



VIRGINIA INITIATIVE FOR
**GROWTH &
OPPORTUNITY**
IN EACH REGION

GO Virginia Region 9

Growth & Diversification Plan Update

August 2019

GO Virginia Region 9



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Acknowledgements

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- UVA Career Services
- UVA Licensing & Ventures Group

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**GO Virginia Region 9
Growth & Diversification Plan Update
August 2019**

EXECUTIVE SUMMARY

Introduction

This report is an update to the original Growth and Diversification Plan (Growth Plan) published by Camoin and Associates in August 2017 on behalf of the GO Virginia Region 9 Council. The goal of this report is to respond to the Growth and Diversification Plan Amendment Guidelines approved by the GO Virginia Board on March 12, 2019 and to comply with the Growth and Opportunity Act (2016) that requires regional plans be updated at least every two years. While preparing this report, the Council has identified accessible data sources related to regional objectives to ensure that success can be more easily measured thus ensuring this plan becomes an interactive and dynamic document.

Most of the data for regional target industries was pulled from JOBS EQ from CHMURA. JOBS EQ is the in-house database available at the Central Virginia Partnership for Economic Development (the Partnership), the support organization for the Region 9 Council.

Much of the forward looking data for reviewing the four established project frameworks was sourced from key regional partners who are experts in specific subject areas.

About GO Virginia

GO Virginia, where “GO” stands for Growth & Opportunity, is a statewide economic development initiative to promote private-sector economic growth and diversification across Virginia by targeting new investment and innovation in high-income and export-oriented industry sectors. To implement the program statewide, nine different regional councils were established and tasked with creating initial regional Growth & Diversification Plans (Growth Plan) specific to each region. Each Council is responsible for awarding grants that incentivize collaboration between higher education, business and local government to address the opportunities outlined in each respective regional Growth Plan.

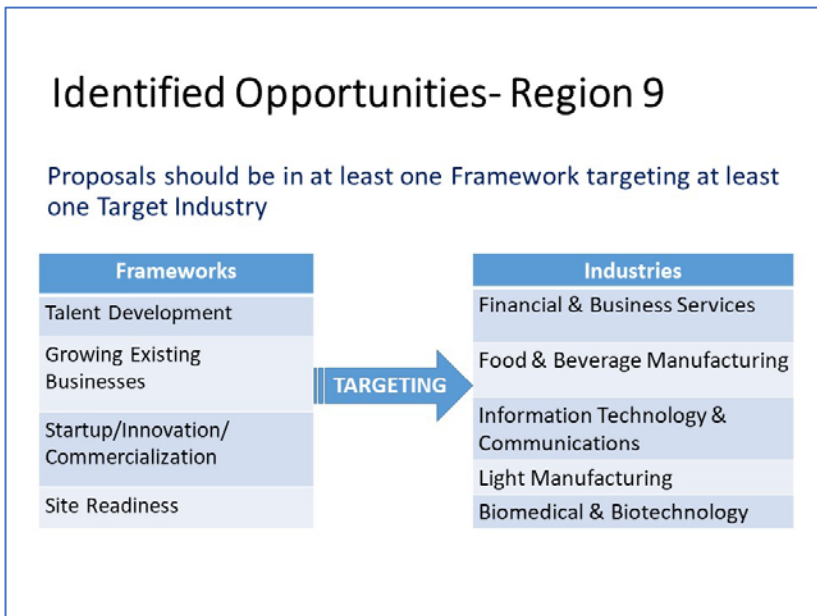
About Region 9

GO Virginia Region 9 (Region 9) incorporates eleven localities in Central Virginia that together encompass rural settings and active downtown main streets. The region includes the Counties of Albemarle, Culpeper, Fauquier, Fluvanna, Greene, Louisa, Madison, Nelson, Orange, and Rappahannock, and the City of Charlottesville. Region 9 shares the same footprint as Virginia Career Works - Piedmont Region, as well as the combined footprints of two planning districts, the Rappahannock-Rapidan Regional Commission (Planning District 9) and the Thomas Jefferson Planning District Commission (Planning District 10). The Central Virginia Partnership for Economic Development (Central Virginia Partnership) is the administrative support organization of the Region 9 Council and shares a similar footprint. The Partnership doesn't cover the Counties of Fauquier and Rappahannock. .

Frameworks and Target Industries

The 2017 Region 9 Growth Plan set forth four primary frameworks for targeting specific industries in order to advance regional growth objectives. In short, project proposals for grant funds must be in at least one framework including: Talent Development, Growing Existing Businesses, Startups/Innovation/Commercialization, and/or Sites. Proposals must also target one or more of five target industries including: Financial and Business Services, Food and Beverage Manufacturing, Information Technology/Communication, Light Manufacturing, and, Biomedical and Biotechnology.

Upon reviewing data, the Council has determined that there should be no immediate change in the four frameworks or target industries, at this time. The frameworks align with GO Virginia Board activities and the target industries still represent the largest sectors where growth in higher paying jobs can impact the regional economy. There are, however, new or refined opportunities in those target sectors that have been developed through stakeholder engagement and lessons learned. These opportunities have also been informed by guidelines and policies established by the GO Virginia Board.



Though the frameworks and target industries will remain as they are for the next two years, there should also be a mechanism for identifying potential new industries or reacting to unexpected transformational opportunities that may arise.

It should be noted that a regional workforce gap analysis does not indicate singular gaps for these regional industries. This lack of compelling data signifies an opportunity for regional sector strategy development through GO Virginia projects.

Outcomes

In 2016, baseline regional economic data was provided by the George Mason University Center for Regional Analysis to develop the Region 9 Growth Plan. Originally, the key baseline metric was based on Per Capita Income sourced from the US Bureau of Economic Analysis. In 2018, the GO Virginia Board amended the baseline metric to regional average annual wages and pulled that data from JOBS EQ.

Per data pulled from JOBS EQ, in Region 9, average annual wages in Q4 of 2016 were \$46,252. Preliminary data indicates average annual wages in Q4 of 2018 are \$48,477. A growth trend has been established. Growth is occurring in the target industries that is above the five year average, as well. That said, because the Growth Plan was published in August 2017 and the first Region 9 project was awarded in March 2018, a direct impact from projects cannot yet be correlated. For more details, see the attached Report and Appendix following.

Updated Opportunities

The following is a summary of the priority opportunities for the Region 9 Council to support through driving project development. All grant proposals must specifically address one or more of these opportunities. More details follow in the Update Report and Appendix sections.



Talent Development

Support development of a regional workforce project to convene stakeholders for developing regional target sector based strategies.

Support growth of Information Technology, as well as all other target sectors, through a Tech Talent pipeline initiative.

Evaluate how credentialing, **apprenticeship, and /or internship** programs for target industries could support higher paying jobs and/or growth of the traded sector.

Continue supporting and monitoring Talent Development projects including George Washington Carver-Piedmont Technical Education Center (GWC-PTEC), Central Virginia Cybersecurity, and Crafting Higher Paying Jobs and Adult Beverage Exports.



Growing Existing Businesses (Scale-Up Existing Clusters)

Support growth of the biotechnology and biomedical cluster to attain a critical mass of enterprises, talent and intellectual property.

Support development of a large amount of new square footage serving the biotech industry in a strategically concentrated area including wet lab space.

Identify scale-up opportunities in other targeted sectors, such as export growth for Food & Beverage Manufacturing, Light Manufacturing, and Information Technology.

Monitor the opportunity for supporting broadband initiatives as the access to broadband is a critical need in most Region 9 localities.



Startups/Innovation/Commercialization (Entrepreneurship Ecosystem)

Facilitate initiatives that advance opportunities outlined in the TEconomy Region 9 Assessment.

Review the opportunity for developing a plan to set aside specific Per Capita funds to invest in the entrepreneurship ecosystem as outlined by the GO Virginia Board.

Support development of a rural entrepreneurship coalition in rural counties.



Sites

Encourage and support the creation of a Regional Industrial Facilities Authority (RIFA) or equivalent regional collaborative partnerships, as appropriate to support regional site development.

In collaboration with partners, outline a regional approach to addressing the region's site readiness needs by advancing sites through the Virginia Business Ready Sites Program (VBRSP).

Support and encourage the continued development of the regional business park in Louisa County.

Advance further development of current sites and seek opportunities for regional collaboration on new sites.



Other

Review the 2019 Central Virginia Partnership Strategic Plan to identify areas for collaboration and efficiencies to drive the creation of high paying jobs and growing the traded sector in Region 9.

Explore opportunities to assess and support the development of emerging industries that could help the region grow high paying jobs and expand the traded sector (i.e. Hemp Industry, Renewable Energy Industry, and Environmental Sustainability Industry).

Implementation & Funding

The Central Virginia Partnership for Economic Development serves as the support organization for the Region 9 Council, therefore, this organization is the most critical partner for implementing Growth Plan opportunities, though there are many others.

The Capacity Building funds allocated by the General Assembly are critical for administration and overview of the GO Virginia Region 9 initiative. If there is a time when match dollars are required for Capacity Building funds, the Partnership's capacity to serve in this role will be critically hampered.

Since the Region 9 Growth Plan was published, new partners and mechanisms for project match funding have been developed or identified. The Council will continue to work with localities to set aside match funding while also exploring opportunities for funding with private foundations or other sources.

Performance Metrics

As mentioned, one goal of this report is to develop readily accessible sources of data through the Central Virginia Partnership or through partners that are currently tracking the needed information. The Council and Region 9 Staff believe this is an important efficiency for sustainability of this program's effectiveness in Region 9 and ensures that data can be tracked and or accessed as close to real time as possible.

Report and Data Appendix

Following is the 2019 GO Virginia Region 9 Growth & Diversification Plan Update Report and Appendix.

Additional Information

GO Virginia Region 9 at www.GOVirginia9.org

Central Virginia Partnership for Economic Development at www.CentralVirginia.org

GO Virginia at www.GOVirginia.org

Department of Housing and Community Development (DHCD) at <https://www.dhcd.virginia.gov/gova>

Growth and Opportunity Act at <https://vacode.org/2016/2.2/I/D/24/26/>

GO Virginia Region 9
Growth & Diversification Plan Update
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REPORT

Introduction

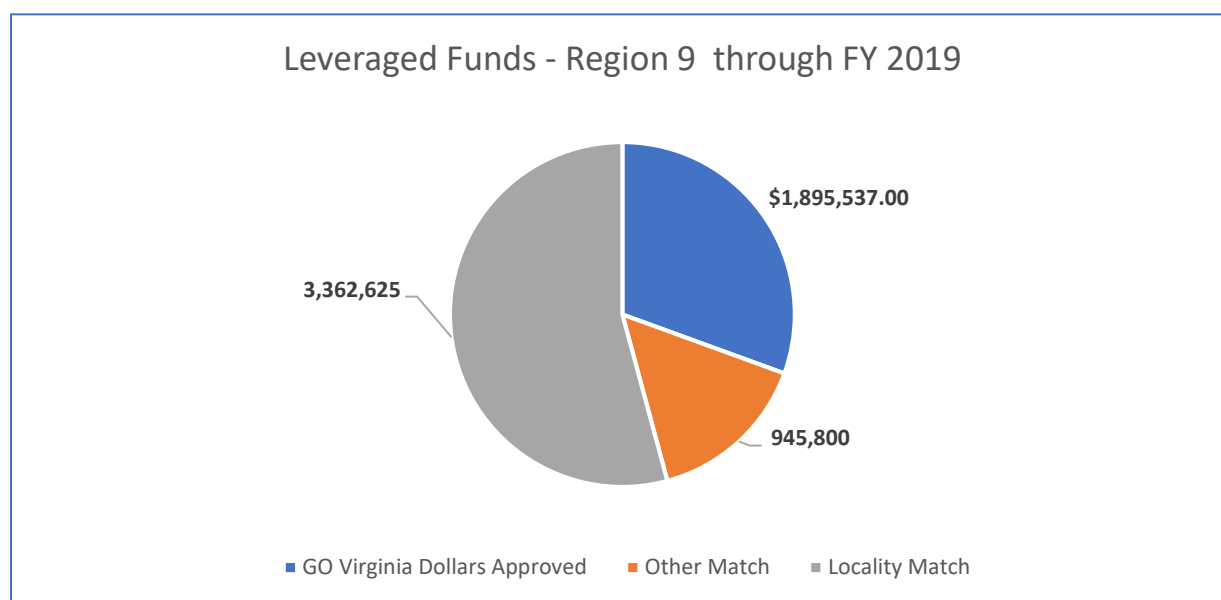
In order to determine opportunities and priorities for the coming two years, the Region 9 Council first reviewed prior year successes, summarized lessons learned and evaluated metrics. The following provides a summary of those efforts.

The GO Virginia Region 9 Growth and Diversification Plan (Growth Plan) developed by Camoin and Associates was published in August 2017. The Plan identified four project frameworks for targeting five target industries to drive the growth of high paying jobs and growth in the traded sector throughout Region 9. The 2017 Growth Plan established that projects must be in the areas of Talent Development, Growing Existing Businesses, Entrepreneurship & Innovation, or Sites. Project must also target one or more of specific industries including Financial and Business Services, Food and Beverage Manufacturing, Information Technology/Communication, Light Manufacturing, and, Biomedical and Biotechnology.

Based on a review of the data, lessons learned and policies and guidelines from the GO Virginia Board, the Region 9 Council is not recommending changes in the established frameworks or target industries. However, the opportunities have been updated based on data review, stakeholder input and project activities.

Prior Year Successes

Since the Growth Plan's release, the Region 9 Council has approved eight grants to advance opportunities identified in the 2017 Growth Plan.



These eight projects have been approved by the GO Virginia Board. To date, the Region 9 Council has awarded \$ 1,895,537 in Per Capita grants, including \$325,715 in Enhanced Capacity Building (ECB) grants. Together these projects leveraged over \$3,300,000 in locality match; \$430,860 in private sector support; and \$425,000 from education. All counties have participated in some way in at least one grant. Additionally, all three community colleges, Germanna Community College (GCC), Lord Fairfax

Community College (LFCC), and Piedmont Virginia Community College (PVCC), and the University of Virginia (UVA) have participated in more than one project. At least eleven businesses in the region are engaged in regional grants in progress.

All industries, with the exception of Financial and Business Services, have been targeted for growth through these funded projects.

The Central Virginia Site Readiness project, an enhanced capacity building (ECB) grant, has completed activities. Though this project was an Enhanced Capacity Building effort, it has demonstrated measurable outcomes in terms of supporting the increase in number of Tier 4 Sites within the region from zero prior to the 2017 Growth Plan to four Tier 4 sites to date.

The Region 9 Council has oversight in place to ensure that projects stay on track and will take actions to assist applicants as needed to address barriers. Project budgets are reviewed at each Council meeting and potential barriers are discussed and action plans are developed.

Region 9 Funded Projects

The Region 9 Council has submitted and been approved for eight projects since the publication of the 2017 Growth Plan.

Project	GO Virginia \$	Locality Match	Other Match	Description
George Washington Carver Piedmont Technical Education Center (GWC PTEC) Culpeper County with Counties of Fauquier, Madison, Orange, and Rappahannock; and Germanna CC	\$ 244,300	\$ 431,625	\$ 1,000,000	Talent Development targeting Light Manufacturing
Crafting Higher Paying Jobs and Adult Beverage Exports PVCC with Germanna CC and the Counties of Madison and Nelson	\$ 249,472	\$ 50,000	\$ 259,000	Talent Development targeting Food & Beverage Manufacturing
Central Virginia Cybersecurity Partnership PVCC with GCC and LFCC	\$ 100,000	\$ 0	\$ 136,400	Talent Development (ECB) targeting IT/Communications
Central Virginia Site Readiness Central Virginia Partnership with Counties of Albemarle, Culpeper, Fluvanna, Greene, Louisa, Madison, Nelson, and Orange	\$ 58,675	\$ 58,675	\$ 0	Site Development (ECB) targeting Light Manufacturing
CvilleBioHub CvilleBioHub with City of Charlottesville, Albemarle County and UVA	\$ 83,540	\$ 10,000	\$ 84,600	Grow Existing Businesses (ECB) targeting Biotech
Catalyst Accelerator Project City of Charlottesville, Albemarle County, UVA Economic Development, UVA Darden School of Business Batten Institute for Entrepreneurship and Innovation, Community Investment Collaborative	\$ 475,200	\$ 110,000	\$ 354,200	Entrepreneurship & Innovation targeting traded sector
Young Entrepreneurs Resource Guide Fauquier County with Counties of Culpeper, Louisa, Madison and Orange; and, Orange County Schools, Culpeper County Schools; Fauquier County Schools; Wakefield School in Fauquier; Mason and Fauquier Enterprise Centers	\$ 83,500	\$ 87,500	\$ 5,000	Entrepreneurship & Innovation targeting traded sector
Regional Business Park Louisa County and nine localities represented by the Central Virginia Partnership, Goochland County	\$ 600,850	\$ 2,802,150	\$ 0	Site targeting traded sector
	\$1,895,537	\$3,362,625	\$945,800	

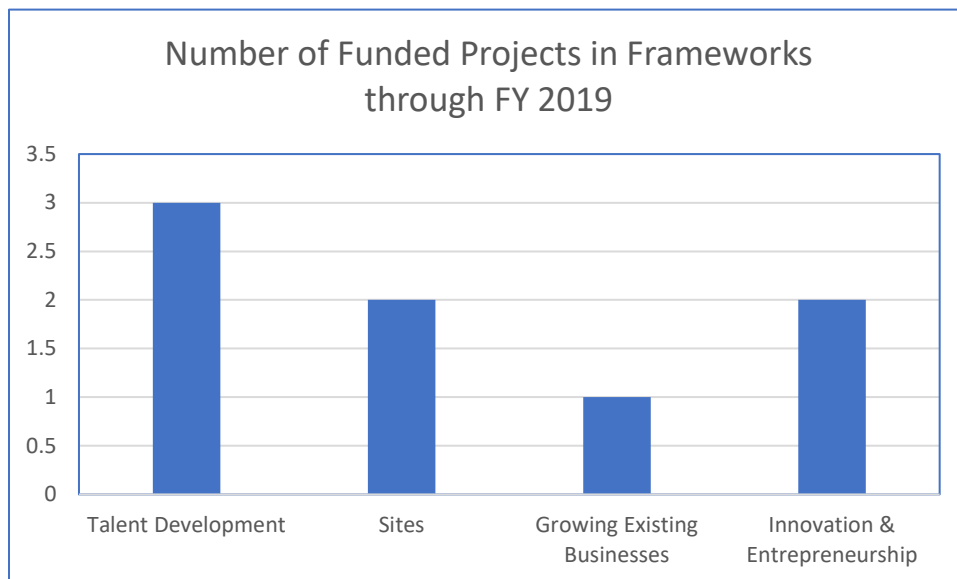
Target Industries

It is recommended in this 2019 Plan Update that the target industries identified in the original Growth Plan (2017) remain the same for the next two years.

This Growth Plan Update is being prepared to be in compliance with the requirements of the Growth and Opportunity Act, but also to ensure the region continues to optimize success through the GO Virginia mechanism.

Average Annual Wages for all industries in Region

9 increased from \$46,252 in 2016 Q4 to \$47,800 in 2017 Q4 for an annual change in average annual wages of 3.3%. The average annual wage increase in 2016 Q4 was 0.8%. Preliminary data through 2018 Q4 indicates the average annual wage to be \$48,477 with a 1.4 % average annual increase from prior year and quarter.



Workforce Gap Analysis

As of Q1 2019, eleven industries in Region 9 are projected to experience workforce supply gaps with the largest gap in Healthcare Practitioners and Technical Occupations (107) according to data from JOBS EQ. Healthcare is not a target industry, however, the positions falling within the next three highest gaps in Management Occupations, Computer and Mathematical Occupations, and Business and Financial Operations Occupations will affect regional target industries. The top five projected gaps are listed in the table below and the full table is enclosed in the Appendix.

This data does not spotlight one significant regional issue nor does it represent current activity in the marketplace. Regional economic development announcements indicate that there are at least three employers in the region that are expanding and cumulatively seeking over 300 employees mostly in software development. Therefore, the Council views the need to collaborate with partners to engage sector stakeholders to develop regional project in Talent Development as an opportunity, as noted in the Updated Region 9 Opportunities.

SOC	Title	Annual Supply Gap	Current Employment Q1	Total Annual Demand
29-0000	Healthcare Practitioners and Technical Occupations	(107)	9,473	11,041
11-0000	Management Occupations	(50)	8,584	9,466
15-0000	Computer and Mathematical Occupations	(40)	4,889	5,622
13-0000	Business and Financial Operations Occupations	(39)	9,490	10,453
25-0000	Education, Training, and Library Occupations	(11)	13,890	15,219

JOBS EQ

Growth of Target Industries

As of 2018 Q4, employment in all industries in the region has increased from 182,497 in 2016 Q4 to 188,702, an increase of 3.4%. The five year average annual growth rate was 1.9%.

Financial and Business Services

Financial and Business Services industry grew by 486 jobs, the highest number of the five regional target industries in that same time period, from 16,166 (2016 Q4) to 16,652 (2018 Q4) to achieve 3% growth. The five year average annual rate of growth for this regional industry is 2%.

The Financial and Business Services industry sector is made up of 22 different 4-digit North American Industry Classification System (NAICS) codes covering a broad range of products and services. Industries in this sector include finance, insurance, and real estate, accounting, consulting, and data processing services. This industry sector covers an array of services related to finance and business management including, Other Investment Pools and Funds (NAICS 5259) with a Location Quotient (LQ) of 3.48; Other Professional, Scientific, and Technical Services (NAICS 5419) with an LQ of 1.06; and, Computer Systems Design and Related Services (NAICS 5413) with an LQ of 1.06.

Food and Beverage Manufacturing

Food and Beverage Manufacturing industry grew by 346 jobs from 1,889 (2016 Q4) to 2,235 (2018 Q4) for an 18% growth rate during that time. The five year average annual growth rate is 9.8%.

The Food and Beverage Manufacturing industry sector includes 10 different 4-digit NAICS industries that are all involved in the food manufacturing process. Dominant industries in Region 9 are in Beverage Manufacturing (NAICS 3121), particularly the manufacturing of beer, wine, and soft drinks with an LQ of 5.62.

Information Technology /Communication

Information Technology/Communication industry grew by 183 jobs from 11,792 (2016 Q4) to 11,975 (2018 Q4) for a 1.6% growth rate. The five year average annual rate of growth for this region is 1.2%.

The Information Technology/Communications sector includes 16 different 4-digit NAICS industries involved in the development, manufacturing, and use of Information Technology (IT) and related services. Important areas within this sector are Scientific Research and Development Services (NAICS 5417) with an LQ of 1.97; Industrial Machinery Manufacturing (NAICS 3332) with an LQ of 1.91; Instrument Manufacturing (NAICS 3345) with an LQ of 1.26; and, finally, Computer Systems Design and Related Services with an LQ of 1.06.

Light Manufacturing

Light Manufacturing jobs increased by 573, from 8,470 (2016 Q4) to 9,043 (2018 Q4) for a 6.7% growth rate for that time period. The five year average annual rate of growth for the region is 2.9%.

Light Manufacturing in Region 9 includes forty-five 4-digit NAICS industries that typically requires relatively less capital investment and often involves final assembly steps for consumer goods, medical components, high-tech devices, and other goods.

One sector not already listed within other Region 9 target industries, such as Beverage Manufacturing and Information Technology/Communications, is Refrigeration and Equipment Manufacturing (NAICS 3334) with an LQ of 1.64.

Biomedical and Biotechnology

The Biomedical and Biotechnology industry in Region 9 grew from 3,096 jobs (2016 Q4) to 3,190 (2018 Q4) or 3%. The five year average annual growth rate for the region is 1.9%.

The Biomedical and Biotechnology industry sector is comprised of eight different 4-digit NAICS industries. The largest sector of employment is in Scientific Research and Development Services (NAICS 5417) and Industrial Machinery Manufacturing (NAICS 3332). Both sectors are also identified within Light Manufacturing and have LQ's of 1.97 and 1.91, respectively.

Frameworks

The established project frameworks will remain the same. They are in line with the statewide priorities of the GO Virginia Board

Framework Benchmarks

Through the research done for this plan update, some forward looking metrics and related sources have now been identified to help benchmark future growth and plan impact.



Talent Development

Credentials

An obvious source for tracking credentials is the regional community colleges. The following information was collated from information provided by GCC, LFCC, and PVCC. Collectively, these community colleges offer 235 distinct credentials in these areas: Agriculture, Food and Natural Resources; Architecture and Construction; Business, Management and Administration; Finance; Health Science; Information Technology; Manufacturing; Science, Technology, Engineering and Mathematics; and, Transportation,

Distribution and Logistics. Sixty one of the offered credentials can be identified as serving Region 9 Target Industries, including:

- Food & Beverage Manufacturing -1
- Financial & Business Services - 18
- Information Technology – 20
- Manufacturing – 22
- Biotechnology – 0

In the coming year, a General Certificate in Distilling will be added by PVCC and GCC targeting the Food and Beverage Manufacturing Industry. These additional certificates are supported by the Crafting Higher Paying Jobs and Adult Beverage Exports project.

Program/Degree Completions

Data available from JOBS EQ for 2016-2017 Academic Year indicates that there were 11,203 total academic awards. In this case, “awards” represent a wide range of achievements from a certificate requiring less than one year to earn to a doctorate level degree.

Among post-secondary programs at schools located in Region 9, a sampling of awards most linked to occupations relevant to GO Virginia Region 9 Clusters was developed. Note that some occupations serve more than one cluster, so they are counted twice. For example, a Chemistry award may support an occupations in Biotech and Light Manufacturing. There were 1,765 awards related to the Biomedical and Biotechnology; 2,454 were related to Financial and Business Services Industry; 2,422 were related to Food and Beverage Manufacturing; 2,304 were related to Information Technology; and, 1,968 were related to Light Manufacturing.

Internships and Apprenticeships

Sources for region wide internship and apprenticeship data were not identified. However, in seeking this data, the Council engaged with several partners who track some of this information and will continue working with them for finding sources. This challenge also presents an opportunity for developing a regional project proposal

For example, the Department of Labor and Industry, Division of Registered Apprenticeships provided the following summary as of June 24, 2019. At this time, we do not have information on what industries are targeted through these apprenticeships.

FIPS Code	County	#Sponsors	#Apprentices
003	Albemarle	24	54
007	Culpeper	22	70
065	Fluvanna	11	34
079	Greene	2	5
109	Louisa	30	37
113	Madison	2	7
125	Nelson	7	22
137	Orange	12	19
540	Charlottesville	60	291
061	Fauquier	12	26
	TOTAL	182	565



Startups/Innovation/Commercialization (Entrepreneurship Ecosystem)

Patents Awarded

The TEconomy Entrepreneurship Ecosystem Assessment Presentation (TEconomy Assessment) for Region 9 (December 2018) indicates a significant level of patent activity each year. Though the number has dropped in 2017 to 421 from 567 in 2016, the number has remained above those reported in Virginia, as well as the US. As noted in the Assessment, the leading areas of patent activity from 2010 to 2017 has been in IT. Biotech is also well represented. Per the TEconomy Assessment, UVA generates around 30 plus patents per year. More specifically, UVA Licensing and Ventures Group (UVA-LVG) reports that 38, 43 and 59 patents issued for 2016, 2017, 2018 respectively. The UVA LVG data does not stipulate where these patents were issued.

Region 9	2014	2015	2016	2017
Patent Counts	459	477	567	421

New Business Formations

Region 9 new business formation rates were higher than the US and Virginia in 2007. However, formation rates have dropped off more sharply than Virginia and the US since about 2010. Region 9 has continued to trail Virginia since that time through 2017.

According to the BDRC Profile of Startup Activity in Region slide, included in the TEconomy Assessment, the number of startups in traded sector industries from 2007 to 2017 dropped from a high of 370 in 2007 to 148 in 2017. The average number of startups for that same time period was 234.

UVA -LVG reported five new ventures were created in 2016, seven were created in 2017 and three were reported for 2018. This information does not state where these ventures were created.

Licenses Generated Through Commercialized Research Increase in Investment/Funders

According to the Commercial Viability slide from the TEconomy Assessment, UVA generates an average licenses/options executed per \$10,000,000 of University Research from 2014-2016 of 1.81 in GO Virginia Region 9, which is better than the rest of Virginia at 1.12 and the US at 1.14.

UVA -LVG has provided key metrics they have tracked from 2006 to 2018. The information is included in the Appendix. Moving forward, UVA LVG intends to begin surveying for dollars invested in UVA LVG Seed Fund portfolio companies (alongside or subsequent to UVA LVG investments)(by fiscal year), and dollars raised (by fiscal year) by UVA LVG portfolio companies.



Growing Existing Businesses (Scale-Up Existing Clusters)

Number of Businesses Existing After 5 Years

According to the BDRC Profile of Startup Activity Trends slide in the TEconomy Assessment, of the 277 startups in traded sector industries from 2012, 132 still existed five years later in 2017 and employed 878.

Growth of Jobs from Small and Mid-Sized Companies

The number of jobs increased by 22,779 from 2016 to 2018 (YourEconomy.org). The largest growth in the region came from businesses with 2-9 Employees with 2,486 (5%) increase with growth in all localities in Region 9. Businesses with 100 - 499 added the second highest number of new employees for that time period at 2,362 (7%). However, this growth came primarily from Albemarle County and the City of Charlottesville, whereas, most other localities experienced a decline of jobs in that group. Businesses with 10-99 employees lost a cumulative of 1,309 jobs (2%) mostly driven by losses in the Counties of Albemarle, Culpeper, and Nelson and the City of Charlottesville.

New Clusters

Over the past two years, several opportunities have arisen that seemed to demonstrate economic opportunities in the region or sub-regions of GO Virginia Region 9. In some cases, specific projects were discussed but were unable to meet the guidelines established by the GO Virginia Board, in other cases the right project wasn't identified. These industries are being mentioned as they could present possibilities down the road with further empirical study. They are Hemp, Renewable Energy, Environmental Sustainability, and, Food Systems. Further study could be considered to determine the potential of these industries to make a transformational impact in the region through higher paying jobs in the traded sector.



Site Development

The Central Virginia Partnership, as the support organization for Region 9, has served as a critical partner in tracking and partnering to support regional Site Development. The Central Virginia Partnership and regional economic developers will continue to collaborate in updating site related metrics. The information in the table includes outcomes of the Central Virginia Site Readiness ECB project but does not yet include the 700 acre Regional Business Park project approved June 2019.

Region 9	As of August 2017	August 2017 to 2018
# of Tier 4 Sites	0	4
# Tier 4 Sites > 100 acres	0	2
# of Tier 4 Site Acres		634
# of Acres moved up at least one tier in Virginia Business Ready Site Program	n/a	979
# of Counties with Tier 4 Sites	0	3
# of Acres characterized	147	979
# of Sites characterized	1	10

Growth Plan Opportunities - Review and Update

The following is a review of grant and regional activity that supported the opportunities identified in the 2017 Plan, as well as rationale for the relevancy of those opportunities going forward. Updated Opportunities are also presented that will drive project development and activities over the next few years.



Talent Development

Local government and businesses are increasingly more aware of the importance to strategically cultivate a talented workforce. For example, the first project approved by the Region 9 Council was a collaboration between businesses and localities to develop the George Washington Carver Piedmont Technical Education Center (GWC PTEC) to host a welding certification program and a machinist's certification program. Graduates can expect to earn more than the average wage in the area it is located.

2017 Growth Plan - Opportunities

Develop Career Explanation and Awareness. At this time, working with high school students was not identified as a priority in the region. As regional and strategic talent development programs are in discussion, this is expected to change.

Strengthen Communication within the Talent Development System. The Virginia Career Works - Piedmont Region (VCW-Piedmont), formerly known as the Piedmont Workforce Network, has been through rebranding and capacity challenges. Therefore timing has not been right for a leadership role. Other partnership structures for driving a talent development system should be considered, at this time.

Develop Sustainable Sector-Based Strategies to Implement Talent Solutions. Individual companies are beginning to seek talent solutions and are reaching out to localities and the Central Virginia Partnership.

Develop and Promote Career Pathways. Without clear talent solutions developed for target industries, it was premature to address career pathways. However, some activity has occurred through community colleges, VCW-Piedmont and UVA. For example, in 2018 UVA's Office of Executive Vice President and Provost, Dual Career Program, has launched a website to assist faculty and employee partners connect with regional employers that typically offer higher paying jobs. The resource, www.Embarkcva.org, is community facing and available to all in the region. The Central Virginia Partnership links to the resource from their website.

2019 Growth Plan Update - Opportunities

Though some progress has been made in developing partnerships and resources for strategic talent development issues, much can be done. The Council will ensure activities align with SCHEV credentialing and the VCW-Piedmont Local Plan.

Support development of a regional workforce project to convene stakeholders for developing regional target sector based strategies.

Support growth of Information Technology, as well as all other target sectors, through a Tech Talent pipeline initiative.

Evaluate how credentialing, apprenticeship and/or internship programs for target industries could support higher paying jobs and/or growth of the traded sector.

Continue supporting and monitoring Talent Development projects including George Washington Carver-Piedmont Technical Education Center (GWC-PTEC), Central Virginia Cybersecurity, and Crafting Higher Paying Jobs and Adult Beverage Exports.



Growing Existing Businesses (Scale-Up Existing Clusters)

Projects awarded in any of the other three frameworks will likely serve existing businesses. However, existing businesses are so important to the region specific opportunities are being recognized.

2017 Growth Plan - Opportunities

Establish a Broadband Partnership. Broadband access is a critical economic development issue in most Region 9 localities, however, the GO Virginia Board is not funding such initiatives, at this time.

Concentrate on Innovation Corridor Branding. The GO Virginia Board does not fund projects for economic development marketing. Thus, instead, the Region 9 Council voted to refer to Region 9 as the Piedmont Opportunity Corridor and to use the moniker regularly. Also, the Council believes that initiatives that support the regional entrepreneurship ecosystem will advance the region's reputation as an area of innovation.

Harness Regional Assets to Develop and Promote Biotech Hub. The CvilleBioHub enhanced capacity grant is the first step in strengthening an organization that can likely lead this effort as a primary stakeholder.

2019 Growth Plan Update - Opportunities

More work can be done to identify needs of regional clusters for growing higher paying jobs and exports.

Support growth of biotechnology cluster to attain a critical mass of business, talent and intellectual property.

Support development of a large amount of new square footage serving the Biotech industry in a strategically concentrated area including wet lab space.

Identify scale-up opportunities in other targeted sectors, such as export growth for the Food & Beverage Manufacturing, Light Manufacturing, and Information Technology/Communications.

Monitor the opportunity for supporting broadband initiatives as the access to broadband is a critical need in most Region 9 localities.



Startups/Innovation/Commercialization (Entrepreneurship Ecosystem)

The Council has awarded three entrepreneurship related grants that are addressing some opportunities identified in the TEconomy Region 9 Assessment including: the Catalyst Accelerator Program, the Young Entrepreneurs Resource Guide, and CvilleBioHub, in addition to a Council Planning Grant to develop a business plan for an entrepreneurship ecosystem “gateway”, currently referred to as the “Venture Hub”. These projects were all approved to advance the region’s entrepreneurship ecosystem. The Council has decided to defer applying to the GO Virginia Board for entrepreneurship investment funds until the fall of 2019 when these projects will have advanced further.

2017 Growth Plan - Opportunities

Grow Entrepreneurship Ecosystem. As noted above, there has been significant interest and discussion about entrepreneurship and innovation opportunities in the region. The TEconomy Entrepreneurship Ecosystem Assessment for Region 9 was also completed in 2018.

Provide Tax Incentives for Investments in Local Startups. This recommendation has been incorporated into the opportunities outlined in the TEconomy Assessment for Region 9.

Provide Additional Capital for Expansion. This recommendation has been incorporated into the opportunities outlined in the TEconomy Assessment for Region 9.

2019 Growth Plan Update - Opportunities

The area of Startups/Innovation/Commercialization continues to be an area of major interest to the entire region. One challenge in the coming year will be balancing the needs and priorities for more rural counties with more populated areas. The Council will ensure alignment with the Virginia Research Investment Committee (VRIC), as appropriate.

Facilitate initiatives that advance opportunities outlined in the TEconomy Region 9 Assessment.

Review the opportunity for developing a plan to set aside specific Per Capita funds to invest in the entrepreneurship ecosystem as outlined by the GO Virginia Board.

Support development of a rural entrepreneurship coalition in rural counties.



Sites

Much progress was made in addressing site development since the 2017 Growth Plan was published. In fact, all opportunities identified in the plan were advanced. Sites in eight counties were collectively evaluated by one project led by the Central Virginia Partnership. Through this project, 485 acres in the region were moved up the site readiness scale to credible economic development sites. One of those sites is now designated a Tier 4 site. Two of the sites are over 100 acres and thus qualify for the Virginia Business Ready Sites Program (VBRSP).

2017 Growth Plan - Opportunities

Site Improvements for Specified Sites. Using with the sites assessments completed as part of the August 2017 Plan, the Central Virginia Partnership collaborated with regional partners to develop a “next-step” regional assessment project. The Central Virginia Site Readiness project was awarded \$54,225 for an enhanced capacity grant. Working with Draper Aden and ECS, sites in eight counties were evaluated and received some combination of review and evaluation to move them to credible economic development sites. This work included: environmental site assessment; wetlands delineation; geotechnical subsurface exploration; threatened and endangered species review; cultural historic resources review; final report; and site characterization letters to Virginia Economic Development Partnership (VEDP). Through this project, 485 acres in the region were moved up the site readiness scale and to credible economic development sites. One site, at the TE Lee Industrial Park in Orange County, is now designated a Tier 4 site. Two of the sites are over 100 acres, and as a result of this project, now qualify for VBRSP funding.

Better Leverage University of Virginia Research Park and Create & Promote Other Sites.

Because of the renewed regional focus on site development there were three additional sites in the region that were concurrently advanced to Tier 4: a UVA Research Park site in Albemarle County and Crown Jewel and Wingspread sites in Culpeper County. Therefore, since the beginning of the enhanced capacity grant – the region went from zero Tier 4 sites to four Tier 4 sites.

Create & Promote Other Sites - Regional Business Park. Significant progress has been made this year towards establishing a regional business park in the future. After much hard work and deliberation over the past year, in January, Louisa County Supervisors decided to purchase just under 700 acres at I-64 Shannon Hill exit with a goal of developing it into a regional business park. To gain regional support for the park, the Central Virginia Partnership has joined forces with the County to meet with County Administrators/City Manager, local economic developers, elected officials and Economic Development Authorities. Louisa County has submitted a GO Virginia grant application for \$600,850, which was approved by Region 9 Council and the GO Virginia Board. The Partnership will contribute to this project on behalf of five localities. To date, the

County has spent \$2.6 million to purchase the property. The County has closed on the property, and rezoning has been approved.

2019 Growth Plan Update - Opportunities

Site readiness continues to be a major weakness in the Central Virginia region. To create higher-paying jobs and support economic diversification, construction-ready sites must be available to recruit new companies in targeted industries and help retain and grow existing companies in those industries.

In general, the Council should consider the region's best opportunities for joint site and infrastructure development when establishing their approach. Given that all sites in the Central Virginia Site Readiness ECB project were assigned tiers, advancing those sites to at least Tier 4 should be considered. The Council should also ensure that full advantage is taken of the Virginia Business Ready Sites Program and VEDP's current site characterization effort of 25+ acre sites.

Encourage and support the creation of a Regional Industrial Facilities Authority (RIFA) or equivalent regional collaborative partnership, as appropriate to support regional site development.

In collaboration with partners, outline a regional approach to address the region's site readiness needs by advancing sites through the VBRSP.

Support and encourage the continued development of the regional business park in Louisa County.

Advance further development of current sites and seek opportunities for regional collaboration on new sites.



Other

2017 Growth Plan - Opportunities

Realign organizational focus within the Central Virginia Partnership. The Central Virginia Partnership will have completed a new strategic plan by the publication of this report. As the support organization for GO Virginia Region 9, the opportunities and focus of the regional council were taken into consideration to optimize opportunities possible because of the GO Virginia initiative. Once published, this plan will support additional activities in this region.

Pursue Organizational Funding & Capacity Building Mechanisms for Plan Implementation.

Throughout the past year, the Region 9 Council along with the Central Virginia Partnership have met with County Administrators, Economic Development Offices, and Economic Development Authorities to promote and support the locality support for projects.

2019 Growth Plan Update - Opportunities

Review the 2019 Central Virginia Partnership Strategic Plan to identify areas for collaboration and efficiencies to drive the creation of high paying jobs and growing the traded sector in Region 9.

Explore opportunities to assess and support the development of emerging industries that could help the region grow high paying jobs and expand the traded sector (i.e. Hemp Industry, Renewable Energy Industry, and Environmental Sustainability Industry).

Partnerships

It has become all too apparent how important collaborative relationships with higher education, business and local government are to advancing GO Virginia projects. In Region 9, many relationships have already been in place through the Council's support organization, the Central Virginia Partnership. Additional partners are continually being identified to help advance opportunities in the plan.

The Central Virginia Partnership for Economic Development, as the support organization for Region 9, has been a critical supporter of the Region 9 Council. The regional council has benefitted greatly from the relationships already established by the Partnership throughout most of the Council footprint. For example, the regional economic development directors have been meeting on a regular basis and have been up to speed on the regional Council development, policy directions, priorities and projects. GO Virginia staff regularly attend these meetings to stay engaged.

County Administrators and Economic Development Departments – To date, localities have provided over \$3,365,150 in cash or in-kind toward projects in Region 9. Several Administrators and Economic Development Directors serve on the Central Virginia Partnership Board and/or the Region 9 Council. Many were part of the team that helped stand up the Region 9 Council and develop the 2017 Growth Plan, as well. Council and Partnership staff have met with County administrators and economic developers together on a yearly basis to ensure strategic initiatives are aligned, as much as possible. All eleven localities in Region 9 have participated in at least one grant proposal by either serving as the applicant, funding match requirements, or writing Letters of Support.

Planning Districts and VCW-Piedmont Region - The footprint of Planning District 9 and Planning District 10 together, and the entire territory of the VCW Piedmont Region align exactly with GO Virginia Region 9 footprint. These partners are a great asset for their knowledge of the region and as subject matter experts.

Private Sector- At this time, more than eleven businesses have been engaged directly with projects and provided over \$430,000 in project funding. Businesses are also serving on project advisory committees, as is the case for the Central Virginia Cybersecurity project, or providing matching funding and active partners, as is the case with the Crafting Higher Paying Jobs and Adult Beverage Exports Project. Private businesses have played a key role in supporting the CvilleBioHub and the George Washington Carver – Piedmont Technical Education Center projects, as well. In the coming year, as the region reviews Talent Development projects, substantially more business partners will be identified.

Higher Education – Cumulatively, higher education has supported five projects with \$425,000 in match funding.

Community Colleges – The three community colleges in Region 9 include, Germanna Community Colleges, Lord Fairfax Community College, and, Piedmont Virginia Community College. All three community colleges have been involved in regional projects and have been applicants on two projects. Two of the three community college presidents currently serve on the Region 9 Council. Their participation on the Council has been critical in talent development projects as well as understanding regional credentialing.

University of Virginia - UVA has been an important partner on several projects that are currently underway and will continue to be engaged in collaborative proposals. UVA's assistant vice president for economic development serves on the Region 9 Council. Other UVA faculty and staff are also engaged with the Council as applicants, subject matter experts, or supporters. For example, the Batten Institute for Entrepreneurship and Innovation at the Darden School of Business, i-Lab, the UVA Licensing and Ventures Group, and, UVA Career Services each have provided expertise on framework metrics or projects.

Regional Chambers of Commerce - Chambers and other convening organizations in target markets are the first avenue for engaging businesses and identifying potential council members. Since inception, regional chambers have been engaged in plan development. These organizations serve as a gateway mechanism to engage with business communities, as well.

Department of Housing and Community Development (DHCD) – As the support organization for the GO Virginia Board, DHCD is the first stop for determining project eligibility and obtaining feedback to improve project proposals. The DHCD team has been a true partner in navigating policy and helping to advance regional and programmatic objectives.

Non-profits and other organizations – These groups, specifically those engaged in the entrepreneurship ecosystem, also continually participate in conversations about potential projects and opportunities, including Fauquier Enterprise Centers, GMU Enterprise Center, CvilleBioHub, Blue Morning, CBIC, CIC, and Central Virginia Small Business Development Center, etc.

Project Development + Pipeline

Developing strong projects and project pipeline has been a top priority of the Region 9 Council since the Growth Plan was published in August 2017. In fact, the two community events where the Growth Plan was launched in August 2017 were the first of many steps taken to engage stakeholders that could help develop and drive projects.

The Region 9 Council has developed a proposal review process that has effectively supported eight projects from submission to approval. To comply with the GO Virginia Growth and Opportunity Act, applicants are to stipulate in their applications how their project aligns with the Region 9 Growth Plan in addition to the GO Virginia statewide objectives of creating higher paying jobs and developing new revenue from out of state resources. Additionally, each project is scored by subject matter experts serving on the Council using criteria established by the GO Virginia Board.

The Council has developed additional means for promoting regional GO Virginia project opportunities and discussions. The Council has established a website (www.GOVirginia9.org) and a LinkedIn account ([Linkedin.com/company/go-virginia-regional-9-council/](https://www.linkedin.com/company/go-virginia-regional-9-council/)) to engage stakeholders and share important information. Additionally, the Council collaborated with DHCD to promote statewide GO Virginia initiative during the Entrepreneurship Ecosystem Conference held on Friday, April 12 in Charlottesville, during the Tom Tom Founders Festival. Over 100 individuals attended a panel moderated by Tom Click, Region 9 Council Chair, titled: *“Envisioning a Statewide Entrepreneurship Ecosystem from the Ground Up.”* The panel included, John O. “Dubby” Wynne, presiding Chair, GO Virginia Board. The programming brought national attention to GO Virginia activities as well as engaged regional staff in discussions around ecosystems.

The process employed for applications is designed to ensure that those going through the application process are aligned with both Council and Board objectives. Staff will collaborate and support the applicant to ensure each proposal is best positioned to support required outcomes before the Council Task Force members review. Before a vote at a council meeting, all proposals are reviewed by a minimum of three subject matter experts from the Council. All members have access to review the proposal prior to a discussion and vote. An additional best practice is frequent communication with DHCD staff for feedback.

Additional steps the Council takes to drive projects is ensuring that Enhanced Capacity Building grants are on track for subsequent and larger implementation proposals, tracking all approved projects to identify best practices and potential partnerships for inter-regional proposals, and, expanding public engagement outreach.

The Central Virginia Site Readiness ECB grant was the first grant completed in Region 9. This project has directly supported the conversation and understanding of the importance of site development in our region. In fact, activities related to this project have helped drive the regional support for the Regional Business Park project approved in June 2019 as well as advanced the conversations for supporting a Regional Industrial Facility Authority (RIFA), or equivalent regional collaborative partnership, in Region 9.

The CvilleBioHub ECB grant has enabled that organization to double the number of identified and engaged biotech related businesses in this area and perform crucial data analysis on this industry. A subsequent grant is expected in the Fall 2019 that will drive growth.

The Central Virginia Cybersecurity Partnership is advancing a cybersecurity curriculum across three regional community colleges. A follow on project will likely be for regional implementation or interregional expansion.

For the most part, all successful proposals to date, have been brought forward through the networks of Council members, staff, and others connected to the Region 9 Council. Going forward the Council expects to drive more community and business engagement through regional outreach efforts.

Since 2017, the Region 9 Council has approved three ECB grants. One grant, the Central Virginia Site Readiness project, is completed and has set the stage for additional site projects. The Central Virginia Cybersecurity project and the CvilleBioHub project are both making strides and follow-on grant proposals are expected.

Potential Sources of Matching Funds

Throughout the past year, in collaboration with the Central Virginia Partnership, GO Virginia staff has met with County Administrators and other stakeholders to discuss the possibility to set aside funds for potential GO Virginia projects in addition to promoting the GO Virginia opportunity.

The Council has also provided a link to the Grants Database on the GO Virginia website (govirginia.org). Additionally, the Council will explore possible opportunities with private foundations for supporting regional projects.

Other Initiatives to Grow Higher Paying Jobs

While the GO Virginia Region 9 Council is the only regionally focused organization with funding available to incentivize collaboration to grow higher paying jobs, other initiatives exist that support or complement the efforts of the Council.

During the past year, the Central Virginia Partnership has undergone a strategic planning process that was completed in June 2019. The Council will review opportunities for synergy and collaboration. Other plans meaningful to growing jobs in this region include: the Local Plan for Virginia Career Works – Piedmont Region, county economic development strategic plans, and the University of Virginia (UVA) strategic plan in development.

The VCW-Piedmont Region Local Plan (vcwpiedmont.com) identifies four priority industries for workforce development including: Business & Financial Services, Information Technology, Health Services, and Manufacturing/Distribution. With the exception of Health Services, these industries align with the target industries in Region 9. Additionally, the Council recognizes that VCW – Piedmont Region programming, at this time, targets a range of jobs supporting these industries that are below the average annual wages in the region and therefore are not high paying jobs as defined by GO Virginia. That said, efforts align to support important industries.

Also, of importance to this region and the Commonwealth, the UVA Board of Visitors has endorsed the draft goals and sub-goals of a new strategic plan. Within those sub-goals is a statement to “Lead economic development through academic discovery and entrepreneurship.” Clearly, more opportunities will arise from this stated direction as this plan develops. In the meantime, the mission of UVA Economic Development (economicdevelopment.virginia.edu) is supportive and critical to partnerships that support growth in our region.

Stakeholder Engagement for Growth Plan Update

At the February 2019 Region 9 Council Meeting, Council members and guests in the audience participated in task force breakout sessions to review successes in 2017 and to recommend suggestions for new opportunities. The group discussions were focused on the four framework areas: Sites, Talent Development, Growing Existing Businesses, and Innovation & Entrepreneurship. Each group reported out and feedback was discussed.

Staff at the Central Virginia Partnership provided data and feedback.

The Region 9 Council Executive Committee provided input ahead of the May 2, 2019 Council meeting where a draft plan was presented to the Council along with a stakeholder engagement plan and

timeline. The feedback from that meeting was incorporated into a new draft and then the draft report was posted for public comment.

The plan was posted on the Region 9 website and access to the plan for comment was promoted through all regional economic development partners, planning districts, grant recipients, chambers of commerce, etc. The opportunity to comment on the draft was also shared via the Region 9 LinkedIn page.

After assimilating public comments, the final draft was presented to the Executive Committee for final approval on July 22, 2109.

Metrics and Data Sources Table

In order to facilitate the process of updating metrics over time, this table has been prepared to summarize data sources. Specific datasets can also be found in the Appendix.

General	
Annual change in average annual wages	JOBS EQ
Growth of key employment sectors	JOBS EQ
Job growth year by year and cumulative	JOBS EQ
How changes in employment and wage patterns have impacted regional growth	JOBS EQ
Change in the number of jobs supported through revenues derived from out-of-state sources (targeted traded sector)	JOBS EQ
Workforce Gap Analysis	JOBS EQ
Frameworks	
TALENT DEVELOPMENT	
# of Credentials	PVCC, GCC, LFCC
# of Program /Degree Completion in areas tied to regional clusters	JOBS EQ
# of Internships & Apprenticeships offered	Division of Registered Apprenticeship, Department of Labor and Industry
START UPS	
# of Patents Awarded, new business formations	TEconomy Assessment Presentation Region 9
# Licenses Generated Through Commercialized Research Increase In Investment/Funders	UVA LVG
SCALE UPS	
# of Business Existing after 5 years	TEconomy Assessment Presentation Region 9
Growth of Jobs from Small and Mid-sized companies	Youreconomy.org
Increase in Clusters	JOBS EQ
New Clusters	JOBS EQ
SITE DEVELOPMENT	
# of sites characterized	Central Virginia Partnership; Regional Economic Development Partners
# of Tier 4 or higher sites	Central Virginia Partnership; Regional Economic Development Partners
Total acreage of sites characterized	Central Virginia Partnership; Regional Economic Development Partners
Localities participating in a RIFA/revenue sharing agreement	Central Virginia Partnership; Regional Economic Development Partners
Increase in prospect inquiries	Central Virginia Partnership; Regional Economic Development Partners

GO Virginia Region 9
Growth & Diversification Plan Update
August 2019

DATA APPENDIX

Data

- I. GO Virginia Region 9 Industry Snapshot – JOBS-EQ, 2018Q2
- II. GO Virginia Region 9 Economic Overview – JOBS-EQ, May 2019
- III. GO Virginia Region 9 Average Annual Wages, (2003-2018) – JOBS-EQ, 2018Q4
- IV. GO Virginia Region 9 Employment by Target Industries (2001-2018) – JOBS-EQ
- V. GO Virginia Region 9 Awards – JOBS-EQ, 2016 to 2017 Academic Year
- VI. GO Virginia Region 9 Postsecondary Programs Linked to Target Industries – JOBS-EQ
- VII. GO Virginia Region 9 Industry Employment by NAICS in Target Industries (2013-2018) - JOBS-EQ
- VIII. GO Virginia Region 9 Community College Credentials related to Target Industries, as provided by PVCC, GCC and LFCC
- IX. Patent Activity Across Industry and Research Institutions Slide, TEconomy Assessment Presentation
- X. Commercial Viability Slide, TEconomy Benchmark Presentation
- XI. UVA LVG Key Metrics (2016-2018) – University of Virginia, Licensing and Venture Group
- XII. BDRC Profile of Startup Activity Trends in Region Slide, TEconomy Assessment Presentation
- XIII. Overall New Business Formation for Region Based on BDRC Firm Level Data Slide, TEconomy Assessment Presentation
- XIV. Year Over Year Survival Rate Trends In Regional Traded Sector Startups Slide – TEconomy Assessment Presentation
- XV. GO Virginia Region 9 Employment by Business Size (2016-2018) – Youreconomy.org
- XVI. Potential Average Annual Occupation Gaps over 10 Years in Piedmont Workforce Network (WDA 6)

Industry Snapshot in GoVirginia - Region 9, 2018q2											
NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ			Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
11	Agriculture, Forestry, Fishing and Hunting	4,713	\$23,528	1.83	8	0.0%	2,654	1,109	1,458	87	0.4%
21	Mining, Quarrying, and Oil and Gas Extraction	277	\$58,532	0.35	4	0.3%	129	45	93	-9	-0.6%
22	Utilities	1,948	\$104,918	1.98	74	0.8%	896	319	562	14	0.1%
23	Construction	14,107	\$48,912	1.34	1,789	2.7%	8,070	2,564	4,575	932	1.3%
31	Manufacturing	9,400	\$53,505	0.61	1,154	2.7%	4,735	1,800	3,070	-135	-0.3%
42	Wholesale Trade	3,483	\$57,169	0.48	39	0.2%	1,902	696	1,148	58	0.3%
44	Retail Trade	20,478	\$28,561	1.03	1,441	1.5%	14,386	6,108	7,719	559	0.5%
48	Transportation and Warehousing	4,288	\$57,622	0.52	143	0.7%	2,448	985	1,321	142	0.7%
51	Information	3,266	\$79,963	0.89	-94	-0.6%	1,539	575	1,003	-39	-0.2%
52	Finance and Insurance	3,954	\$95,213	0.53	413	2.2%	1,990	721	1,165	104	0.5%
53	Real Estate and Rental and Leasing	3,053	\$52,351	0.95	128	0.9%	1,645	717	852	76	0.5%
54	Professional, Scientific, and Technical Services	12,385	\$75,247	1.00	1,047	1.8%	6,296	2,048	3,420	828	1.3%
55	Management of Companies and Enterprises	2,106	\$85,762	0.76	-153	-1.4%	1,040	360	608	71	0.7%
56	Administrative and Support and Waste Management and Remediation Services	8,555	\$36,798	0.71	1,092	2.8%	5,500	2,144	2,905	450	1.0%
61	Educational Services	26,303	\$47,522	1.71	329	0.3%	13,327	5,954	6,407	966	0.7%
62	Health Care and Social Assistance	28,092	\$54,687	1.05	2,612	2.0%	16,534	6,774	7,013	2,746	1.9%
71	Arts, Entertainment, and Recreation	4,409	\$26,880	1.18	365	1.7%	3,383	1,420	1,740	223	1.0%
72	Accommodation and Food Services	17,393	\$19,775	1.03	2,483	3.1%	14,999	6,342	7,983	674	0.8%
81	Other Services (except Public Administration)	10,709	\$36,857	1.30	1,243	2.5%	6,443	2,810	3,344	289	0.5%
92	Public Administration	7,739	\$52,908	0.88	469	1.3%	3,711	1,521	2,062	128	0.3%
99	Unclassified	482	\$43,469	1.81	482	n/a	298	117	160	21	0.8%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

[Source: JobsEQ®](#)

Data as of 2018Q2

Note: Figures may not sum due to rounding.

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Industry Snapshot of GOVA9 Biomedical and Biotechnology in GoVirginia - Region 9, 2018q2

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ			Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
3254	Pharmaceutical and Medicine Manufacturing	69	\$100,961	0.20	10	3.2%	33	11	22	0	-0.1%
3332	Industrial Machinery Manufacturing	271	\$56,510	1.91	16	1.2%	112	45	82	-15	-1.1%
3333	Commercial and Service Industry Machinery Manufacturing	82	\$70,143	0.74	49	19.8%	35	14	25	-4	-1.1%
	Navigational, Measuring, Electromedical, and Control										
3345	Instruments Manufacturing	612	\$90,809	1.26	-65	-2.0%	242	96	171	-25	-0.8%
3391	Medical Equipment and Supplies Manufacturing	269	\$64,707	0.71	34	2.7%	143	52	86	5	0.3%
5417	Scientific Research and Development Services	1,667	\$84,300	1.97	235	3.1%	832	241	476	116	1.4%
5622	Waste Treatment and Disposal	125	\$38,570	0.86	-53	-6.8%	53	23	39	-9	-1.5%
6215	Medical and Diagnostic Laboratories	79	\$50,929	0.23	31	10.4%	44	15	19	10	2.4%
	GOVA9 Biomedical and Biotechnology	3,173	\$78,894	1.13	257	1.7%	0	0	0	81	0.5%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

[Source: JobsEQ®](#)

Data as of 2018Q2

Note: Figures may not sum due to rounding.

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Industry Snapshot of GOVA9 Financial and Business Services in GoVirginia - Region 9, 2018q2

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ	Empl	Region	Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
3231	Printing and Related Support Activities	439	\$32,645	0.80	171	10.3%	202	94	138	-31	-1.4%
5182	Data Processing, Hosting, and Related Services	347	\$102,719	0.84	-37	-2.0%	176	52	101	23	1.3%
5191	Other Information Services	435	\$57,192	0.80	42	2.0%	302	76	138	88	3.8%
5222	Nondepository Credit Intermediation	214	\$73,952	0.28	52	5.7%	125	39	67	19	1.7%
5223	Activities Related to Credit Intermediation	128	\$78,961	0.34	-10	-1.5%	80	25	41	14	2.1%
	Securities and Commodity Contracts Intermediation and										
5231	Brokerage	219	\$167,736	0.40	-42	-3.4%	98	32	65	0	0.0%
5239	Other Financial Investment Activities	547	\$225,491	0.86	76	3.0%	302	89	159	54	1.9%
5241	Insurance Carriers	944	\$67,867	0.65	482	15.3%	409	161	262	-14	-0.3%
	Agencies, Brokerages, and Other Insurance Related										
5242	Activities	719	\$77,291	0.47	33	0.9%	391	146	209	35	1.0%
5251	Insurance and Employee Benefit Funds	3	\$102,051	0.44	-2	-8.6%	2	1	1	0	1.1%
5259	Other Investment Pools and Funds	34	\$138,412	3.48	-31	-12.2%	18	7	10	2	1.1%
5311	Lessors of Real Estate	701	\$42,701	0.90	183	6.2%	364	167	203	-6	-0.2%
5313	Activities Related to Real Estate	952	\$55,409	0.92	-91	-1.8%	575	224	253	97	2.0%
	Lessors of Nonfinancial Intangible Assets (except										
5331	Copyrighted Works)	5	\$95,566	0.16	-1	-4.6%	2	1	1	0	0.3%
5411	Legal Services	1,193	\$68,488	0.81	103	1.8%	488	208	264	16	0.3%
	Accounting, Tax Preparation, Bookkeeping, and Payroll										
5412	Services	1,128	\$46,827	0.83	-17	-0.3%	598	227	324	47	0.8%
5413	Architectural, Engineering, and Related Services	1,251	\$65,455	0.66	71	1.2%	585	191	339	56	0.9%
5414	Specialized Design Services	236	\$48,946	0.90	-46	-3.5%	120	45	66	8	0.7%
5415	Computer Systems Design and Related Services	2,774	\$99,752	1.06	749	6.5%	1,384	338	765	280	1.9%
	Management, Scientific, and Technical Consulting										
5416	Services	1,949	\$86,217	0.96	-213	-2.1%	1,095	334	580	181	1.8%
5418	Advertising, Public Relations, and Related Services	330	\$44,818	0.52	-188	-8.6%	180	68	105	7	0.4%
5419	Other Professional, Scientific, and Technical Services	1,855	\$54,935	1.44	352	4.3%	984	364	504	116	1.2%
	GOVA9 Financial and Business Services	16,404	\$76,692	0.81	1,635	2.1%	0	0	0	1,001	1.2%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

Source: JobsEQ®

Data as of 2018Q2

Note: Figures may not sum due to rounding.

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Industry Snapshot of GOVA9 Food and Beverage Manufacturing in GoVirginia - Region 9, 2018q2

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ			Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
3111	Animal Food Manufacturing	28	\$43,234	0.37	18	23.5%	15	6	10	0	0.2%
3112	Grain and Oilseed Milling	35	\$59,729	0.48	9	5.7%	19	7	12	-1	-0.4%
3113	Sugar and Confectionery Product Manufacturing	35	\$22,044	0.37	14	10.5%	20	8	12	-1	-0.5%
	Fruit and Vegetable Preserving and Specialty Food Manufacturing										
3114	Manufacturing	30	\$22,163	0.14	-6	-3.7%	16	7	11	-1	-0.5%
3115	Dairy Product Manufacturing	1	\$32,065	0.01	0	-5.5%	1	0	1	0	0.7%
3116	Animal Slaughtering and Processing	39	\$34,379	0.06	4	2.3%	23	9	14	0	-0.1%
3117	Seafood Product Preparation and Packaging	2	\$55,116	0.05	0	-0.4%	1	0	1	0	0.7%
3118	Bakeries and Tortilla Manufacturing	135	\$18,430	0.34	2	0.3%	89	38	51	1	0.1%
3119	Other Food Manufacturing	102	\$28,236	0.37	47	13.3%	61	23	36	2	0.3%
3121	Beverage Manufacturing	1,750	\$28,695	5.62	800	13.0%	1,069	399	634	37	0.4%
	GOVA9 Food and Beverage Manufacturing	2,157	\$28,660	0.94	887	11.2%	0	0	0	37	0.3%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

[Source: JobsEQ®](#)

Data as of 2018Q2

Note: Figures may not sum due to rounding.

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Industry Snapshot of GOVA9 Information Technology/Communications in GoVirginia - Region 9, 2018q2

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ			Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
2382	Building Equipment Contractors	2,827	\$46,486	1.02	271	2.0%	1,704	519	990	195	1.3%
3332	Industrial Machinery Manufacturing	271	\$56,510	1.91	16	1.2%	112	45	82	-15	-1.1%
3341	Computer and Peripheral Equipment Manufacturing	6	\$139,844	0.03	-7	-15.1%	2	1	2	0	-1.0%
	Semiconductor and Other Electronic Component Manufacturing										
3344	Manufacturing	390	\$114,442	0.89	-106	-4.7%	159	65	112	-18	-0.9%
	Navigational, Measuring, Electromedical, and Control										
3345	Instruments Manufacturing	612	\$90,809	1.26	-65	-2.0%	242	96	171	-25	-0.8%
3353	Electrical Equipment Manufacturing	31	\$54,205	0.18	10	8.3%	14	6	10	-1	-0.7%
3359	Other Electrical Equipment and Component Manufacturing	137	\$69,416	0.80	-41	-5.1%	68	26	44	-2	-0.3%
	Professional and Commercial Equipment and Supplies										
4234	Merchant Wholesalers	139	\$64,856	0.18	-164	-14.4%	64	24	42	-3	-0.4%
	Household Appliances and Electrical and Electronic Goods										
4236	Merchant Wholesalers	148	\$71,499	0.36	-19	-2.4%	72	27	47	-2	-0.3%
5112	Software Publishers	282	\$99,846	0.59	80	6.9%	140	35	79	26	1.8%
5173	Wired and Wireless Telecommunications Carriers	437	\$86,328	0.53	-71	-3.0%	177	68	137	-28	-1.3%
5179	Other Telecommunications	41	\$82,262	0.42	1	0.3%	15	7	13	-4	-2.0%
5182	Data Processing, Hosting, and Related Services	347	\$102,719	0.84	-37	-2.0%	176	52	101	23	1.3%
5415	Computer Systems Design and Related Services	2,774	\$99,752	1.06	749	6.5%	1,384	338	765	280	1.9%
5416	Management, Scientific, and Technical Consulting Services	1,949	\$86,217	0.96	-213	-2.1%	1,095	334	580	181	1.8%
5417	Scientific Research and Development Services	1,667	\$84,300	1.97	235	3.1%	832	241	476	116	1.4%
	GOVA9 Information Technology/Communications	12,059	\$80,339	0.94	640	1.1%	0	0	0	748	1.2%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

Source: JobsEQ®

Data as of 2018Q2

Note: Figures may not sum due to rounding.

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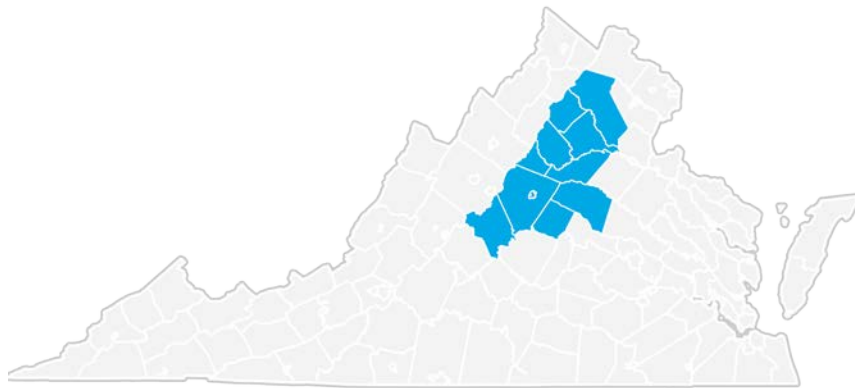
Industry Snapshot of GOVA9 Light Manufacturing in GoVirginia - Region 9, 2018q2											
NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Four Quarters Ending with 2018q2			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			Growth	
		Empl	Avg Ann Wages	LQ	Empl	Region	Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
3111	Animal Food Manufacturing	28	\$43,234	0.37	18	23.5%	15	6	10	0	0.2%
3112	Grain and Oilseed Milling	35	\$59,729	0.48	9	5.7%	19	7	12	-1	-0.4%
3113	Sugar and Confectionery Product Manufacturing	35	\$22,044	0.37	14	10.5%	20	8	12	-1	-0.5%
3121	Beverage Manufacturing	1,750	\$28,695	5.62	800	13.0%	1,069	399	634	37	0.4%
3133	Textile and Fabric Finishing and Fabric Coating Mills	102	\$36,163	2.71	25	5.8%	46	22	32	-9	-1.8%
3141	Textile Furnishings Mills	10	\$29,287	0.15	-9	-12.0%	4	2	3	-1	-1.7%
3149	Other Textile Product Mills	92	\$26,485	1.16	83	61.5%	40	21	26	-8	-1.8%
3152	Cut and Sew Apparel Manufacturing	31	\$22,409	0.24	3	2.1%	17	8	9	0	-0.2%
3211	Sawmills and Wood Preservation	458	\$41,265	3.93	-110	-4.2%	257	94	166	-3	-0.1%
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	71	\$35,641	0.73	36	15.2%	39	14	24	0	0.1%
3219	Other Wood Product Manufacturing	467	\$32,070	1.59	73	3.4%	247	96	157	-6	-0.3%
3221	Pulp, Paper, and Paperboard Mills	1	\$72,915	0.01	1	n/a	0	0	0	0	-1.7%
3222	Converted Paper Product Manufacturing	81	\$45,073	0.25	-47	-8.8%	41	16	27	-2	-0.4%
3231	Printing and Related Support Activities	439	\$32,645	0.80	171	10.3%	202	94	138	-31	-1.4%
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	37	\$63,661	0.85	32	50.3%	16	6	12	-2	-1.2%
3254	Pharmaceutical and Medicine Manufacturing	69	\$100,961	0.20	10	3.2%	33	11	22	0	-0.1%
3259	Other Chemical Product and Preparation Manufacturing	54	\$58,898	0.53	-31	-8.6%	22	9	17	-4	-1.7%
3261	Plastics Product Manufacturing	602	\$93,915	0.85	-59	-1.9%	315	115	206	-7	-0.2%
3271	Clay Product and Refractory Manufacturing	34	\$40,083	0.67	18	17.0%	16	6	11	-1	-0.9%
3272	Glass and Glass Product Manufacturing	44	\$42,012	0.42	30	25.9%	21	9	15	-3	-1.2%
3273	Cement and Concrete Product Manufacturing	235	\$62,938	1.01	-20	-1.6%	120	46	77	-3	-0.2%
3312	Steel Product Manufacturing from Purchased Steel	12	\$47,187	0.18	1	1.5%	6	2	4	0	-0.1%
3315	Foundries	71	\$54,816	0.50	-45	-9.3%	28	12	23	-7	-2.2%
3322	Cutlery and Handtool Manufacturing	52	\$43,627	1.15	-81	-17.1%	25	10	17	-2	-0.6%
3323	Architectural and Structural Metals Manufacturing	37	\$40,974	0.08	5	3.1%	19	7	13	0	-0.1%
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	102	\$40,625	0.23	-73	-10.3%	53	18	34	1	0.2%
3329	Other Fabricated Metal Product Manufacturing	274	\$45,576	0.83	187	25.9%	140	49	91	0	0.0%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	11	\$61,250	0.04	0	-0.4%	6	2	4	0	0.9%
3332	Industrial Machinery Manufacturing	271	\$56,510	1.91	16	1.2%	112	45	82	-15	-1.1%
3333	Commercial and Service Industry Machinery Manufacturing	82	\$70,143	0.74	49	19.8%	35	14	25	-4	-1.1%
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	259	\$47,929	1.64	63	5.8%	120	47	85	-12	-0.9%
3341	Computer and Peripheral Equipment Manufacturing	6	\$139,844	0.03	-7	-15.1%	2	1	2	0	-1.0%
3344	Semiconductor and Other Electronic Component Manufacturing	390	\$114,442	0.89	-106	-4.7%	159	65	112	-18	-0.9%
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	612	\$90,809	1.26	-65	-2.0%	242	96	171	-25	-0.8%
3353	Electrical Equipment Manufacturing	31	\$54,205	0.18	10	8.3%	14	6	10	-1	-0.7%
3359	Other Electrical Equipment and Component Manufacturing	137	\$69,416	0.80	-41	-5.1%	68	26	44	-2	-0.3%
3363	Motor Vehicle Parts Manufacturing	237	\$54,208	0.33	45	4.3%	122	44	79	0	0.0%
3364	Aerospace Product and Parts Manufacturing	387	\$68,856	0.65	95	5.8%	170	60	110	0	0.0%
3366	Ship and Boat Building	2	\$49,788	0.01	-5	-23.0%	1	0	1	0	0.2%
3369	Other Transportation Equipment Manufacturing	36	\$27,726	0.86	8	5.3%	16	7	12	-2	-1.3%
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	492	\$36,615	1.57	-69	-2.6%	256	107	153	-3	-0.1%
3372	Office Furniture (including Fixtures) Manufacturing	139	\$64,855	1.05	59	11.7%	72	28	44	0	0.0%
3379	Other Furniture Related Product Manufacturing	38	\$46,290	0.85	20	15.3%	20	8	13	-1	-0.5%
3391	Medical Equipment and Supplies Manufacturing	269	\$64,707	0.71	34	2.7%	143	52	86	5	0.3%
3399	Other Miscellaneous Manufacturing	254	\$40,910	0.62	1	0.1%	123	49	79	-6	-0.5%
	GOVA9 Light Manufacturing	8,874	\$53,105	0.85	1,147	2.8%	0	0	0	-132	-0.3%
	Total - All Industries	187,140	\$48,331	1.00	15,068	1.7%	112,470	44,651	59,551	8,269	0.9%

Source: JobsEQ®
Data as of 2018Q2
Note: Figures may not sum due to rounding.
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Economic Overview

GO Virginia Region 9

(using Piedmont Workforce Network (WDA 6) footprint)



MapBS&EQ19

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Demographic Profile

The population in the Piedmont Workforce Network (WDA 6) was 420,523 per American Community Survey data for 2013-2017.

The region has a civilian labor force of 213,821 with a participation rate of 62.9%. Of individuals 25 to 64 in the Piedmont Workforce Network (WDA 6), 37.5% have a bachelor's degree or higher which compares with 32.3% in the nation.

The median household income in the Piedmont Workforce Network (WDA 6) is \$69,335 and the median house value is \$287,468.

Summary¹

	Percent			Value		
	Piedmont Workforce Network (WDA 6)	Virginia	USA	Piedmont Workforce Network (WDA 6)	Virginia	USA
Demographics						
Population (ACS)	—	—	—	420,523	8,365,952	321,004,407
Male	48.6%	49.2%	49.2%	204,436	4,113,988	158,018,753
Female	51.4%	50.8%	50.8%	216,087	4,251,964	162,985,654
Median Age ²	—	—	—	40.1	38.0	37.8
Under 18 Years	21.3%	22.3%	22.9%	89,750	1,866,274	73,601,279
18 to 24 Years	10.1%	9.8%	9.7%	42,576	818,913	31,131,484
25 to 34 Years	12.6%	13.9%	13.7%	53,030	1,162,784	44,044,173
35 to 44 Years	11.9%	13.1%	12.7%	50,243	1,096,763	40,656,419
45 to 54 Years	13.8%	14.0%	13.4%	57,928	1,171,473	43,091,143
55 to 64 Years	13.8%	12.7%	12.7%	57,873	1,061,878	40,747,520
65 to 74 Years	9.8%	8.4%	8.6%	41,197	706,482	27,503,389
75 Years, and Over	6.6%	5.8%	6.3%	27,926	481,385	20,229,000
Race: White	81.0%	68.4%	73.0%	340,716	5,720,209	234,370,202
Race: Black or African American	11.5%	19.2%	12.7%	48,540	1,605,447	40,610,815
Race: American Indian and Alaska Native	0.3%	0.3%	0.8%	1,090	22,499	2,632,102
Race: Asian	2.7%	6.2%	5.4%	11,472	520,119	17,186,320
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.1%	0.2%	78	5,469	570,116
Race: Some Other Race	1.3%	2.4%	4.8%	5,654	200,265	15,553,808
Race: Two or More Races	3.1%	3.5%	3.1%	12,973	291,944	10,081,044
Hispanic or Latino (of any race)	5.7%	9.0%	17.6%	24,018	749,458	56,510,571
Population Growth						
Population (Pop Estimates) ⁵	—	—	—	430,006	8,470,020	325,719,178
Population Annual Average Growth ⁵	1.0%	0.9%	0.8%	4,089	71,902	2,448,797
Economic						
Labor Force Participation Rate and Size (civilian population 16 years and over)	62.9%	65.5%	63.3%	213,821	4,320,683	161,159,470
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	83.2%	83.2%	81.6%	133,625	2,794,854	103,761,701
Armed Forces Labor Force	0.2%	1.7%	0.4%	841	110,817	1,024,855
Veterans, Age 18-64	5.9%	8.3%	4.9%	15,427	433,158	9,667,749
Veterans Labor Force Participation Rate and Size, Age 18-64	82.6%	82.6%	75.8%	12,737	357,879	7,326,514

Summary¹

	Percent			Value		
	Piedmont Workforce Network (WDA 6)	Virginia	USA	Piedmont Workforce Network (WDA 6)	Virginia	USA
Median Household Income ²	—	—	—	\$69,335	\$68,766	\$57,652
Per Capita Income	—	—	—	\$35,224	\$36,268	\$31,177
Poverty Level (of all people)	10.7%	11.2%	14.6%	43,362	906,838	45,650,345
Households Receiving Food Stamps	6.8%	9.1%	12.6%	10,810	282,296	15,029,498
Mean Commute Time (minutes)	—	—	—	31.0	28.2	26.4
Commute via Public Transportation	1.9%	4.4%	5.1%	3,887	182,233	7,607,907
Educational Attainment, Age 25-64						
No High School Diploma	9.3%	9.2%	11.4%	20,372	411,815	19,230,541
High School Graduate	26.1%	23.2%	26.0%	57,071	1,041,545	43,784,920
Some College, No Degree	20.1%	20.1%	21.2%	44,040	901,518	35,803,629
Associate's Degree	7.0%	8.1%	9.0%	15,387	362,283	15,199,517
Bachelor's Degree	21.6%	23.1%	20.5%	47,271	1,037,257	34,602,913
Postgraduate Degree	15.9%	16.4%	11.8%	34,933	738,480	19,917,735
Housing						
Total Housing Units	—	—	—	180,355	3,466,921	135,393,564
Median House Value (of owner-occupied units) ²	—	—	—	\$287,468	\$255,800	\$193,500
Homeowner Vacancy	1.7%	1.6%	1.7%	1,980	33,377	1,346,331
Rental Vacancy	4.4%	5.8%	6.1%	2,226	65,735	2,838,344
Renter-Occupied Housing Units (% of Occupied Units)	30.2%	33.8%	36.2%	47,649	1,050,563	42,992,786
Occupied Housing Units with No Vehicle Available (% of Occupied Units)	5.0%	6.3%	8.8%	7,939	195,311	10,468,418
Social						
Enrolled in Grade 12 (% of total population)	1.2%	1.3%	1.4%	5,117	110,440	4,437,324
Disconnected Youth ⁴	1.9%	1.9%	2.7%	471	8,220	456,548
Children in Single Parent Families (% of all children)	28.4%	31.1%	34.5%	24,230	552,474	24,106,567
With a Disability, Age 18-64	9.2%	9.4%	10.3%	23,763	480,446	20,276,199
With a Disability, Age 18-64, Labor Force Participation Rate and Size	44.7%	44.0%	41.4%	10,624	211,217	8,395,884
Foreign Born	7.2%	12.1%	13.4%	30,322	1,014,966	43,028,127
Speak English Less Than Very Well (population 5 yrs and over)	3.4%	5.8%	8.5%	13,315	455,009	25,654,421
Union Membership						
Total ³	3.4%	4.5%	10.7%	—	—	—
Private Sector ³	1.8%	2.8%	6.4%	—	—	—
Manufacturing ³	2.7%	5.6%	8.7%	—	—	—
Public Sector ³	8.0%	12.4%	35.1%	—	—	—

Source: [JobsEQ®](#)

1. American Community Survey 2013-2017, unless noted otherwise

2. Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties.

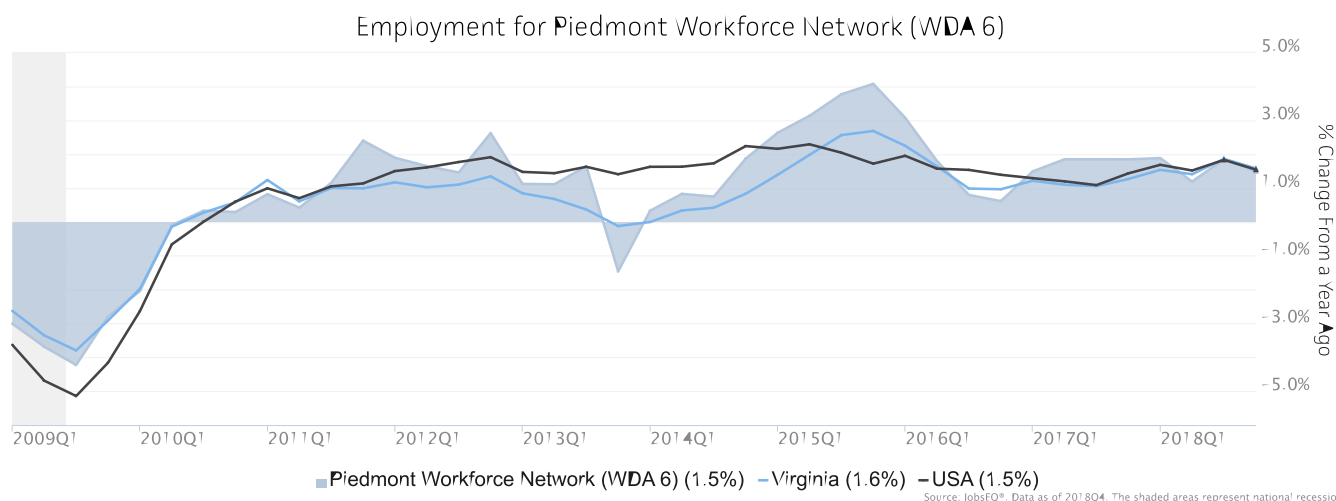
3. 2017; Current Population Survey, unionstats.com, and Chmura; county- and zip-level data are best estimates based upon industry-, MSA-, and state-level data

4. Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

5. Census 2017, annual average growth rate since 2007

Employment Trends

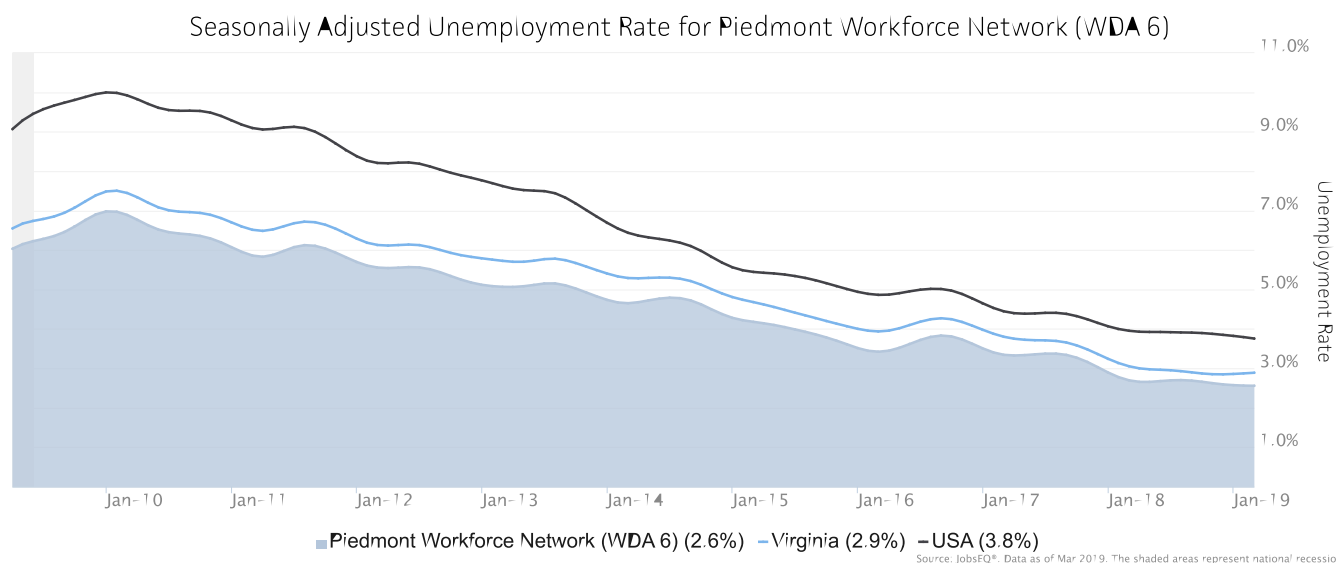
As of 2018Q4, total employment for the Piedmont Workforce Network (WDA 6) was 188,702 (based on a four-quarter moving average). Over the year ending 2018Q4, employment increased 1.5% in the region.



Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2018Q2 with preliminary estimates updated to 2018Q4.

Unemployment Rate

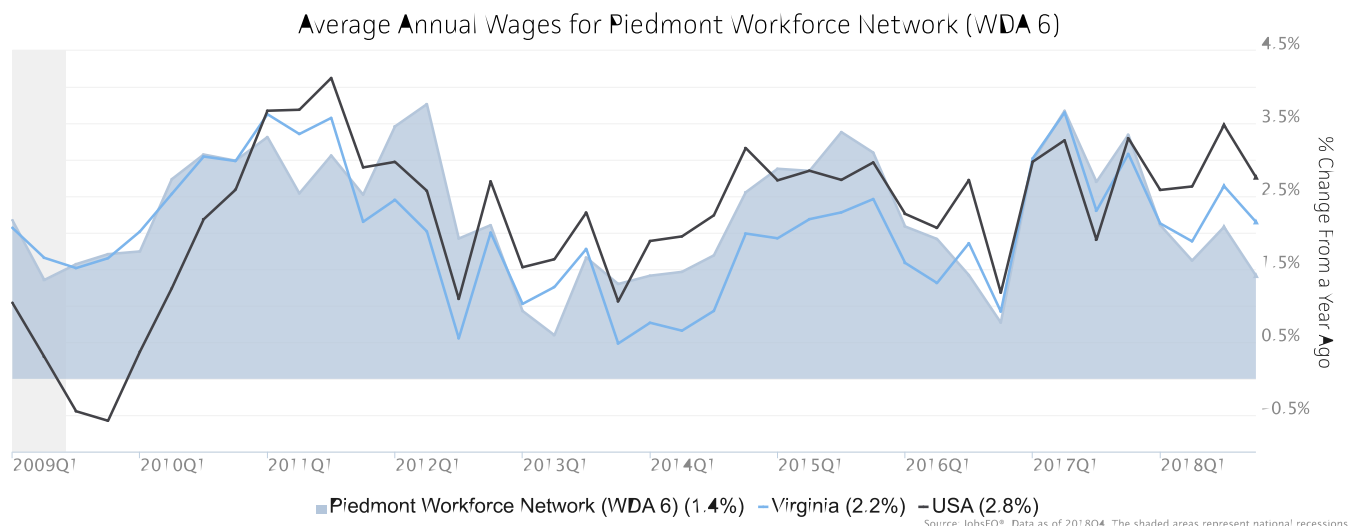
The seasonally adjusted unemployment rate for the Piedmont Workforce Network (WDA 6) was 2.6% as of March 2019. The regional unemployment rate was lower than the national rate of 3.8%. One year earlier, in March 2018, the unemployment rate in the Piedmont Workforce Network (WDA 6) was 2.7%.



Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through March 2019.

Wage Trends

The average worker in the Piedmont Workforce Network (WDA 6) earned annual wages of \$48,477 as of 2018Q4. Average annual wages per worker increased 1.4% in the region over the preceding four quarters. For comparison purposes, annual average wages were \$55,713 in the nation as of 2018Q4.



Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2018Q2 with preliminary estimates updated to 2018Q4.

Cost of Living Index

The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. The cost of living is 20.7% higher in Piedmont Workforce Network (WDA 6) than the U.S. average.

Cost of Living Information

	Annual Average Salary	Cost of Living Index	
		(Base US)	US Purchasing Power
Piedmont Workforce Network (WDA 6)	\$48,477	120.7	\$40,157
Virginia	\$56,280	116.6	\$48,268
USA	\$55,713	100.0	\$55,713

Source: [JobsEQ®](#)

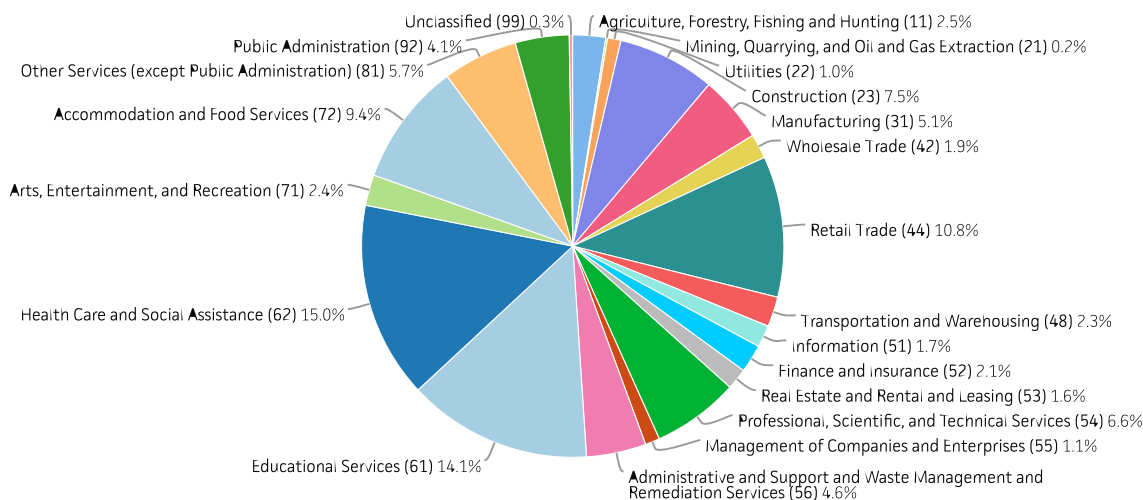
Data as of 2018Q4

Cost of Living per C2ER, data as of 2018q4, imputed by Chmura where necessary.

Industry Snapshot

The largest sector in the Piedmont Workforce Network (WDA 6) is Health Care and Social Assistance, employing 28,364 workers. The next-largest sectors in the region are Educational Services (26,646 workers) and Retail Trade (20,368). High location quotients (LQs) indicate sectors in which a region has high concentrations of employment compared to the national average. The sectors with the largest LQs in the region are Utilities (LQ = 1.93), Agriculture, Forestry, Fishing and Hunting (1.83), and Educational Services (1.72).

Total Workers for Piedmont Workforce Network (WDA 6) by Industry



Source: JobsFQ®, Data as of 2018Q4

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2018Q2 with preliminary estimates updated to 2018Q4.

Sectors in the Piedmont Workforce Network (WDA 6) with the highest average wages per worker are Utilities (\$105,946), Finance and Insurance (\$96,039), and Management of Companies and Enterprises (\$85,168). Regional sectors with the best job growth (or most moderate job losses) over the last 5 years are Health Care and Social Assistance (+2,653 jobs), Accommodation and Food Services (+2,648), and Construction (+2,104).

Over the next 1 year, employment in the Piedmont Workforce Network (WDA 6) is projected to expand by 1,639 jobs. The fastest growing sector in the region is expected to be Health Care and Social Assistance with a +1.9% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Health Care and Social Assistance (+534 jobs), Educational Services (+193), and Construction (+182).

NAICS	Industry	Current			5-Year History		1-Year Forecast				
		Four Quarters Ending with 2018q4			Total Change	Avg Ann % Chg in Empl	Separations (Approximate)			---Growth---	
		Empl	Avg Ann Wages	LQ	Empl	Region	Total New Demand	Exits	Transfers	Empl	Avg Ann Rate
11	Agriculture, Forestry, Fishing and Hunting	4,725	\$23,602	1.83	-32	-0.1%	529	221	291	17	0.4%
21	Mining, Quarrying, and Oil and Gas Extraction	295	\$56,217	0.36	14	1.0%	28	10	20	-2	-0.6%
22	Utilities	1,903	\$105,946	1.93	-50	-0.5%	175	62	109	3	0.1%
23	Construction	14,121	\$49,361	1.32	2,104	3.3%	1,575	501	892	182	1.3%
31	Manufacturing	9,587	\$53,470	0.62	1,134	2.6%	972	370	630	-28	-0.3%
42	Wholesale Trade	3,543	\$56,806	0.49	154	0.9%	385	141	232	12	0.3%
44	Retail Trade	20,368	\$28,674	1.02	1,002	1.0%	2,833	1,203	1,519	110	0.5%
48	Transportation and Warehousing	4,306	\$58,148	0.52	228	1.1%	485	195	262	28	0.7%
51	Information	3,200	\$76,858	0.86	-95	-0.6%	303	113	198	-8	-0.2%
52	Finance and Insurance	4,039	\$96,039	0.54	238	1.2%	403	146	236	21	0.5%
53	Real Estate and Rental and Leasing	3,071	\$52,519	0.94	66	0.4%	328	143	170	15	0.5%
54	Professional, Scientific, and Technical Services	12,521	\$75,715	0.99	1,245	2.1%	1,242	405	674	163	1.3%
55	Management of Companies and Enterprises	2,111	\$85,168	0.75	-121	-1.1%	206	71	120	14	0.7%
56	Administrative and Support and Waste Management and Remediation Services	8,605	\$36,851	0.71	945	2.4%	1,084	423	572	89	1.0%
61	Educational Services	26,646	\$47,825	1.72	1,547	1.2%	2,664	1,190	1,280	193	0.7%
62	Health Care and Social Assistance	28,364	\$54,834	1.05	2,653	2.0%	3,216	1,318	1,365	534	1.9%
71	Arts, Entertainment, and Recreation	4,435	\$26,988	1.18	435	2.1%	667	280	343	44	1.0%
72	Accommodation and Food Services	17,746	\$20,096	1.04	2,648	3.3%	3,013	1,274	1,604	136	0.8%
81	Other Services (except Public Administration)	10,839	\$36,626	1.31	1,459	2.9%	1,291	563	670	58	0.5%
92	Public Administration	7,794	\$52,985	0.88	513	1.4%	743	305	413	26	0.3%
99	Unclassified	484	\$44,779	1.67	484	283.6%	59	23	32	4	0.8%
Total - All Industries		188,702	\$48,477	1.00	16,568	1.9%	22,301	8,857	11,805	1,639	0.9%

Source: [JobsEQ®](#)

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2018Q2 with preliminary estimates updated to 2018Q4. Forecast employment growth uses national projections adapted for regional growth patterns.

Occupation Snapshot

The largest major occupation group in the Piedmont Workforce Network (WDA 6) is Office and Administrative Support Occupations, employing 24,108 workers. The next-largest occupation groups in the region are Sales and Related Occupations (17,409 workers) and Food Preparation and Serving Related Occupations (17,212). High location quotients (LQs) indicate occupation groups in which a region has high concentrations of employment compared to the national average. The major groups with the largest LQs in the region are Education, Training, and Library Occupations (LQ = 1.51), Life, Physical, and Social Science Occupations (1.49), and Farming, Fishing, and Forestry Occupations (1.48).

Occupation groups in the Piedmont Workforce Network (WDA 6) with the highest average wages per worker are Management Occupations (\$119,000), Legal Occupations (\$97,600), and Computer and Mathematical Occupations (\$87,900). The unemployment rate in the region varied among the major groups from 1.0% among Legal Occupations to 5.2% among Farming, Fishing, and Forestry Occupations.

Over the next 1 year, the fastest growing occupation group in the Piedmont Workforce Network (WDA 6) is expected to be Healthcare Support Occupations with a +1.9% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Healthcare Practitioners and Technical Occupations (+190 jobs) and Education, Training, and Library Occupations (+156). Over the same period, the highest separation demand (occupation demand due to retirements and workers moving from one occupation to another) is expected in Food Preparation and Serving Related Occupations (3,022 jobs) and Office and Administrative Support Occupations (2,718).

Occupation Snapshot in Piedmont Workforce Network (WDA 6), 2018q4

SOC	Occupation	Current						5-Year History		1-Year Forecast				
		Four Quarters Ending with 2018q4						Total Change	Avg Ann % Chg in Empl					
		-----2018q4-----												
		Empl	Avg Ann Wages¹	LQ	Unempl	Rate	Online Job Ads²	Empl	Region	Total New Demand	Exits	Transfer	Empl	Avg Ann Rate
11-0000	Management	12,335	\$119,000	1.08	157	1.2%	748	714	1.2%	1,088	397	574	117	0.9%
13-0000	Business and Financial Operations	9,578	\$74,800	0.97	218	2.1%	429	679	1.5%	980	295	587	98	1.0%
15-0000	Computer and Mathematical	5,497	\$87,900	0.98	121	2.0%	715	633	2.5%	450	97	276	77	1.4%
17-0000	Architecture and Engineering	2,635	\$79,900	0.81	60	2.1%	126	183	1.5%	215	69	125	21	0.8%
19-0000	Life, Physical, and Social Science	2,291	\$71,300	1.49	31	1.4%	278	263	2.5%	233	60	150	22	1.0%
21-0000	Community and Social Service	3,297	\$48,400	1.08	48	1.4%	283	393	2.6%	431	140	233	58	1.8%
23-0000	Legal	1,468	\$97,600	0.95	15	1.0%	20	128	1.8%	103	37	53	13	0.9%
25-0000	Education, Training, and Library	15,977	\$59,600	1.51	235	1.5%	889	765	1.0%	1,522	694	672	156	1.0%
27-0000	Arts, Design, Entertainment, Sports, and Media	4,029	\$53,800	1.20	71	1.8%	214	151	0.8%	408	166	225	17	0.4%
29-0000	Healthcare Practitioners and Technical	12,593	\$78,900	1.17	146	1.1%	1,072	1,012	1.7%	864	345	329	190	1.5%
31-0000	Healthcare Support	5,169	\$30,300	0.98	162	2.9%	379	424	1.7%	719	312	308	100	1.9%
33-0000	Protective Service	3,586	\$43,300	0.89	109	2.6%	198	331	2.0%	408	190	203	15	0.4%
35-0000	Food Preparation and Serving Related	17,212	\$25,800	1.07	830	4.4%	1,115	2,604	3.3%	3,177	1,349	1,673	154	0.9%

Occupation Snapshot in Piedmont Workforce Network (WDA 6), 2018q4

SOCOccupation		Current						5-Year History		1-Year Forecast				
		Four Quarters Ending with						Total Change	Avg Ann % Chg in Empl					
		2018q4			-----2018q4-----									
		Empl	Avg Ann Wages ¹	LQ	Unempl	Unempl Rate	Online Job Ads ²							
								Empl	Region	Total New Demand	Exits	Transfer	Empl	Avg Ann Rate
37-0000	Building and Grounds Cleaning and Maintenance	8,144	\$27,700	1.24	317	3.7%	427	1,089	2.9%	1,102	503	532	67	0.8%
39-0000	Personal Care and Service	8,275	\$26,600	1.03	229	2.5%	367	1,073	2.8%	1,437	662	630	144	1.7%
41-0000	Sales and Related	17,409	\$36,600	0.92	555	2.9%	1,712	920	1.1%	2,532	1,084	1,363	85	0.5%
43-0000	Office and Administrative Support	24,108	\$37,700	0.88	782	2.8%	1,125	1,835	1.6%	2,762	1,268	1,450	44	0.2%
45-0000	Farming, Fishing, and Forestry	1,821	\$32,000	1.48	80	5.2%	20	64	0.7%	266	67	199	0	0.0%
47-0000	Construction and Extraction	10,562	\$42,700	1.21	410	3.5%	272	1,346	2.8%	1,227	386	717	124	1.2%
49-0000	Installation, Maintenance, and Repair	6,707	\$45,800	0.93	167	2.1%	439	681	2.2%	716	239	412	65	1.0%
51-0000	Production	7,083	\$39,300	0.62	234	2.8%	229	650	1.9%	775	298	489	-12	-0.2%
53-0000	Transportation and Material Moving	8,928	\$32,800	0.69	366	3.3%	561	630	1.5%	1,148	455	631	62	0.7%
	Total - All Occupations	188,702	\$50,100	1.00	n/a	n/a	11,618	16,568	1.9%	22,584	9,113	11,832	1,639	0.9%

Source: [JobsEQ®](#)

Data as of 2018Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

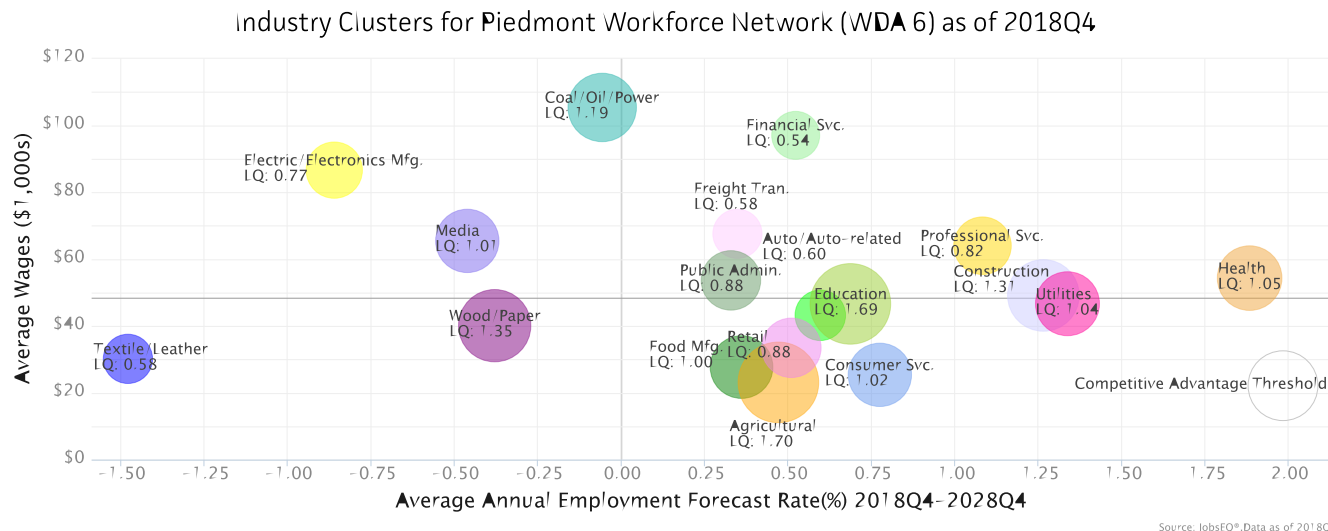
1. Occupation wages are as of 2017 and should be taken as the average for all Covered Employment

2. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).

Occupation employment data are estimated via industry employment data and the estimated industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2018Q2, imputed where necessary with preliminary estimates updated to 2018Q4. Wages by occupation are as of 2017 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Industry Clusters

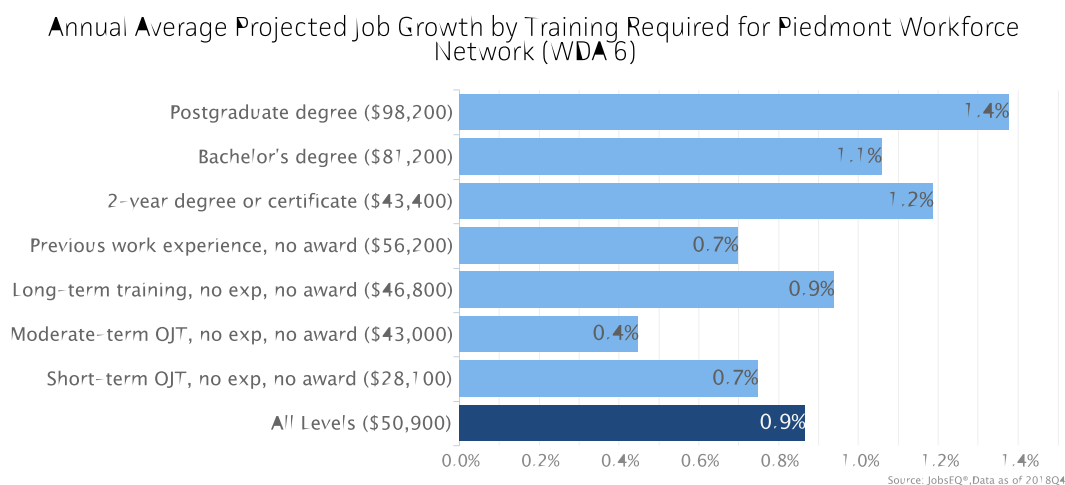
A cluster is a geographic concentration of interrelated industries or occupations. The industry cluster in the Piedmont Workforce Network (WDA 6) with the highest relative concentration is Agricultural with a location quotient of 1.70. This cluster employs 4,544 workers in the region with an average wage of \$23,164. Employment in the Agricultural cluster is projected to expand in the region about 0.5% per year over the next ten years.



Location quotient and average wage data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics, imputed where necessary, and updated through 2018Q2 with preliminary estimates updated to 2018Q4. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Education Levels

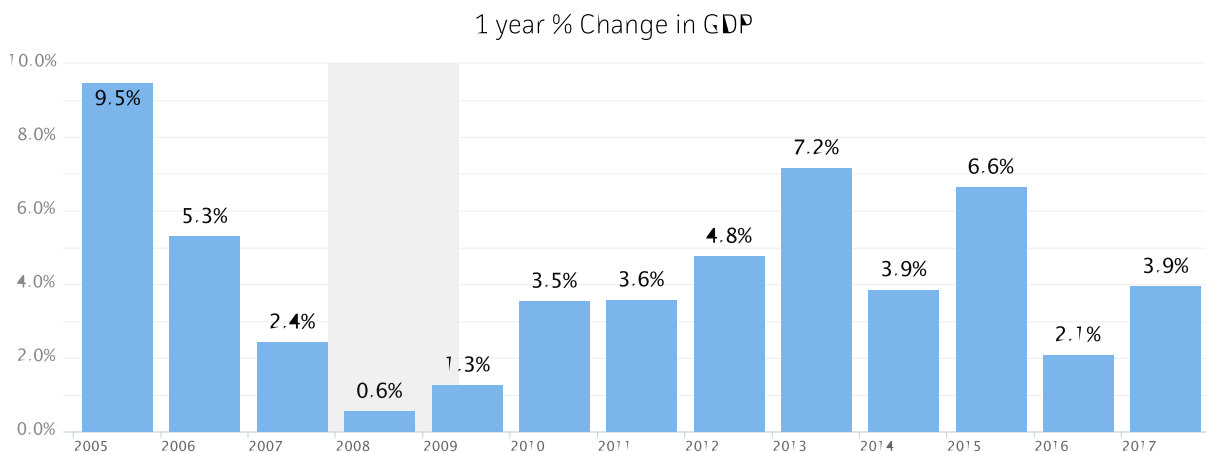
Expected growth rates for occupations vary by the education and training required. While all employment in the Piedmont Workforce Network (WDA 6) is projected to grow 0.9% over the next ten years, occupations typically requiring a postgraduate degree are expected to grow 1.4% per year, those requiring a bachelor's degree are forecast to grow 1.1% per year, and occupations typically needing a 2-year degree or certificate are expected to grow 1.2% per year.



Employment by occupation data are estimates as of 2018Q4. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

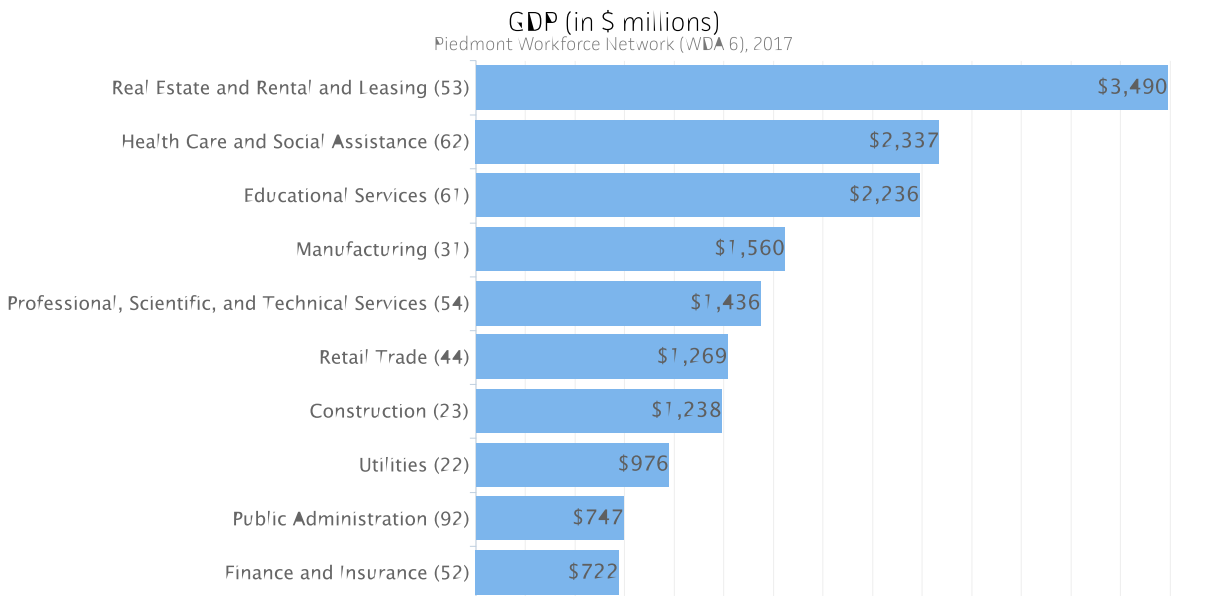
Gross Domestic Product

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2017, nominal GDP in the Piedmont Workforce Network (WDA 6) expanded 3.9%. This follows growth of 2.1% in 2016. As of 2017, total GDP in the Piedmont Workforce Network (WDA 6) was \$20,465,915,000.



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2017.

Of the sectors in the Piedmont Workforce Network (WDA 6), Real Estate and Rental and Leasing contributed the largest portion of GDP in 2017, \$3,489,883,000. The next-largest contributions came from Health Care and Social Assistance (\$2,336,640,000); Educational Services (\$2,235,822,000); and Manufacturing (\$1,559,728,000).



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2017.

Region Definition

Piedmont Workforce Network (WDA 6) is defined as the following counties:

Albemarle County, Virginia

Culpeper County, Virginia

Fauquier County, Virginia

Fluvanna County, Virginia

Greene County, Virginia

Louisa County, Virginia

Madison County, Virginia

Nelson County, Virginia

Orange County, Virginia

Rappahannock County, Virginia

Charlottesville City, Virginia

FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a *competitive advantage* in that cluster.

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the “all industry” level to the 6-digit level. The first two digits define the top level category, known as the “sector,” which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 820 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 23 major groups, 96 minor groups, and 449 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

About This Report

This report and all data herein were produced by JobsEQ®, a product of Chmura Economics & Analytics. The information contained herein was obtained from sources we believe to be reliable. However, we cannot guarantee its accuracy and completeness.

Average Annual Wages for GO Virginia										
GO Virginia Region 9 (1.4%)									Annual Change in Average Annual Wages	
Date	% Change From a Year Ago	Flag	Average Annual Wages						% Change	\$ Change
2003Q1	2.1%		\$31,197				2013Q4		1.3%	\$557
2003Q2	2.4%		\$31,513				2014Q4		2.6%	\$1,110
2003Q3	2.2%		\$31,776				2015Q4		3.1%	\$1,380
2003Q4	3.7%		\$32,146				2016Q4		0.8%	\$354
2004Q1	4.2%		\$32,494				2017Q4		3.3%	\$1,548
2004Q2	4.3%		\$32,852				2018Q4		1.4%	\$677
2004Q3	4.6%		\$33,230							
2004Q4	5.1%		\$33,792							
2005Q1	4.7%		\$34,033					Source: JobsEQ®		
2005Q2	4.7%		\$34,409							
2005Q3	5.4%		\$35,017							
2005Q4	3.8%		\$35,087							
2006Q1	5.6%		\$35,940							
2006Q2	4.9%		\$36,103							
2006Q3	3.8%		\$36,335							
2006Q4	4.6%		\$36,716							
2007Q1	2.4%		\$36,818							
2007Q2	2.9%		\$37,134							
2007Q3	3.5%		\$37,602							
2007Q4	3.5%		\$38,008							
2008Q1	4.1%		\$38,319							
2008Q2	4.2%		\$38,697							
2008Q3	3.1%		\$38,770							
2008Q4	2.8%		\$39,077							
2009Q1	2.2%		\$39,152							
2009Q2	1.4%		\$39,222							
2009Q3	1.6%		\$39,380							
2009Q4	1.7%		\$39,745							
2010Q1	1.7%		\$39,836							
2010Q2	2.7%		\$40,295							
2010Q3	3.1%		\$40,591							
2010Q4	3.0%		\$40,934							
2011Q1	3.3%		\$41,156							
2011Q2	2.5%		\$41,319							
2011Q3	3.1%		\$41,833							
2011Q4	2.5%		\$41,967							
2012Q1	3.5%		\$42,580							
2012Q2	3.8%		\$42,875							
2012Q3	1.9%		\$42,638							
2012Q4	2.1%		\$42,851							
2013Q1	0.9%		\$42,976							
2013Q2	0.6%		\$43,132							
2013Q3	1.7%		\$43,347							
2013Q4	1.3%		\$43,408							
2014Q1	1.4%		\$43,584							
2014Q2	1.5%		\$43,764							
2014Q3	1.7%		\$44,080							
2014Q4	2.6%		\$44,518							
2015Q1	2.9%		\$44,839							
2015Q2	2.9%		\$45,012							
2015Q3	3.4%		\$45,571							
2015Q4	3.1%		\$45,898							
2016Q1	2.1%		\$45,775							
2016Q2	1.9%		\$45,875							
2016Q3	1.4%		\$46,218							
2016Q4	0.8%		\$46,252							
2017Q1	3.0%		\$47,140							
2017Q2	3.7%		\$47,560							
2017Q3	2.7%		\$47,466							
2017Q4	3.3%		\$47,800							
2018Q1	2.1%		\$48,133							
2018Q2	1.6%		\$48,331							
2018Q3	2.1%	prelim	\$48,454							
2018Q4	1.4%	prelim	\$48,477							
Source: JobsEQ®. Data as of 2018Q4.										

Industry Data, GO Virginia Region 9																				
Employment																				
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
Total - All Industries	154,460	155,710	156,787	162,209	166,634	171,767	174,202	172,453	166,538	165,916	167,909	171,121	172,134	173,769	179,699	182,497	185,719	188,702		
GOVA9 Biomedical and Biotechnology	2,892	2,708	2,958	3,514	3,189	3,267	3,219	3,264	3,153	3,064	3,036	2,929	2,907	3,051	3,073	3,096	3,149	3,190		
GOVA9 Financial and Business Services	11,833	11,714	12,223	12,839	13,488	14,401	14,505	14,764	14,313	14,047	14,247	14,404	15,091	15,077	15,580	16,166	16,313	16,652		
GOVA9 Food and Beverage Manufacturing	508	656	670	623	704	731	689	752	827	879	957	1,129	1,400	1,707	1,698	1,889	2,069	2,235		
GOVA9 Information Technology/Communications	10,417	9,941	10,284	10,844	11,381	11,987	11,929	12,012	11,508	11,267	11,415	11,460	11,257	11,276	11,630	11,792	12,140	11,975		
GOVA9 Light Manufacturing	10,022	9,332	8,761	9,589	9,459	9,492	9,463	9,053	8,080	7,473	7,524	7,581	7,832	8,059	8,664	8,470	8,772	9,043		
Employment % Change Year-Over-Year																				
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	5-Year Avg Ann Rate	5-Year Cumulative Rate
Total - All Industries	n/a	0.8%	0.7%	3.5%	2.7%	3.1%	1.4%	-1.0%	-3.4%	-0.4%	1.2%	1.9%	0.6%	0.9%	3.4%	1.6%	1.8%	1.6%	1.9%	9.6%
GOVA9 Biomedical and Biotechnology	n/a	-6.4%	9.2%	18.8%	-9.2%	2.5%	-1.5%	1.4%	-3.4%	-2.8%	-0.9%	-3.5%	-0.8%	5.0%	0.7%	0.7%	1.7%	1.3%	1.9%	9.7%
GOVA9 Financial and Business Services	n/a	-1.0%	4.3%	5.0%	5.1%	6.8%	0.7%	1.8%	-3.1%	-1.9%	1.4%	1.1%	4.8%	-0.1%	3.3%	3.8%	0.9%	2.1%	2.0%	10.3%
GOVA9 Food and Beverage Manufacturing	n/a	29.1%	2.2%	-7.1%	13.1%	3.8%	-5.7%	9.1%	10.0%	6.3%	8.9%	18.0%	24.0%	21.9%	-0.6%	11.2%	9.6%	8.0%	9.8%	59.6%
GOVA9 Information Technology/Communications	n/a	-4.6%	3.5%	5.4%	5.0%	5.3%	-0.5%	0.7%	-4.2%	-2.1%	1.3%	0.4%	-1.8%	0.2%	3.1%	1.4%	3.0%	-1.4%	1.2%	6.4%
GOVA9 Light Manufacturing	n/a	-6.9%	-6.1%	9.4%	-1.4%	0.3%	-0.3%	-4.3%	-10.8%	-7.5%	0.7%	0.8%	3.3%	2.9%	7.5%	-2.2%	3.6%	3.1%	2.9%	15.5%
Employment % Change Year-Over-Year																				
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	5-Year Avg Ann #	5-Year Cumulative #
Total - All Industries	n/a	1,250	1,077	5,423	4,424	5,133	2,435	-1,749	-5,915	-622	1,994	3,211	1,014	1,635	5,930	2,798	3,222	2,983	3,314	16,568
GOVA9 Biomedical and Biotechnology	n/a	-184	250	556	-325	78	-49	46	-112	-88	-28	-107	-22	144	22	23	53	40	57	283
GOVA9 Financial and Business Services	n/a	-119	509	616	650	913	103	259	-452	-266	200	157	687	-14	503	585	147	340	312	1,561
GOVA9 Food and Beverage Manufacturing	n/a	148	14	-48	81	27	-42	63	75	52	78	172	271	307	-9	191	180	165	167	835
GOVA9 Information Technology/Communications	n/a	-476	343	560	537	606	-58	83	-504	-241	148	45	-203	20	353	162	348	-164	144	719
GOVA9 Light Manufacturing	n/a	-691	-571	828	-130	32	-29	-409	-974	-607	51	57	251	227	605	-194	301	272	242	1,211
Source: JobsEQ®																				

Awards in GO Virginia Region 9												
	CIP Code	Title	Certificate < 1 Yr	Certificate 1+ but < 2 Yr	Associate's	Certificate 2+ but < 4 Yr	Bachelor's	Post-Baccalaureate	Master's	Post-Master's	Doctorate	Total Awards
		TOTAL OF ALL INDUSTRIES	745	1,220	1,479	0	5,033	125	1,776	16	809	11,203
		TOTAL RELATED TO TARGET INDUSTRIES IN REGION 9	92	14	137	0	1,105	30	343	0	112	1,833
IT	15.0303	Electrical, Electronic and Communications Engineering Technology/Technician	47	0	0	0	0	0	0	0	0	47
Fin	52.0399	Accounting and Related Services, Other	24	0	1	0	0	0	0	0	0	25
IT	11.0101	Computer and Information Sciences, General	14	0	38	0	139	0	27	0	4	222
Food/Bev	01.0601	Applied Horticulture/Horticulture Operations, General	3	0	0	0	0	0	0	0	0	3
IT	11.0103	Information Technology	3	0	0	0	0	0	0	0	0	3
IT	11.0801	Web Page, Digital/Multimedia and Information Resources Design	1	0	0	0	0	0	0	0	0	1
Fin	52.0301	Accounting	0	14	0	0	0	0	58	0	0	72
IT	14.0101	Engineering, General	0	0	43	0	47	0	0	0	0	90
Bio	30.0101	Biological and Physical Sciences	0	0	34	0	0	0	17	0	0	51
IT	11.0701	Computer Science	0	0	19	0	0	0	0	0	0	19
Light Mfg	47.0105	Industrial Electronics Technology/Technician	0	0	1	0	0	0	0	0	0	1
Light Mfg	15.0612	Industrial Technology/Technician	0	0	1	0	0	0	0	0	0	1
Bio	26.0202	Biochemistry	0	0	0	0	0	0	0	0	5	5
Bio	14.0501	Bioengineering and Biomedical Engineering	0	0	0	0	97	0	3	0	5	105
Bio	41.0101	Biology Technician/Biotechnology Laboratory Technician	0	0	0	0	0	0	0	0	0	0
Bio	26.0101	Biology/Biological Sciences, General	0	0	0	0	315	0	2	0	4	321
Bio	26.0203	Biophysics	0	0	0	0	0	0	0	0	3	3
Light Mfg	15.1302	CAD/CADD Drafting and/or Design Technology/Technician	0	0	0	0	0	0	0	0	0	0
Bio	26.0401	Cell/Cellular Biology and Histology	0	0	0	0	0	0	0	0	1	1
Bio	14.0701	Chemical Engineering	0	0	0	0	46	0	4	0	9	59
Light Mfg	14.0801	Civil Engineering, General	0	0	0	0	55	0	14	0	4	73
Bio	51.1004	Clinical/Medical Laboratory Technician	0	0	0	0	0	0	0	0	0	0
IT	11.1003	Computer and Information Systems Security/Information Assurance	0	0	0	0	0	2	0	0	0	2
IT	14.0901	Computer Engineering, General	0	0	0	0	57	0	18	0	2	77
IT	11.1099	Computer/Information Technology Services Administration and Management, Other	0	0	0	0	0	2	0	0	0	2
IT	11.0802	Data Modeling/Warehousing and Database Administration	0	0	0	0	0	0	50	0	0	50
IT	52.0208	E-Commerce/Electronic Commerce	0	0	0	0	0	8	0	0	0	8
IT	14.1001	Electrical and Electronics Engineering	0	0	0	0	42	0	29	0	10	81
IT	15.0000	Engineering Technology, General	0	0	0	0	0	0	0	0	0	0
IT	14.9999	Engineering, Other	0	0	0	0	0	0	12	0	12	24
Bio	51.9999	Health Professions and Related Clinical Sciences, Other	0	0	0	0	0	0	7	0	0	7
Light Mfg	15.0699	Industrial Production Technologies/Technicians, Other	0	0	0	0	0	0	0	0	0	0
IT	52.1201	Management Information Systems, General	0	0	0	0	0	0	59	0	0	59
Light Mfg	14.1801	Materials Engineering	0	0	0	0	0	0	9	0	13	22
IT	27.0101	Mathematics, General	0	0	0	0	107	0	2	0	5	114
Light Mfg	14.1901	Mechanical Engineering	0	0	0	0	97	0	0	0	0	97
Bio	26.0503	Medical Microbiology and Bacteriology	0	0	0	0	0	0	0	0	12	12
Bio	26.1501	Neuroscience	0	0	0	0	0	0	0	0	7	7
Bio	26.0910	Pathology/Experimental Pathology	0	0	0	0	0	0	0	0	4	4
Bio	26.1001	Pharmacology	0	0	0	0	0	0	0	0	3	3
Bio	26.0901	Physiology, General	0	0	0	0	0	0	0	0	1	1
IT	52.0211	Project Management	0	0	0	0	0	18	0	0	0	18
IT	14.2701	Systems Engineering	0	0	0	0	103	0	32	0	8	143
	Source: JobsEQ®											
	Data as of the 2016-2017 academic year											

Postsecondary Programs Linked to GOVA9 Biomedical and Biotechnology			
Program	Awards		
University of Virginia-Main Campus			
Bioengineering and Biomedical Engineering	105		
Biology/Biological Sciences, General	321		
Chemical Engineering	59		
Chemistry, General	149		
Economics, General	461		
Electrical and Electronics Engineering	81		
International Relations and Affairs	279		
Mechanical Engineering	97		
Physics, General	70		
Systems Engineering	143		
Postsecondary Programs Linked to GOVA9 Financial and Business Services			
Program	Awards		
University of Virginia-Main Campus			
Architecture	96		
Business Administration and Management, General	425		
Business/Commerce, General	460		
Civil Engineering, General	73		
Computer and Information Sciences, General	170		
Economics, General	461		
International Relations and Affairs	279		
Law	296		
Legal Research and Advanced Professional Studies, Other	37		
Political Science and Government, General	157		

Postsecondary Programs Linked to GOVA9 Food and Beverage Manufacturing			
Program	Awards		
University of Virginia-Main Campus			
Accounting	72		
Business Administration and Management, General	425		
Business/Commerce, General	460		
Chemistry, General	149		
Economics, General	461		
History, General	190		
International Relations and Affairs	279		
Political Science and Government, General	157		
Sociology	86		
Systems Engineering	143		
Postsecondary Programs Linked to GOVA9 Information Technology/Communications			
Program	Awards		
University of Virginia-Main Campus			
Business Administration and Management, General	425		
Business/Commerce, General	460		
Chemistry, General	149		
Computer and Information Sciences, General	170		
Computer Engineering, General	77		
Economics, General	461		
Electrical and Electronics Engineering	81		
International Relations and Affairs	279		
Management Information Systems, General	59		
Systems Engineering	143		

Postsecondary Programs Linked to GOVA9 Light Manufacturing			
Program	Awards		
Germanna Community College			
Electrical, Electronic and Communications Engineering Technology/Technician	18		
Piedmont Virginia Community College			
Electrical, Electronic and Communications Engineering Technology/Technician	29		
University of Virginia-Main Campus			
Bioengineering and Biomedical Engineering	105		
Business Administration and Management, General	425		
Business/Commerce, General	460		
Chemistry, General	149		
Economics, General	461		
Electrical and Electronics Engineering	81		
Mechanical Engineering	97		
Systems Engineering	143		
<u>Source: JobsEQ®</u>			
Among postsecondary programs at schools located in the the GO Virginia Region 9, this sampling identifies those most linked to occupations relevant to GOVA9 Clusters.			

Industry Employment Data, GO Virginia Region 9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Industry Employment Data, GO Virginia Region 9																				
	Employment							Employment % Change Year-Over-Year						Year-To-Year Change in Number of Jobs						
INDUSTRY	2013	2014	2015	2016	2017	2018		2014	2015	2016	2017	2018	5-Year Avg. Ann Rate		2014	2015	2016	2017	2018	Cumulative
GOVA9 Food and Beverage Manufacturing	1,400	1,707	1,698	1,889	2,069	2,235		21.9%	-0.6%	11.2%	9.6%	8.0%	9.8%		307	-9	191	180	165	835
Animal Food Manufacturing (3111)	11	11	14	13	15	44		0.7%	29.7%	-6.6%	9.0%	201.5%	32.0%		0	3	-1	1	30	33
Grain and Oilseed Milling (3112)	36	27	23	30	34	39		-23.2%	-16.9%	32.3%	13.6%	14.8%	1.9%		-8	-5	7	4	5	4
Sugar and Confectionery Product Manufacturing (3113)	24	30	37	39	36	29		25.5%	22.7%	5.2%	-8.0%	-18.8%	3.9%		6	7	2	-3	-7	5
Fruit and Vegetable Preserving and Specialty Food Manufacturing (3114)	69	192	59	40	35	27		179.9%	-69.1%	-32.2%	-12.5%	-23.4%	-17.0%		123	-133	-19	-5	-8	-42
Dairy Product Manufacturing (3115)	2	2	2	1	1	1		-23.9%	-2.2%	-13.1%	-0.2%	2.4%	-8.0%		-1	0	0	0	0	-1
Animal Slaughtering and Processing (3116)	38	60	36	35	36	41		57.1%	-39.5%	-4.1%	5.0%	12.1%	1.4%		22	-24	-1	2	4	3
Seafood Product Preparation and Packaging (3117)	3	2	2	2	2	2		-13.8%	4.1%	-6.7%	-0.2%	2.4%	-3.1%		0	0	0	0	0	0
Bakeries and Tortilla Manufacturing (3118)	133	154	152	146	133	142		16.0%	-1.1%	-4.0%	-8.8%	6.2%	1.3%		21	-2	-6	-13	8	9
Other Food Manufacturing (3119)	58	65	76	89	89	108		12.1%	15.7%	18.2%	-0.3%	20.7%	13.0%		7	10	14	0	18	49
Beverage Manufacturing (3121)	1,027	1,163	1,296	1,492	1,687	1,801		13.3%	11.4%	15.1%	13.1%	6.8%	11.9%		137	133	196	195	115	774
GOVA9 Information Technology/Communications	11,257	11,276	11,630	11,792	12,140	11,975		0.2%	3.1%	1.4%	3.0%	-1.4%	1.2%		20	353	162	348	-164	719
Building Equipment Contractors (2382)	2,463	2,450	2,644	2,622	2,771	2,851		-0.5%	7.9%	-0.8%	5.7%	2.9%	3.0%		-13	193	-22	150	80	388
Computer and Peripheral Equipment Manufacturing (3341)	17	16	7	15	6	6		-8.2%	-53.3%	109.1%	-60.7%	-1.5%	-19.1%		-1	-8	8	-9	0	-11
Semiconductor and Other Electronic Component Manufacturing (3344)	486	455	429	388	400	369		-6.4%	-5.7%	-9.5%	3.1%	-7.6%	-5.3%		-31	-26	-41	12	-30	-116
Electrical Equipment Manufacturing (3353)	23	19	23	29	45	21		-19.7%	22.9%	26.7%	52.2%	-52.8%	-2.1%		-5	4	6	15	-24	-2
Other Electrical Equipment and Component Manufacturing (3359)	164	150	138	127	134	139		-8.6%	-7.7%	-8.1%	5.2%	3.8%	-3.3%		-14	-12	-11	7	5	-25
Professional and Commercial Equipment and Supplies Merchant Wholesalers (4234)	265	247	177	143	144	134		-6.7%	-28.6%	-18.9%	0.6%	-6.8%	-12.7%		-18	-71	-33	1	-10	-131
Household Appliances and Electrical and Electronic Goods Merchant Wholesalers (4236)	159	152	150	151	144	153		-4.4%	-1.0%	0.3%	-4.5%	6.0%	-0.8%		-7	-1	0	-7	9	-6
Software Publishers (5112)	174	203	227	255	271	290		17.0%	11.6%	12.3%	6.3%	7.0%	10.8%		30	24	28	16	19	117
Wired and Wireless Telecommunications Carriers (5173)	505	485	480	482	496	366		-4.1%	-0.9%	0.4%	2.8%	-26.2%	-6.3%		-21	-5	2	14	-130	-140
Other Telecommunications (5179)	41	49	48	39	49	33		19.3%	-1.8%	-17.8%	24.5%	-32.4%	-4.1%		8	-1	-9	10	-16	-8
GOVA9 Light Manufacturing	7,832	8,059	8,664	8,470	8,772	9,043		2.9%	7.5%	-2.2%	3.6%	3.1%	2.9%		227	605	-194	301	272	1,211
Textile and Fabric Finishing and Fabric Coating Mills (3133)	89	65	128	116	113	102		-27.3%	96.4%	-9.0%	-3.0%	-9.7%	2.6%		-24	63	-12	-3	-11	12
Textile Furnishings Mills (3141)	19	13	13	9	9	10		-32.2%	5.4%	-33.5%	6.8%	3.1%	-12.2%		-6	1	-4	1	0	-9
Other Textile Product Mills (3149)	8	8	15	67	81	95		-2.2%	85.7%	338.1%	21.4%	16.4%	62.3%		0	7	52	14	13	86
Cut and Sew Apparel Manufacturing (3152)	28	30	32	33	32	32		6.0%	6.4%	3.3%	-1.3%	-2.0%	2.4%		2	2	1	0	-1	4
Sawmills and Wood Preservation (3211)	565	586	595	501	456	467		3.7%	1.5%	-15.8%	-8.9%	2.3%	-3.7%		21	9	-94	-45	10	-98
Veneer, Plywood, and Engineered Wood Product Manufacturing (3212)	47	51	87	72	74	67		7.9%	69.5%	-17.2%	3.3%	-9.8%	7.1%		4	35	-15	2	-7	19
Other Wood Product Manufacturing (3219)	416	474	527	474	455	484		14.0%	11.3%	-10.1%	-4.1%	6.5%	3.1%		58	54	-53	-19	30	69
Pulp, Paper, and Paperboard Mills (3221)	0	1	123	11	1	1		502.2%	21851.8%	-91.0%	-89.6%	-26.4%	55.5%		0	122	-112	-10	0	1
Converted Paper Product Manufacturing (3222)	125	98	92	88	83	80		-21.1%	-6.7%	-3.7%	-5.5%	-4.5%	-8.6%		-26	-7	-3	-5	-4	-45
Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing (3253)	4	7	22	16	36	40		66.3%	200.5%	-28.7%	126.4%	11.5%	55.2%		3	15	-6	20	4	36
Other Chemical Product and Preparation Manufacturing (3259)	79	81	78	70	58	49		2.3%	-3.6%	-10.6%	-17.2%	-16.0%	-9.3%		2	-3	-8	-12	-9	-31
Plastics Product Manufacturing (3261)	657	686	693	605	591	626		4.4%	1.1%	-12.7%	-2.4%	6.0%	-1.0%		29	8	-88	-14	35	-31
Clay Product and Refractory Manufacturing (3271)	13	14	13	28	38	28		1.7%	-3.0%	109.9%	35.6%	-26.1%	15.7%		0	0	15	10	-10	14
Glass and Glass Product Manufacturing (3272)	18	16	25	31	40	49		-11.6%	50.9%	27.5%	28.3%	21.4%	21.5%		-2	8	7	9	9	30
Cement and Concrete Product Manufacturing (3273)	262	219	232	242	232	229		-16.3%	5.9%	4.2%	-3.8%	-1.6%	-2.7%		-43	13	10	-9	-4	-33
Steel Product Manufacturing from Purchased Steel (3312)	13	12	8	14	12	14		-9.1%	-31.9%	71.0%	-12.0%	16.5%	1.6%		-1	-4	6	-2	2	1
Foundries (3315)	117	59	57	61	61	84		-49.6%	-4.4%	6.9%	0.6%	37.9%	-6.5%		-58	-3	4	0	23	-33
Cutlery and Handtool Manufacturing (3322)	105	122	151	145	66	68		16.0%	23.8%	-3.9%	-54.5%	3.3%	-8.3%		17	29	-6	-79	2	-37
Architectural and Structural Metals Manufacturing (3323)	31	31	27	30	35	38		0.4%	-12.8%	11.0%	16.8%	6.8%	4.0%		0	-4	3	5	2	7
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing (3327)	193	160	134	132	105	104		-17.2%	-16.1%	-2.0%	-20.1%	-1.3%	-11.7%		-33	-26	-3	-27	-1	-89
Other Fabricated Metal Product Manufacturing (3329)	92	111	103	108	222	286		20.7%	-6.6%	4.3%	106.1%	28.7%	25.6%		19	-7	4	115	64	195
Agriculture, Construction, and Mining Machinery Manufacturing (3331)	3	7	1	1	7	13		115.0%	-80.0%	-8.1%	456.8%	83.1%	32.1%		4	-6	0	6	6	10
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (3334)	181	154	147	203	243	268		-15.0%	-4.7%	38.2%	19.7%	10.6%	8.2%		-27	-7	56	40	26	87
Motor Vehicle Parts Manufacturing (3363)	178	182	256	235	244	226		2.0%	40.8%	-8.3%	3.8%	-7.4%	4.9%		4	74	-21	9	-18	48
Aerospace Product and Parts Manufacturing (3364)	345	446	423	334	414	365		29.5%	-5.2%	-21.2%	24.1%	-12.0%	1.1%		102	-23	-90	80	-49	20
Ship and Boat Building (3366)	10	30	33	2	2	2		195.9%	10.1%	-93.7%	-29.2%	39.7%	-27.2%		20	3	-31	-1	1	-8
Other Transportation Equipment Manufacturing (3369)	33	38	138	43	37	35		14.5%	260.8%	-68.9%	-13.4%	-5.7%	0.9%		5	100	-95	-6	-2	2
Household and Institutional Furniture and Kitchen Cabinet Manufacturing (3371)	489	463	496	500	500	502		-5.4%	7.2%	0.8%	0.0%	0.5%	0.5%		-26	33	4	0	2	13
Office Furniture (including Fixtures) Manufacturing (3372)	85	79	87	125	134	142		-7.1%	10.2%	44.4%	6.7%	6.5%	10.9%		-6	8	38	8	9	58
Other Furniture Related Product Manufacturing (3379)	22	21	31	43	41	38		-1.6%	47.9%	36.7%	-4.8%	-7.7%	11.8%		0	10	12	-2	-3	16
Other Miscellaneous Manufacturing (3399)	252	268	266	242	250	254		6.5%	-0.9%	-9.0%	3.5%	1.3%	0.2%		16	-2	-24	9	3	2
Source: JobsEQ®																				

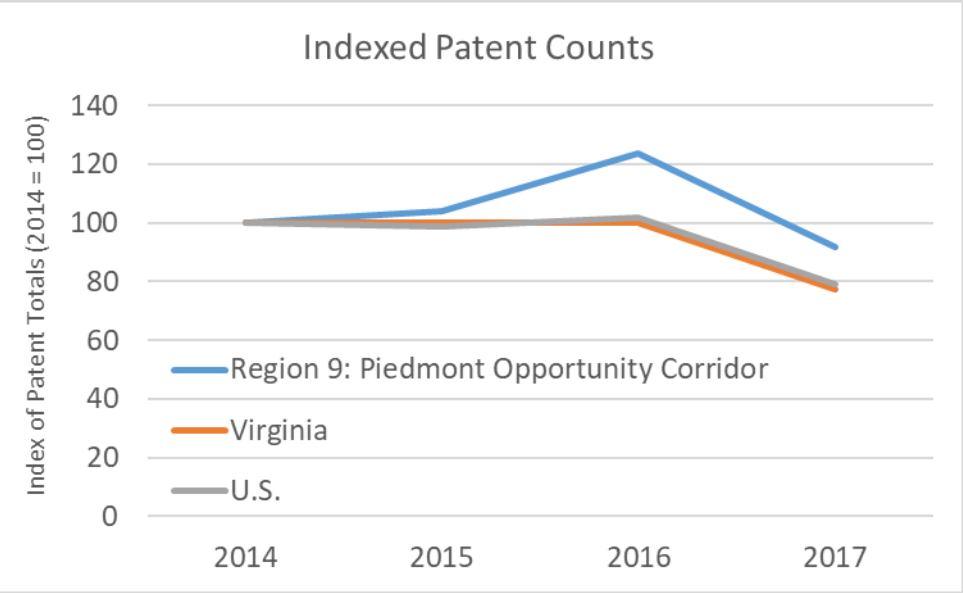
Credential (as of Spring 2019 or 2019 Q2)	Industry Cluster
General Certificate in Brewing	Agriculture, Food and Natural Resources
Certified Administrative Professional (CAP)	Business, Management and Administration
Certified Associate in Project Management (CAPM)	Business, Management and Administration
Certified Global Business Professional (CGBP)	Business, Management and Administration
Customer Service and Sales Certification	Business, Management and Administration
Lean Six Sigma (check on black vs green belt above)	Business, Management and Administration
Microsoft Office Specialist (MOS) - Excel	Business, Management and Administration
Microsoft Office Specialist (MOS) - Outlook 2010	Business, Management and Administration
Microsoft Office Specialist (MOS) - PowerPoint 2010	Business, Management and Administration
MS Office Applications	Business, Management and Administration
Professional Administrative Certification of Excellence (PACE)	Business, Management and Administration
Project Management Professional (PMP)	Business, Management and Administration
Quickbooks Certification	Business, Management and Administration
Real Estate License - Salesperson	Business, Management and Administration
Six Sigma Black Belt	Business, Management and Administration
Six Sigma Green Belt	Business, Management and Administration
Enrolled Agent (EA)	Finance
Financial Risk Manager (FRM)	Finance
Investment Foundation (CFA)	Finance
Adobe Create Cloud Tools	Information Technology
Apple Certified Support Professional (ACSP)	Information Technology
AWS Academy Cloud Architecture	Information Technology
AWS Academy Cloud Foundations	Information Technology
Certified Ethical Hacker (CEH)	Information Technology
Certified Information Systems Security Professional (CISSP)	Information Technology
Certified Internet Web (CIW)	Information Technology
Cisco CCNP*	Information Technology
Cisco Certified Entry Networking Technician (CCENT)	Information Technology
Cisco Certified Network Associate (CCNA)	Information Technology
CompTIA A+ Certification	Information Technology
CompTIA Cloud+*+B133	Information Technology
CompTIA Linux+ Certification	Information Technology
CompTIA Network+ Certification	Information Technology
CompTIA Security+ Certification	Information Technology
CompTIA Server+ Certification	Information Technology
Computer Numeric Control (CNC)	Information Technology
ITIL V.3 Foundation	Information Technology
Programmable Logic Controls (PLCs)	Information Technology
Scrum Master Certified	Information Technology
Certified Welder (CW)	Manufacturing
DMM General Mineral Miner	Manufacturing
DMM Surface Foreman Open Pit	Manufacturing
Gas Metal Arc Welding (GMAW)	Manufacturing
Gas Tungsten Arc Welding (GTAW)	Manufacturing
Manufacturing Technician Level 1 (MT1)	Manufacturing
NIMS Duty Area 1 Mechanical Operations	Manufacturing
NIMS Duty Area 2 Basic Mechanical Systems	Manufacturing
NIMS Duty Area 3 Basic Hydraulics	Manufacturing
NIMS Duty Area 4 Basic Pneumatic Systems	Manufacturing
NIMS Duty Area 5 Electrical Systems	Manufacturing
NIMS Duty Area 6 Electronic Control Systems	Manufacturing
NIMS Duty Area 7 Process Control Systems	Manufacturing
NIMS Duty Area 8 Maintenance Welding -	Manufacturing
NIMS Duty Area 9 Maintenance Piping	Manufacturing
NIMS Machining Level 1 CNC Drill Press	Manufacturing
NIMS Machining Level 1 CNC Lathe Operations	Manufacturing
NIMS Machining Level 1 CNC Milling Operations	Manufacturing
NIMS Machining Level 1 CNC milling Programming Set up and Operations	Manufacturing
NIMS Machining Level 1 Manual Milling	Manufacturing
NIMS Machining Level 1 Planning , Bench work and Layout	Manufacturing
NIMS Machining Level 1 Measurements, Materials and Safety	Manufacturing

Patent Activity Across Industry and Research Institutions

- Significant level of patent activity each year
- Most inventors are not associated with university technology transfer – university generates patent issuances of around 30+ per year
- Interestingly, IT among top areas But lots of life sciences as well

Total Patents, 2014-17


Region 9: Piedmont Opportunity Corridor	2014	2015	2016	2017
Patent Counts	459	477	567	421



Leading Areas of Patent Activity, 2010-17

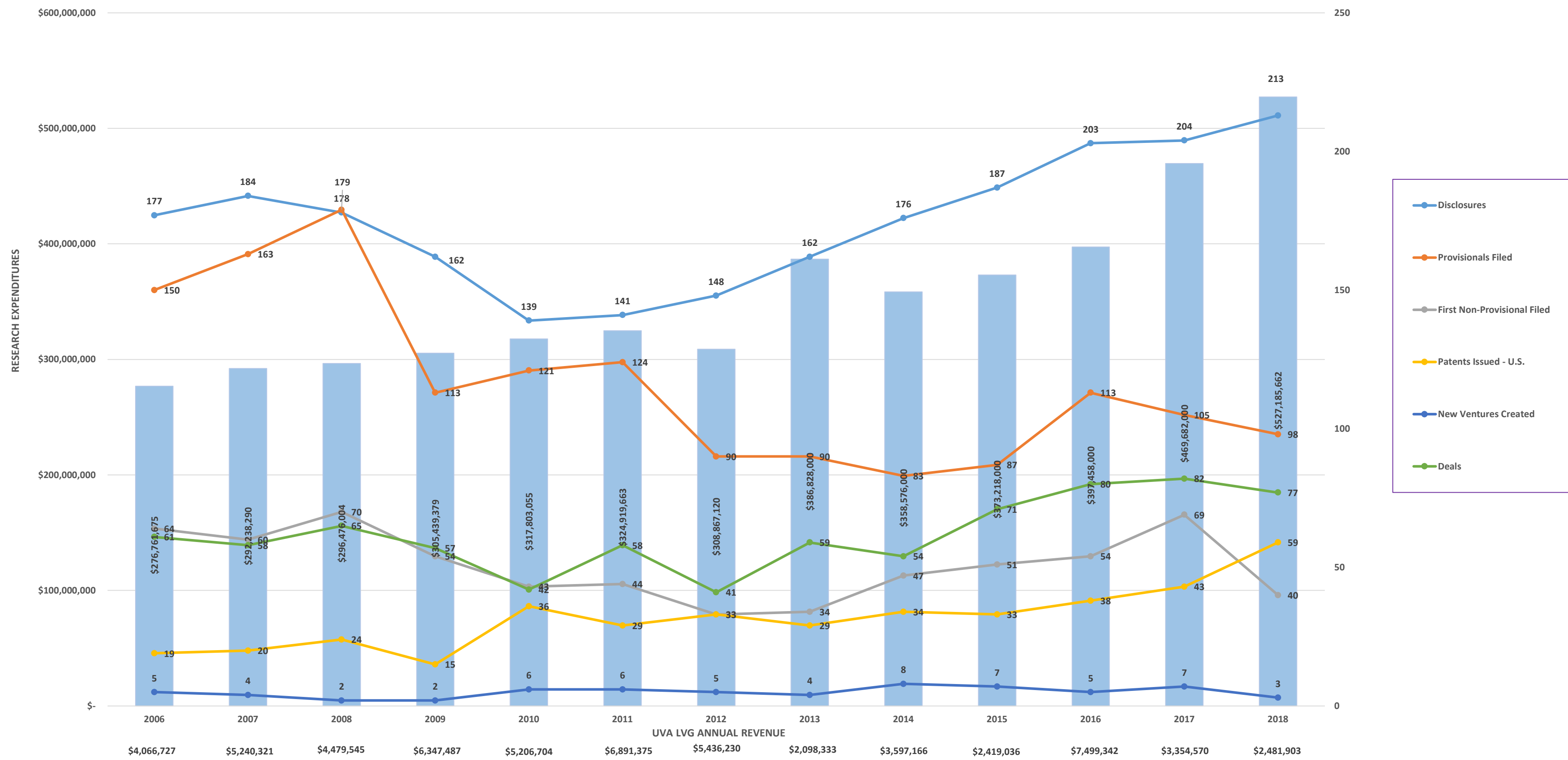
Technology Class Area	# of Patents, by Inventor, 2010-2017
Digital computing or data processing equipment or methods, specially adapted for specific functions	85
Network architectures or network communication protocols for network security	54
Diagnostic medical devices	50
Electronic shopping or e-commerce	45
Digital user interfaces and input/output systems	42
Biopharmaceuticals	41
Video games	38
Database administration and management	33
Surgical devices	32
Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way	32
Medical prosthetics, filters, and other implantable devices	31
Computer processing and task management systems	30
Network-specific arrangements or communication protocols supporting networked applications	30
Security arrangements for protecting computers, components thereof, programs or data against unauthorized activity	27
Arrangements for software engineering	27

Source: U.S. Patent & Trademark Office data from Thomson Reuters Thomson Innovation patent analysis database.



Ecosystem Element	Measure	GO VA Region 9	VA	U.S.	Benchmarking Groups: Median Value			
					Large Tech Hubs	Mid-sized Regions	Rural with Major Research Anchor	Rural with No Major Research Anchor
SBIR/STTR Awards	SBIR, STTR Award Funding per Capita, Avg. 2014-17	\$45	\$15	\$8	\$17	\$5	\$30	\$0.30
	SBIR, STTR % Pt. Change in Share of Award Funding, Avg. 2010-13 to 2014-17	0.05	-0.56	-	0.09	0.03	-0.04	0.00
	Number of Phase 1 Awards, 2010-2017	190	1,796	17,802	486	44	119	2
	Number of Phase 2 Awards, 2010-2017	118	935	10,002	235	33	49	0
University Technology Transfer & Commercialization	Avg. Annual Univ. Start-ups, 2014-16	7	17	911	28	5	21	-
	Avg. Startups Formed per \$10M Univ. Research, 2014-16	0.19	0.15	0.16	0.13	0.10	0.36	-
	Avg. Licenses/Options Executed per \$10M Univ. Research, 2014-16	1.81	1.12	1.14	1.54	1.03	2.87	-

UVA LVG Key Metrics: FY 2006 - FY 2018



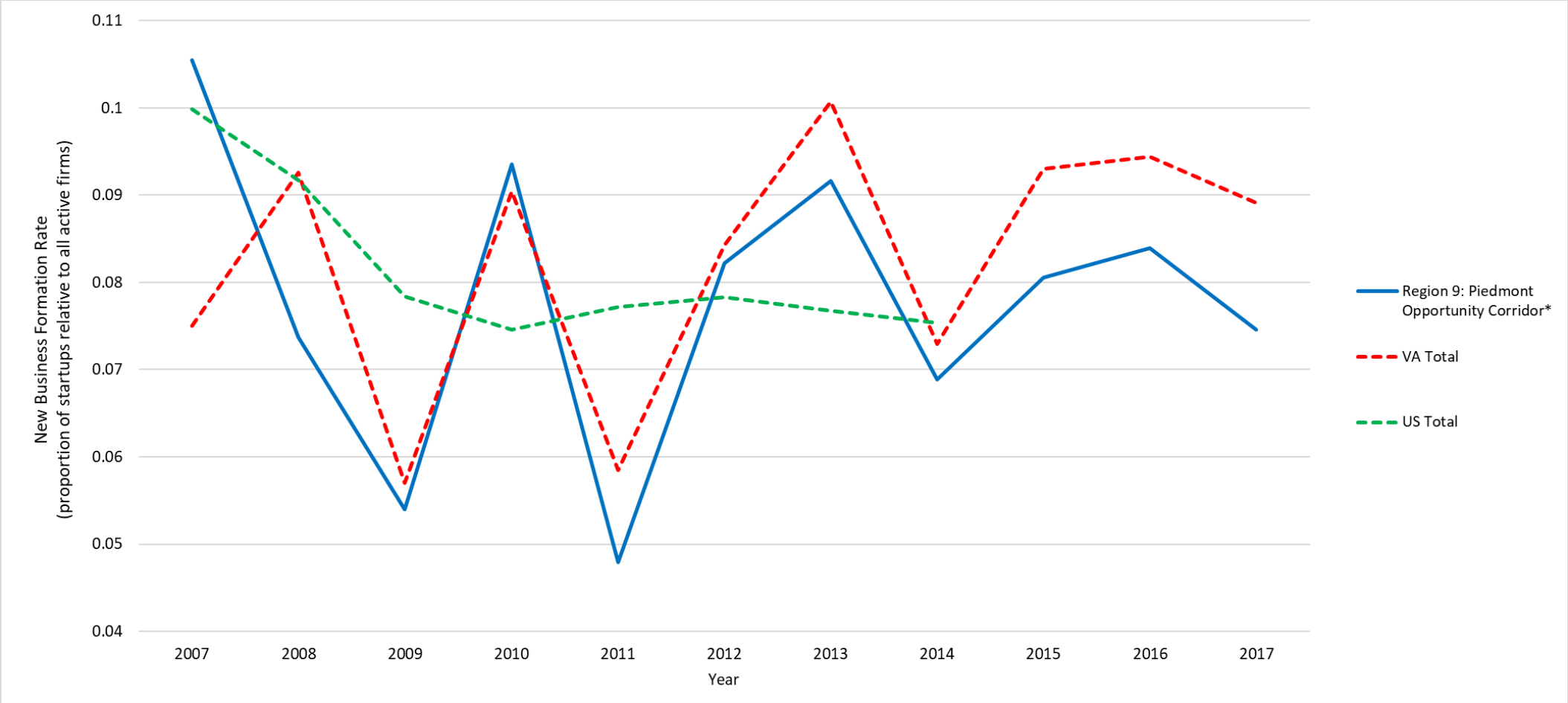
BDRC Profile of Startup Activity Trends in Region

Founding Year of Startup Cohort*	Number of Startups in Traded Sector Industries	Number of Startups Surviving by 2017	Start-up Employment Levels 2017
2007	370	115	1,082
2008	239	77	454
2009	140	53	355
2010	332	121	597
2011	110	54	243
2012	277	132	694
2013	301	140	878
2014	199	125	791
2015	224	168	965
2016	231	184	1,037
2017	148	148	760

*Composed of all new non-branch firms with first recorded employment activity in a given year

Overall New Business Formation Rates for Region Based on BDRC Firm Level Data

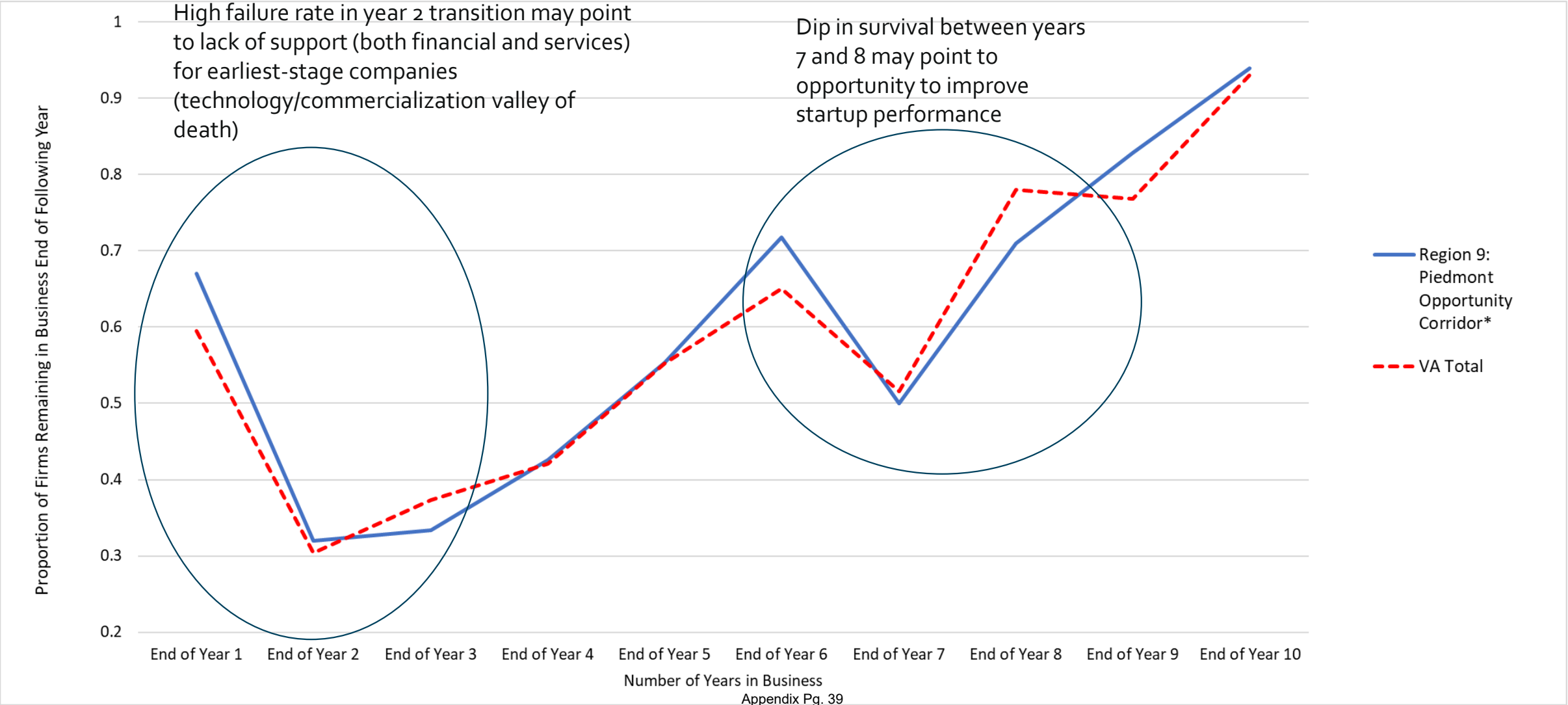
- Region 9 started higher than U.S. and State, but has had a sharper fall-off in recent years – with lots of volatility



*US new business formation rates available to 2014 via US Longitudinal Business Database

Year over Year Survival Rate Trends in Regional Traded Sector Startups

Cumulative 10-year startup cohort survival rates for region are 52.7% compared to a VA statewide rate 53.5%



Appendix Pg. 39

*Startups defined as having firm age <10 years as of 2017

	2016							2018					
	All	Self Empl. 1	2 to 9	10 to 99	100 to 499	500+		All	Self Empl. 1	2 to 9	10 to 99	100 to 499	500+
Albemarle	72,311	612	13,563	24,413	11,123	22,600		75,612	666	14,092	23,853	12,667	24,334
Charlottesville	63,014	543	13,340	23,073	8,406	17,652		80,418	562	13,469	21,598	9,726	35,063
Culpeper	19,507	242	5,508	8,804	3,903	1,050		19,321	238	5,699	8,313	4,021	1,050
Fauquier	25,400	343	8,344	12,272	3,340	1,101		25,880	338	9,016	12,495	2,930	1,101
Fluvanna	5,387	104	1,684	2,244	1,355	-		5,508	110	1,773	2,370	1,255	-
Greene	4,669	98	1,601	2,310	660	-		4,823	115	1,634	2,414	660	-
Louisa	8,925	142	2,175	3,357	1,751	1,500		9,458	164	2,539	3,644	1,611	1,500
Madison	4,306	77	1,289	1,990	450	500		4,365	73	1,311	2,031	450	500
Nelson	5,014	118	1,617	2,155	600	524		5,014	110	1,739	2,141	500	524
Orange	10,298	144	2,919	4,135	2,300	800		10,943	146	3,240	4,327	2,430	800
Rappahannock	2,015	61	1,120	729	105	-		2,283	57	1,134	987	105	-
TOTALS REG 9	220,846	2,484	53,160	85,482	33,993	45,727		243,625	2,579	55,646	84,173	36,355	64,872
Data from Youreconomy.org													

Change 2016 to 2018						% Change 2016 to 2018					
All	Self Empl.	1 to 9	10 to 99	100 to 499	500+	All	Self Empl.	1 to 9	10 to 99	100 to 499	500+
3,301	54	529	(560)	1,544	1,734	5%	9%	4%	-2%	14%	8%
17,404	19	129	(1,475)	1,320	17,411	28%	3%	1%	-6%	16%	99%
(186)	(4)	191	(491)	118	-	-1%	-2%	3%	-6%	3%	0%
480	(5)	672	223	(410)	-	2%	-1%	8%	2%	-12%	0%
121	6	89	126	(100)	-	2%	6%	5%	6%	-7%	
154	17	33	104	-	-	3%	17%	2%	5%	0%	
533	22	364	287	(140)	-	6%	15%	17%	9%	-8%	0%
59	(4)	22	41	-	-	1%	-5%	2%	2%	0%	0%
-	(8)	122	(14)	(100)	-	0%	-7%	8%	-1%	-17%	0%
645	2	321	192	130	-	6%	1%	11%	5%	6%	0%
268	(4)	14	258	-	-	13%	-7%	1%	35%	0%	
22,779	95	2,486	(1,309)	2,362	19,145	10%	4%	5%	-2%	7%	42%

Potential Average Annual Occupation Gaps over 10 Years in Piedmont Workforce Network (WDA 6)							
SOC	Title	Annual Supply Gap	Current Employment 2019Q1	Annual Growth Demand	Annual Sep Demand	Total Annual Demand	Projected Employment 2029
29-0000	Healthcare Practitioners and Technical Occupations	(107)	9,473	157	480	637	11,041
11-0000	Management Occupations	(50)	8,584	88	675	763	9,466
15-0000	Computer and Mathematical Occupations	(40)	4,899	72	332	405	5,622
13-0000	Business and Financial Operations Occupations	(39)	9,490	96	879	975	10,453
25-0000	Education, Training, and Library Occupations	(11)	13,890	133	1,152	1,285	15,219
17-0000	Architecture and Engineering Occupations	(11)	2,599	19	189	208	2,789
21-0000	Community and Social Service Occupations	(11)	2,920	52	328	380	3,439
19-0000	Life, Physical, and Social Science Occupations	(3)	1,864	18	173	191	2,040
41-0000	Sales and Related Occupations	(2)	539	5	54	59	592
31-0000	Healthcare Support Occupations	(2)	210	7	28	35	277
49-0000	Installation, Maintenance, and Repair Occupations	(1)	75	1	7	8	83
Source: JobsEQ®							
Data as of 2019Q1 unless noted otherwise							
Occupation wages are as of 2018 and represent the average for all Covered Employment. For MSAs, states, and the nation, wages in this analytic							
are aggregated from the county level details and so may not match exactly the wages for these types of regions shown elsewhere.							
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