result, this region's underemployment rate is significantly higher than that of the state, and some workers have given up searching for work all together, resulting in a lower workforce participation rate.

Definitions

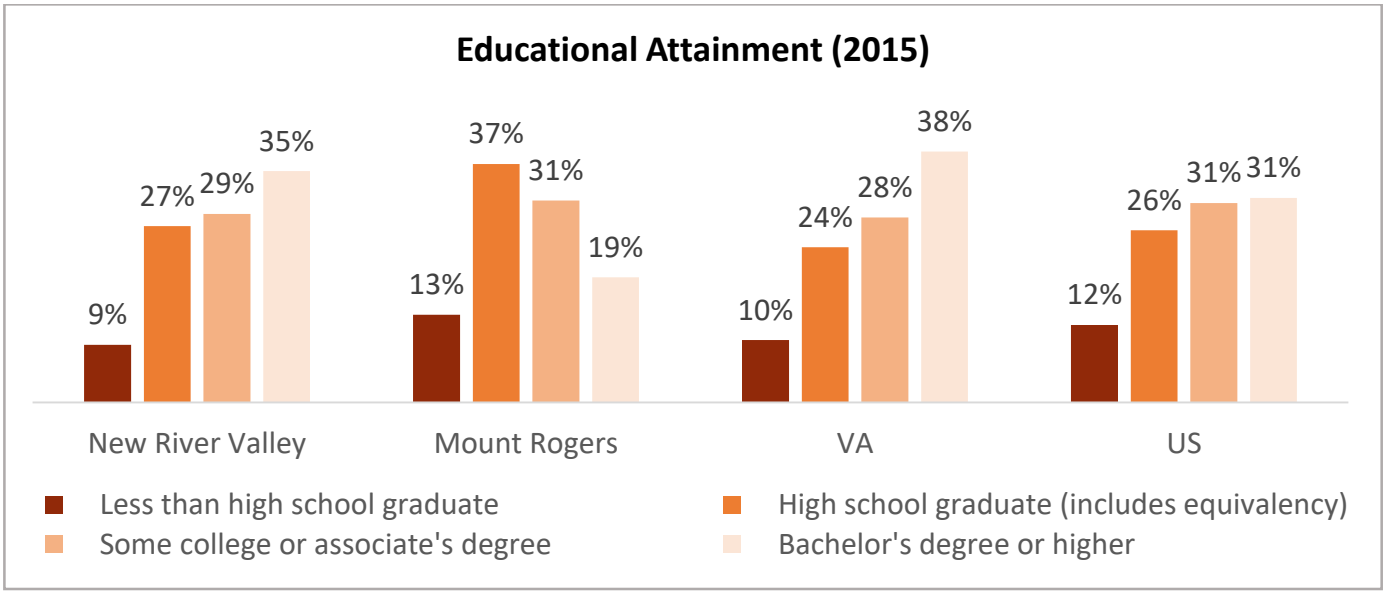
- ***Workforce Participation Rate:*** *The percentage of the population (16 years and older) that is employed or unemployed, i.e. working or actively seeking work.*
- ***Unemployment Rate:*** *The percentage of people who are unemployed, meaning they are: jobless, have actively looked for a job in the past four weeks, and are available for work.*
- ***Underemployment Rate****: Workers who are highly skilled but working in low paying jobs, workers who are highly skilled but working in low skill jobs and part-time workers who would prefer to be full time.*



Comparing Employment, Unemployment and Workforce Participation

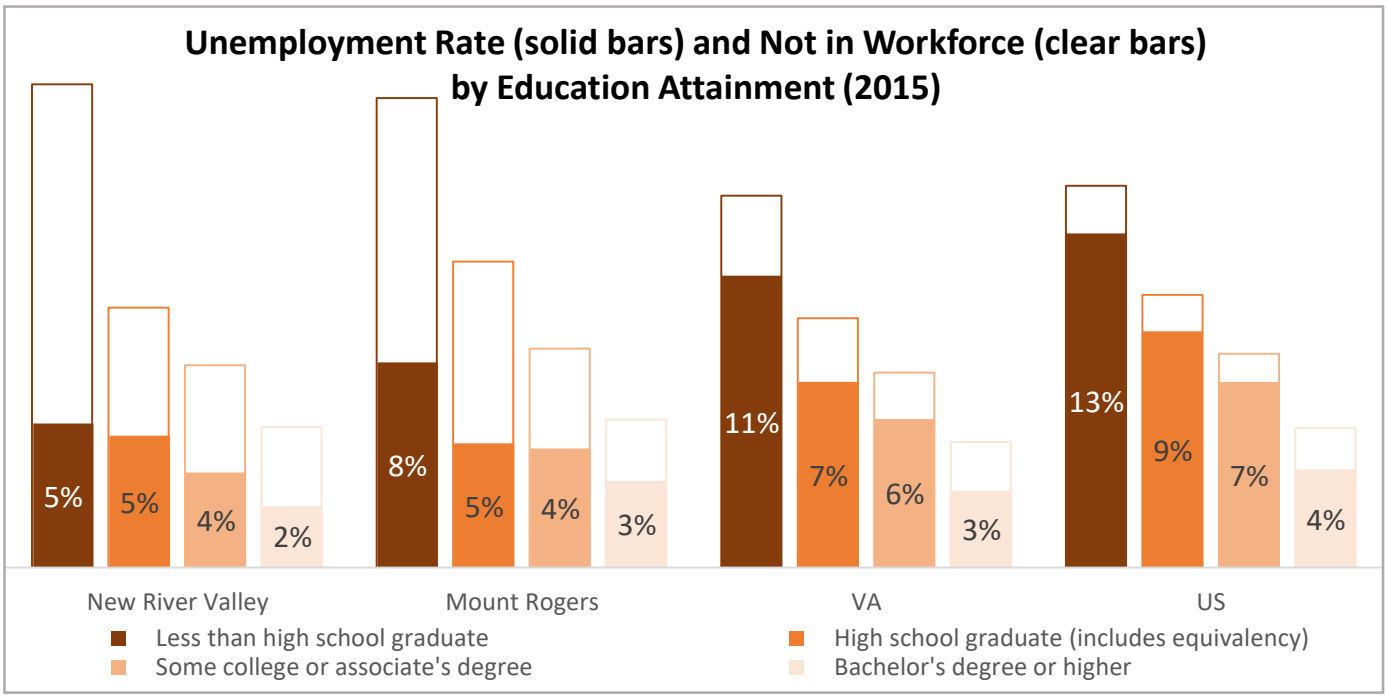


Source: U.S. Bureau of Labor Statistics; Virginia Economic Development Partnership; U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates



The NRMR Workforce Development Area has some distinct differences between its two planning districts. The New River Valley follows state and national education attainment trends, with escalating proportions of the population attaining higher levels of education. The Mount Rogers planning district, with prominent industries such as coal and manufacturing, displays a different education attainment trend, with a higher proportion of people ceasing education after high school. To a lesser degree, Mount Rogers still seems to follow the state and national unemployment trends.

Unemployment by Education Attainment, however, has the same misleading information as seen in the previous page; it doesn't show the larger picture. By including those 25-64 years old who are <u>not</u> in the workforce, one sees a greater number of residents potentially in need of work .

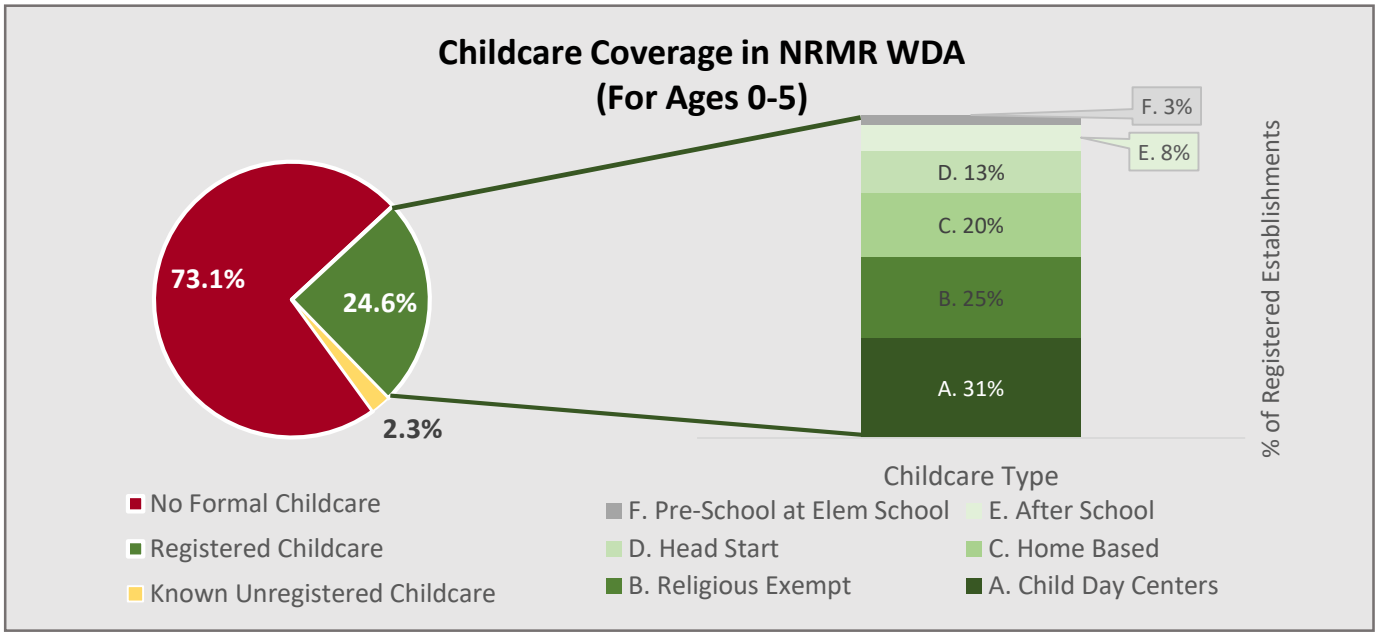


Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

Childcare provision varies drastically within the New River Mount Rogers region. The region as a whole has registered childcare services available to cover only 24.6% of children under five, and 21.6% of children under 12. However, in Galax, registered childcare facilities have capacity to cover 84% of Galax children (0-5), but in Grayson County, the rate is below 3%. While it is certain that working parents commute and use childcare services outside of their home counties, the disparity between counties is still an indication of a significant workforce barrier for rural parents. In addition to capacity and geographical barriers, parents face financial, time-related, and quality-related childcare barriers.

Childcare Services by County

County or City	Young Children (Ages 0-5)	Children (Ages 0-12)	Total Registered Childcare Establishments	Total Known Childcare Establishments (Including Unregistered)	Avg Capacity (# Children Aged 0 -12 Served) Per Establishment	% Children Aged 0-5 Served by Registered Childcare	% Children Aged 0-12 Served by Registered Childcare
Bland	306	623	2	7	35	14.7%	11.7%
Bristol	1,234	2,507	20	23	83	63.3%	66.2%
Carroll	1,764	3,658	12	15	36	14.6%	12.0%
Floyd	900	1,974	8	10	33	18%	13.5%
Galax	335	883	10	14	43	84%	48.2%
Giles	983	2,268	7	8	48	23.4%	14.8%
Grayson	826	1,779	2	3	15	2.6%	1.6%
Montgomery	5,295	10,415	51	56	61	28.3%	29.7%
Pulaski	2,007	4,176	9	10	62	16.5%	13.4%
Radford	604	1,299	9	10	72	57.1%	49.8%
Smyth	1,974	3,908	12	14	41	14.2%	12.5%
Washington	3,135	6,699	23	25	40	17.9%	13.9%
Wythe	1,596	3,850	10	11	55	21.7%	14.3%
TOTAL	20,959	44,039	175	206	54	24.6%	21.6%



Source: U.S. Census ACS; Virginia Tech Office of Economic Development Childcare Inventory 2016-2017

for More Information Please Contact:

Scott Tate
Senior Economic Development Specialist
Virginia Tech Office of Economic Development
Phone: (540) 231-2351
Email: atate1@vt.edu

Sarah Lyon-Hill
Economic Development Specialist
Virginia Tech Office of Economic Development
Phone: (540) 231-9940
Email: sarahlh@vt.edu