2019 Fredericksburg Region Commuter Workforce Study

Prepared for the Fredericksburg Regional Alliance
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and GO Virginia

by

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Summary of Key Findings

- **Approximately 216,848 people regularly commuted to (17.5%), out (38.3%), or within (44.2%) the Fredericksburg Region** during the first quarter of 2019.
- The average commute time for residents of the Fredericksburg Region was 38.2 minutes. However, there was a wide variance in commute times. **In 2018 it is estimated that over forty-six thousand residents spent at least an hour commuting – one-way – to get to work**.
- Despite the workforce participation rate dropping slightly from 2013, the size of the region's workforce has increased. A larger percentage of the workforce commuted to jobs outside the Fredericksburg Region in early 2019 (42%) than did in 2013 (37%).
- Five of the top ten destinations for residential commuters were the individual counties and city within the Fredericksburg Region. Fairfax County, Prince William County, the District of Columbia, Arlington County and Henrico County were the top five commuting destinations external to the Fredericksburg Region.
- Similar to previous findings, commuters who live in the Fredericksburg Region and work outside the region tend to be more educated and make more money (even when controlling for education) than those who live and work in the region.
- As a whole, regardless of where they commute, **the competitiveness of the Fredericksburg Regional workforce has dramatically improved since 2013.** They are better educated (52.2% have some type of college degree) and are more easily able to find employment (unemployment decreased by 34.6%).

Introduction

In 2015 the Fredericksburg Regional Alliance at the University of Mary Washington (FRA), the University of Mary Washington (UMW), and the Fredericksburg Regional Chamber of Commerce commissioned a study to provide estimates about commuters and related demographics. This study was completed in January 2016 and was based on 2011-2013 data provided by the American Community Survey (ACS) – an ongoing set of research conducted by the United States Census Bureau. In 2019, FRA commissioned a follow-up study to use more recent data and to focus on the region as a whole, not just commuters leaving the Fredericksburg Region.

This study used three sources of information to provide current and reasonable estimates. Data from the 2013-2017 ACS study were obtained and then weighted with the most recent (July 1, 2018) US Census population estimates for the region to construct many of the tables in this report. Tables constructed in this manner will include 2018 in their captions.

Data was also obtained from JobsEQ, a data aggregation and compilation service. This organization collects data from the Bureau of Economic Analysis, Bureau of Labor Statistics, National Transportation Research Center, the Census Bureau, the Council for Community and Economic Research, the Department of Agriculture, the Department of Defense, the Employment and Training Administration, the National Center for Education Statistics, the Occupational Information Network, and the Social Security Administration. The most recent information available from JobsEQ comes from the first quarter of 2019. Tables constructed using data from this aggregator will include 2019 in their captions.

Even when using the same aggregating source, the totals in the following tables may vary slightly from each other as the data comes from a number of underlying surveys and measures and then percentages are applied to the data to represent the overall population. Since it is impossible to have a fraction of a person, each estimate may have a slightly different total. Differences between the underlying models may also have an impact. None of the estimates provided in this paper will be exactly right, but all are useful toward developing a better idea of the truth beneath the models. More detailed tables that may be of interest to those concerned with the individual municipalities are available in the appendices.

Additional microdata from the 2017 ACS study were obtained to replicate some of the tables in the 2016 report to estimate changes over time. This information is not available at the county or city level for all of municipalities within the Fredericksburg Region since the Census Bureau does not release this information for what they consider to be relatively unpopulated areas (less than 100,000 people). Instead, the George Washington Region North and South Public Use Microdata Areas (PUMAs) were combined since together they cover the Caroline, King George, Spotsylvania, and Stafford Counties plus the City of Fredericksburg. Since the purpose of these tables is to look for changes over time, these were not weighted by 2018 demographics. Thus, tables constructed in this manner will show the appropriate percentages for 2013 and 2017. The 2013 numbers were taken directly from the 2016 research report.

Finally, a few external references were also utilized. In these cases, footnotes provide the refences for readers who wish to learn more.

Basic Characteristics of Commuters

Workers include members of the Armed Forces and civilians who were at work the week before they completed the American Community Survey for the US Census Bureau.

Given the focus on commuting, this section focuses on those in the labor force who reside in the Fredericksburg Region (Caroline, King George, Spotsylvania, and Stafford Counties, and the City of Fredericksburg) and were sixteen years of age or older.

Table 1: 2018 Estimated Demographic Information: 16 Years and Older

	Total Population 16+	In Labor Force	Civilian Employment	Unemployed	Armed Forces
Caroline County	24,402	16,147	13,620	916	1,610
City of Fredericksburg	23,577	16,219	15,192	906	121
King George County	20,516	14,038	13,023	677	338
Spotsylvania County	104,169	70,669	66,414	3,840	416
Stafford County	115,019	79,703	72,471	3,228	4,005
Fredericksburg Region	**287,683**	**196,776**	**180,720**	**9,567**	**6,490**

The total estimated number of employed in the Fredericksburg Region in 2018 is 187,210 people. This includes both civilian employment (180,720) and those who serve in the armed forces (6,490). This is an increase of 19,320 total employed compared to the 2013 estimate provided in the 2016 report. All of the increase is due to additions in the civilian workforce (the number of projected active duty military in the region dropped by 330 people across the five-year gap between the estimates). Between 2013 and 2018, the region's workforce increased by approximately 16.2%.

Males between 40 to 59 were more likely to commute outside the region than those in other demographics.

Table 2: 2017 Work Force Age Ranges by Commute Destination

	Commute Outside Region	Live and Work Inside Region
16 to 19	1.0%	5.5%
20 to 29	12.5%	19.1%
30 to 39	18.2%	20.2%
40 to 49	26.4%	20.7%
50 to 59	31.0%	21.0%
60 to 69	9.5%	10.9%
70 and up	1.4%	2.6%
Mean Age	45.2	42.1
Median Age	47.0	42.0

The median age of those commuting outside the region was forty-seven years of age, compared to forty-two for those who lived and worked in the Fredericksburg Region. Based on the previous report, in 2013 the mean age of those commuting outside the region was 43 (less than 2017) and the mean age of those who lived and worked inside the region was 42 (same as 2017).

Table 3 2017 Work Force Gender by Commute Destination

	Commute Outside Region	Live and Work Inside Region
Male	67.7%	47.3%
Female	32.3%	52.7%

Two thirds of those commuting outside the Fredericksburg Region were men. Women were much more likely to live and work inside the region.

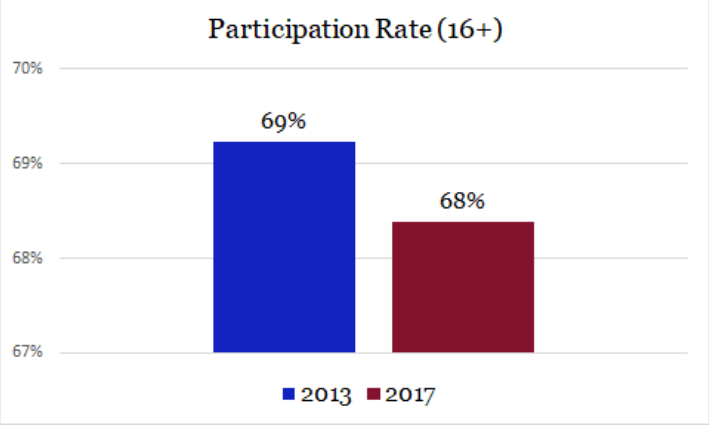
An estimated 68.4% of those 16 years of age and older and living within the Fredericksburg Region participate in the labor force. Unemployment for the region is a very low 3.3%.

Table 4: 2018 Estimated Demographic Information: Percentage 16 Years and Older

	In Labor Force	Civilian Employment	Unemployed	Armed Forces
Caroline County	66.2%	55.8%	3.8%	6.6%
City of Fredericksburg	68.8%	64.4%	3.8%	0.5%
King George County	68.4%	63.5%	3.3%	1.6%
Spotsylvania County	67.8%	63.8%	3.7%	0.4%
Stafford County	69.3%	63.0%	2.8%	3.5%
Fredericksburg Region	**68.4%**	**62.8%**	**3.3%**	**2.2%**

With the exception of the City of Fredericksburg, the labor force participation rate dropped across the region since 2013. This is not unexpected. The national average was also 62.8% in 2016 and is expected to drop to 61% by 2026.[1] Despite this trend, the size of the regional workforce has increased in absolute numbers due to population growth.

Figure 1: Fredericksburg Region Labor Force Participation Rate



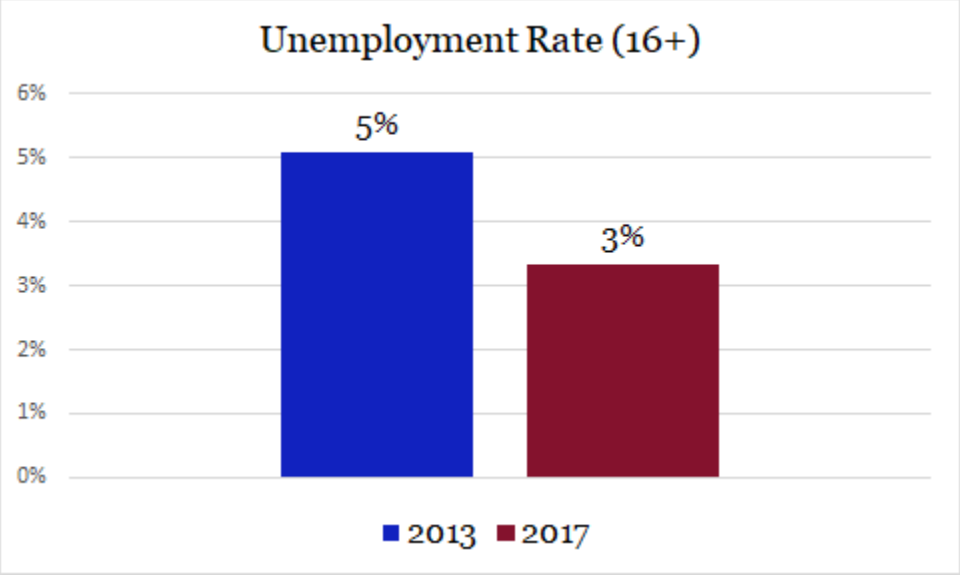
[1] https://www.bls.gov/opub/ted/2017/labor-force-participation-rates-projected-to-decline-in-the-coming-decade.htm

Table 5: Labor Force Change: 2013-2017

	In Labor Force			Unemployed		
	2013	2017	rate of change	2013	2017	rate of change
Caroline County	67.3%	66.2%	-1.7%	8.0%	3.8%	-53.3%
City of Fredericksburg	65.5%	68.8%	5.1%	7.1%	3.8%	-46.1%
King George County	69.8%	68.4%	-1.9%	4.8%	3.3%	-31.4%
Spotsylvania County	68.5%	67.8%	-0.9%	4.7%	3.7%	-21.7%
Stafford County	71.1%	69.3%	-2.5%	4.4%	2.8%	-36.2%
Fredericksburg Region	69.2%	68.4%	-1.2%	5.1%	3.3%	-34.6%

The unemployment rate has dropped in every municipality within the Fredericksburg region since 2013. This is a 34.6% decrease in regional unemployment between 2013 and 2017.

Figure 2: Fredericksburg Region Unemployment Rate



In 2019, an estimated 35.5% of Fredericksburg Region residents work in the county or city in which they live. 53.6% of regional workers work within the Fredericksburg Region itself.

Table 6: Estimated 2019 Population of Regional Commuters by Destination

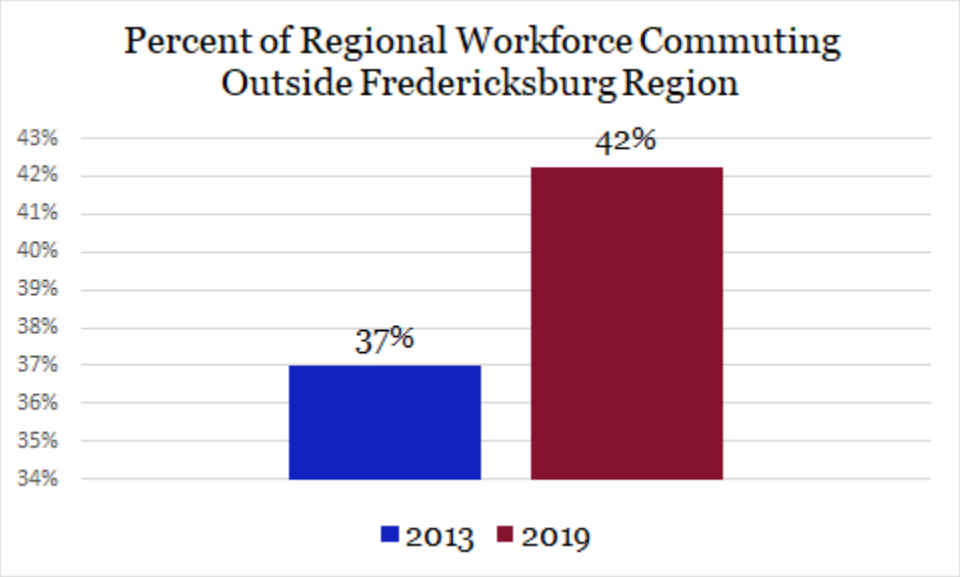
	Commute To	Commute From	Commute Within	Net Gain (Loss)
Caroline County	2,874	10,347	3,709	(7,473)
City of Fredericksburg	19,664	8,507	6,268	11,157
King George County	4,694	6,275	7,988	(1,581)
Spotsylvania County	18,273	40,808	22,145	(22,535)
Stafford County	24,718	49,516	23,410	(24,798)
Fredericksburg Region	37,866	83,117	95,865	(45,251)

Only the City of Fredericksburg has more commuters entering the municipality each day to work than it has leaving the city. All of the counties within the region send more residents to other places to work than they have coming to work within their counties.

An estimated 83,117 people commuted outside the region in the first quarter of 2019. This includes an estimated 4,898 members of the U.S. Armed Forces. The 2016 report omitted active duty military from its 2013 estimate of regional residents who commuted outside of the Fredericksburg Region. Comparing the 2013 estimate (61,639) and the 2019 non-military estimate of people commuting outside the region (78,219) shows a 26.9% growth in the number of residents commuting outside the region. The large growth in commuters from 2013 to 2019 reveals that the number of area residents commuting from the region is growing more rapidly than the increase in the labor force.

In 2013, approximately 37% of the Fredericksburg Region's workforce commuted outside the area. This has increased to 42% in early 2019.

Figure 3: 2013-19 Workforce Percentage Commuting from Region



These figures are in addition to the number of people who commute to (37,866) and within (95,865) the region. In early 2019, approximately **216,848 people regularly commuted to (17.5%), from (38.3%), or within (44.2%) the Fredericksburg Region**.

Table 7: Estimated 2019 Percentage of Regional Commuters by Destination

	Commute To	Commute From	Commute Within	Total Commuters
Caroline County	17.0%	61.1%	21.9%	16,930
City of Fredericksburg	57.1%	24.7%	18.2%	34,439
King George County	24.8%	33.1%	42.1%	18,957
Spotsylvania County	22.5%	50.2%	27.3%	81,226
Stafford County	25.3%	50.7%	24.0%	97,644
Fredericksburg Region	17.5%	38.3%	44.2%	216,848

Five of the top ten destinations for residential commuters were the individual counties and city within the Fredericksburg Region; these were also the top five starting points for those commuting to other parts of the region.

If we focus on municipalities external to the Fredericksburg Region, Fairfax County, Prince William County, the District of Columbia, Arlington County and Henrico County were the top five commuting destinations. Residents of Prince William, Fairfax, Loudoun, Orange, and Henrico counties were the top starting points for people commuting to the Fredericksburg Region from outside the region itself.

Table 8: Top 20 Commuting Destinations of Regional Residents with Inflow - 2019

Region	Inflow	Outflow	Net Change
Fairfax County, Virginia	3,611	19,782	(16,171)
Prince William County, Virginia	5,633	11,089	(5,456)
District of Columbia Excluding Exceptions	385	8,032	(7,647)
Arlington County, Virginia	407	4,330	(3,923)
Henrico County, Virginia	1,303	3,427	(2,124)
Loudoun County, Virginia	2,262	3,139	(877)
Alexandria City, Virginia	425	2,596	(2,171)
Hanover County, Virginia	1,162	2,526	(1,364)
Richmond City, Virginia	689	1,700	(1,011)
Chesterfield County, Virginia	1,204	1,651	(447)
Prince Georges County, Maryland	830	1,480	(650)
Manassas City, Virginia	340	1,309	(969)
Fauquier County, Virginia	1,074	1,195	(121)
Charles County, Maryland	631	1,070	(439)
Culpeper County, Virginia	1,156	1,063	93
Montgomery County, Maryland	362	894	(532)
Albemarle County, Virginia	305	876	(571)
Virginia Beach City, Virginia	998	812	186
Orange County, Virginia	2,062	808	1,254
Norfolk City, Virginia	577	615	(38)
Other	12,450	14,723	(2,273)
Total (w/out those who live and work in region)	37,866	83,117	(45,251)

Taken as a whole, the Fredericksburg Region exports more than forty-five thousand workers on a routine basis (the net after considering approximately eighty-three thousand residents commute to work outside of the region and almost thirty-eight thousand people from other locations commute to the region).

The top twenty destinations and starting points for each municipality are provided in the appendices.

While most commuters drove alone, carpooling was the second-most frequent method for residents of the Fredericksburg Region to get to work.

Table 9: Estimated Mode of Travel for Employed in 2018

	Drove Alone (Car, Truck, or Van)	Carpooled	Public Transportation	Walked	Other Means	Worked at Home
Caroline County	12,105	1,795	47	619	224	440
City of Fredericksburg	10,952	1,393	676	932	201	1,159
King George County	11,041	1,384	189	72	153	523
Spotsylvania County	52,379	8,605	1,676	426	777	2,967
Stafford County	56,955	10,524	3,159	716	744	4,378
Fredericksburg Region	**143,432**	**23,701**	**5,747**	**2,765**	**2,099**	**9,467**

In 2018, it is estimated that 89.3% of those employed drove to work in a car, van, or truck. 76.6% of the employed population drove by themselves, 12.7% carpooled, 3.1% used some form of public transportation (other than taxis), 1.5% walked, 1.1% used other means of transportation (including taxis, bike, and motorcycles), and 5.0% worked from home.

Table 10: Estimated Mode of Travel for Employed in 2018 - Percentages

	Drove Alone (Car, Truck, or Van)	Carpooled	Public Transportation	Walked	Other Means	Worked at Home
Caroline County	79.5%	11.8%	0.3%	4.1%	1.5%	2.9%
City of Fredericksburg	71.5%	9.1%	4.4%	6.1%	1.3%	7.6%
King George County	82.6%	10.4%	1.4%	0.5%	1.1%	3.9%
Spotsylvania County	78.4%	12.9%	2.5%	0.6%	1.2%	4.4%
Stafford County	74.5%	13.8%	4.1%	0.9%	1.0%	5.7%
Fredericksburg Region	76.6%	12.7%	3.1%	1.5%	1.1%	5.0%

There was some variance in the mode of transportation based on the income level of commuter. The Fredericksburg Region is unusual in that the wealthiest workers were the ones most likely to carpool. It is less surprising that those making less than $25,000 a year were much more likely to walk than those in higher income ranges.

Table 11: Mode of Transportation by Income Ranges

	Drove Alone (Car, Truck, or Van)	Carpooled	Public Transportation	Walked	Other Means	Worked at Home
$200,000 and more	61.1%	22.2%	5.6%	1.9%	1.9%	7.4%
$150,000 to $199,999	61.2%	15.5%	13.6%	1.0%	1.0%	7.8%
$100,000 to $149,999	70.6%	14.5%	7.3%	0.7%	1.0%	5.9%
$50,000 to $99,999	80.3%	9.3%	3.7%	0.7%	0.7%	5.3%
$25,000 to $49,999	84.0%	9.3%	1.6%	1.4%	0.5%	3.3%
Less than $25,000	76.1%	10.2%	0.7%	4.6%	1.1%	7.3%

Those making over $100,000 per year were also more likely to utilize public transportation than those with lower salaries. Rail is, by far, the most utilized form of public transportation in the Fredericksburg Region.

Table 12: Rail Travel as a Percent of Public Transportation

	Rail	Other Public Transportation
$200,000 and more	33.3%	66.7%
$150,000 to $199,999	92.9%	7.1%
$100,000 to $149,999	85.7%	14.3%
$50,000 to $99,999	81.8%	18.2%
$25,000 to $49,999	71.4%	28.6%
Less than $25,000	66.7%	33.3%

The average commute time for residents of the Fredericksburg Region was 38.2 minutes. However, there was a wide variance in commute times. **In 2018 it is estimated that over forty-six thousand residents spent at least an hour commuting – one-way – to get to work**.

Table 13: 2018 Fredericksburg Region Employed Residents by Commute Time

	<15	15-29	30-44	45-59	60+
Caroline County	2,650	4,051	4,051	2,132	2,345
City of Fredericksburg	5,742	4,410	1,822	1,072	2,266
King George County	2,538	3,889	2,685	1,149	3,100
Spotsylvania County	9,490	22,990	11,695	6,349	16,307
Stafford County	12,313	19,118	13,230	9,407	22,407
Fredericksburg Region	**32,733**	**54,458**	**33,483**	**20,109**	**46,425**

These findings are aligned with other research. Economists Igor Popov and Chris Salviati used ACS data to monitor changes in national commuting patterns between 2009 and 2017 for Apartment List, Inc.[2] They defined those that commuted 90 minutes or more (one-way) as super commuters. Popov and Salviati concluded that *Super commuters and those who work from home tend to be concentrated in locations and industries that offer above average wages. The median wage of super commuters is 20.9% greater than that of those who spend less than 90 minutes commuting each way.*

The following table was constructed using data that Chris Salviati made publicly available. It shows the percentage of the labor force that are super commuters for the Fredericksburg Region.

Table 14: Regional Super Commuters - 2009 to 2017

	2009	2017	rate of change
Caroline County	8.5%	6.7%	-20.3%
City of Fredericksburg	5.5%	7.3%	33.1%
King George County	8.1%	10.9%	35.3%
Spotsylvania County	11.4%	10.7%	-6.2%
Stafford County	8.8%	11.2%	28.2%
Fredericksburg Region	9.5%	10.3%	9.0%

[2] https://www.apartmentlist.com/rentonomics/traffic-trains-or-teleconference-the-changing-american-commute/

Education and Military Service

36.0% of the residents (25 years of age and older) in the Fredericksburg Region have at least one bachelor's degree. 13.8% also have a graduate or professional degree.

Table 15: Estimated 2018 Educational Attainment of Regional Residents (25 and Older)

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
Less than 9th grade	1,074	582	307	2,168	2,448	6,579
9th to 12th grade, no diploma	2,394	932	783	5,202	3,653	12,964
High school graduate (or equivalent)	7,737	3,971	4,742	24,788	20,011	61,249
Some college, no degree	4,235	3,491	4,063	19,367	21,007	52,163
Associate's degree	1,529	920	1,595	7,262	8,725	20,031
Bachelor's degree	2,827	4,200	3,776	18,825	23,653	53,281
Advanced degree	1,192	3,245	2,193	10,717	15,578	32,925
Total	**20,988**	**17,341**	**17,459**	**88,329**	**95,075**	**239,192**

Table 16: Estimated 2018 Educational Attainment of Regional Residents (25 and Older) - Percentage

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
No high school diploma	16.5%	8.7%	6.2%	8.3%	6.4%	8.2%
High school graduate (or equivalent)	36.9%	22.9%	27.2%	28.1%	21.0%	25.6%
Some college	27.5%	25.4%	32.4%	30.1%	31.3%	30.2%
Bachelor's degree	13.5%	24.2%	21.6%	21.3%	24.9%	22.3%
Advanced degree	5.7%	18.7%	12.6%	12.1%	16.4%	13.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

There was some variance in the educational attainment between the residents of the five municipalities that make up the Fredericksburg Region. As the home of the University of the Mary Washington, it is not surprising that the City of Fredericksburg has a greater percentage of residents with advanced degrees than the four counties.

The American Community Survey groups similar majors into five broad categories: Science and Engineering; Science and Engineering Related Fields; Business; Education; and Arts, Humanities, and Other. Science and Engineering includes majors such as Computers, Mathematics, and Statistics; Biological, Agricultural, and Environmental Sciences; Physical and Related Sciences; Psychology; Social Sciences; Engineering; and Multidisciplinary Studies. Arts, Humanities, and Other includes majors such as Literature and Languages, Liberal Arts and History, Visual and Performing Arts, Communications, and all majors that do not fit into another category.

Table 17: Field of Bachelor's Degree for First Major (25+) 2018

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
Science and Engineering	1,519	3,222	3,232	9,537	15,334	32,844
Science and Engineering Related Fields	343	351	381	2,082	2,486	5,643
Business	626	1,110	912	7,103	8,226	17,977
Education	594	774	619	3,712	3,572	9,271
Arts, Humanities and Other	937	1,988	826	7,109	9,613	20,473
Total	**4,019**	**7,445**	**5,970**	**29,543**	**39,231**	**86,208**

These numbers are significantly higher than those measured in the previous study. The change shows the workforce response to a growing demand for a highly educated workforce.

Table 18: Field of Bachelor's Degree for First Major (25+) 2018

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
Science and Engineering	37.8%	43.3%	54.2%	32.3%	39.1%	38.0%
Science and Engineering Related Fields	8.5%	4.7%	6.4%	7.0%	6.3%	6.6%
Business	15.6%	14.9%	15.3%	24.0%	21.0%	20.9%
Education	14.8%	10.4%	10.4%	12.6%	9.1%	10.8%
Arts, Humanities and Other	23.3%	26.7%	13.8%	24.1%	24.5%	23.8%

Table 19: Highest Level of Educational Attainment by Regional Work Status

	Commute Outside Region		Live and Work Inside Region	
	2013	2017	2013	2017
Advanced Degree	14%	19%	11%	18%
Bachelor's Degree	23%	26%	18%	23%
Sum of Bachelor's Degree and Advanced Degree	**37%**	**46%**	**29%**	**40%**
Associate Degree	7%	10%	8%	10%
Sum of People with a College Degree	**44%**	**55%**	**36%**	**50%**
Some College (no degree)	28%	22%	23%	21%
High School Diploma or Equivalent	25%	19%	32%	23%

As a group, those who live within the Fredericksburg Region and work outside of it have attained a higher level of education than those who live and work within the region. However, while still significant, this gap has narrowed since the previous study. In 2013, there was a difference of 8% between the percentage of people who commuted outside of the region and had some type of college degree (44%) and those who lived and worked within the region and had a similar degree (36%). In 2017, the difference was only 5% (55% compared to 50%). This also shows the dramatic increase in the overall education of the regional workforce in just four years. The average employee who lived and worked in the region in 2017 was more educated than the average employee who commuted outside the region in 2013.

Figure 4: Highest Level of Educational Attainment by Regional Work Status

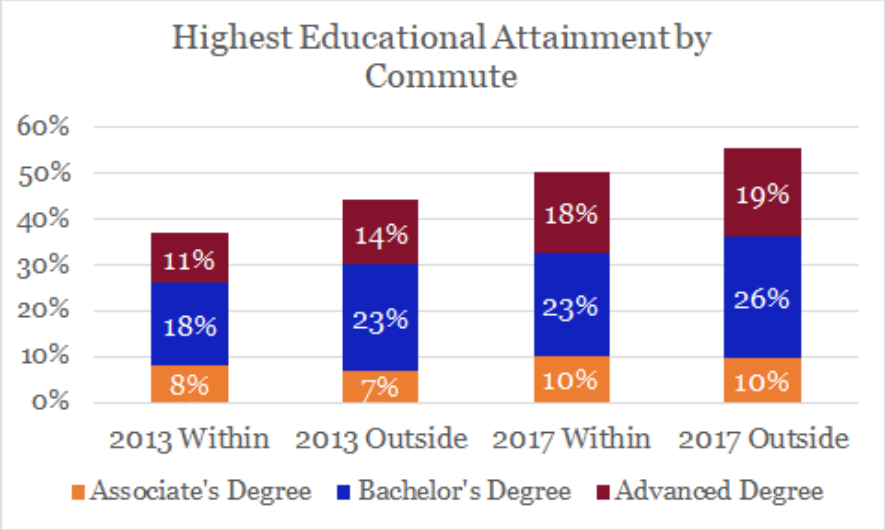
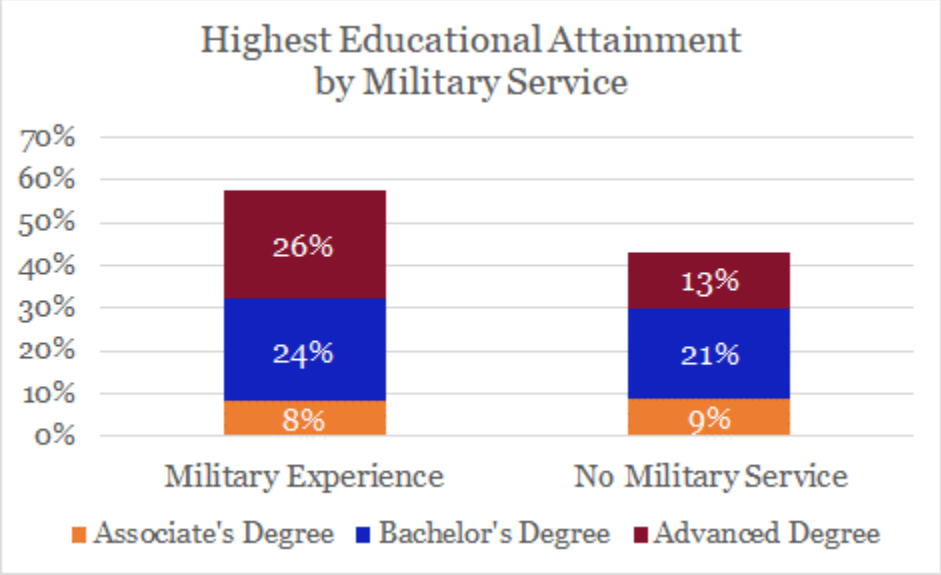


Table 20: Highest Level of Educational Attainment by Military Service - 2017

	Military Service	No Service
Advanced Degree	26%	13%
Bachelor's Degree	24%	21%
Sum of Bachelor's Degree and Advanced Degree	**49%**	**34%**
Associate Degree	8%	9%
Sum of People with a College Degree	**58%**	**43%**
Some College (no degree)	23%	21%
High School Diploma or Equivalent	17%	27%

There was a strong correlation between military service and higher educational attainment. Those with current or prior military service (including Reserves and National Guard) were much more likely to have advanced degrees than residents who had never served.

Figure 5: Highest Level of Educational Attainment by Military Service - 2017



As was found in the previous study, those that live in the Fredericksburg Region and work outside of the region are also more likely to have military experience than those that both live and reside inside the region.

Table 21: Military Experience by Regional Work Status

	Commute Outside Region		Live and Work Inside Region	
	2013	2017	2013	2017
Military Experience	28%	32%	12%	13%

Civilian Employment

The tables in this section provide details about the civilian employment of residents within the Fredericksburg region. It is important to understand that these numbers are much different than regional employment statistics, which provide measures of jobs within a region. Instead, this section focuses on jobs held by the residents – no matter where the jobs exist. Many of these jobs are external to the Fredericksburg Region and jobs within the region held by residents from outside the region are not captured. In other words, these tables provide an overview of how regional residents are currently employed.

69.0% of the employed civilians in the Fredericksburg Region work for a private organization (typically for-profit firms, but also include non-profits such as churches and charities), 27.1% work for government agencies (federal and local), and 3.9%[3] are self-employed.

Table 22: 2018 Estimate of Type of Civilian Employment

	Private Wage and Salary Workers	Government Workers	Self-Employed	Totals
Caroline County	10,095	2,883	641	13,619
City of Fredericksburg	11,020	3,726	447	15,193
King George County	7,945	4,607	471	13,023
Spotsylvania County	48,820	14,889	2,706	66,415
Stafford County	46,777	22,986	2,708	72,471
Fredericksburg Region	124,759	48,985	6,975	180,719

[3] This percentage only shows those that are self-employed for their primary occupation. It does not capture those who work for another organization full-time but have one or more part-time businesses.

The 2013-17 ACS uses thirteen general classifications to delineate the industries in which civilians work. These classifications are abbreviated on the tables in this section. Most are self-explanatory, but the Professional category is a bit vague. This category includes engineering, research and development, and most computer-related jobs.

Table 23: 2018 Estimated Civilian Workforce by Industry

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
Land	174	35	155	530	246	1,140
Construction	1,085	812	1,092	5,344	5,364	13,697
Manufacturing	886	426	548	2,584	1,969	6,413
Wholesale	645	277	243	1,494	1,161	3,820
Retail	1,947	1,983	1,511	9,127	7,647	22,215
Transportation	806	349	478	3,491	2,964	8,088
Information	124	350	149	1,049	789	2,461
Finance & Realty	842	1,187	445	4,083	4,522	11,079
Professional	996	2,060	1,747	8,011	10,567	23,381
Educ. & Health	2,912	3,348	2,181	12,752	14,896	36,089
Hospitality	904	1,907	912	6,548	5,054	15,325
Other	970	710	551	3,293	2,674	8,198
Public Admin.	1,329	1,748	3,011	8,110	14,617	28,815
Totals	13,620	15,192	13,023	66,416	72,470	180,721

Table 24: 2018 Percentage of Civilian Workforce by Industry

	Caroline County	City of Fredericksburg	King George County	Spotsylvania County	Stafford County	Fredericksburg Region
Land	1.3%	0.2%	1.2%	0.8%	0.3%	0.6%
Construction	8.0%	5.3%	8.4%	8.0%	7.4%	7.6%
Manufacturing	6.5%	2.8%	4.2%	3.9%	2.7%	3.6%
Wholesale	4.7%	1.8%	1.9%	2.2%	1.6%	2.1%
Retail	14.3%	13.1%	11.6%	13.7%	10.6%	12.3%
Transportation	5.9%	2.3%	3.7%	5.3%	4.1%	4.5%
Information	0.9%	2.3%	1.1%	1.6%	1.1%	1.4%
Finance & Realty	6.2%	7.8%	3.4%	6.1%	6.2%	6.1%
Professional	7.3%	13.6%	13.4%	12.1%	14.6%	12.9%
Educ. & Health	21.4%	22.0%	16.8%	19.2%	20.6%	20.0%
Hospitality	6.6%	12.6%	7.0%	9.9%	7.0%	8.5%
Other	7.1%	4.7%	4.2%	5.0%	3.7%	4.5%
Public Admin.	9.8%	11.5%	23.1%	12.2%	20.2%	15.9%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Income

Table 25: 2017 Percentage Distribution of Income by Location of Employment

	Commute Outside Region	Live and Work Inside Region
$200,000 and more	3.9%	2.9%
$150,000 to $199,999	9.5%	3.7%
$100,000 to $149,999	24.4%	13.3%
$50,000 to $99,999	38.6%	33.3%
$25,000 to $49,999	17.4%	30.1%
Less than $25,000	6.2%	16.6%
Mean Income	$ 91,351	$ 67,556
Median Income	$ 80,000	$ 50,000

Given the findings in the previous section that the Fredericksburg Region residents who commute outside the region tend to be more highly educated, one would expect them to also earn more. That is, in fact, the case.

Figure 6: 2017 Percentage Distribution of Income by Location of Employment

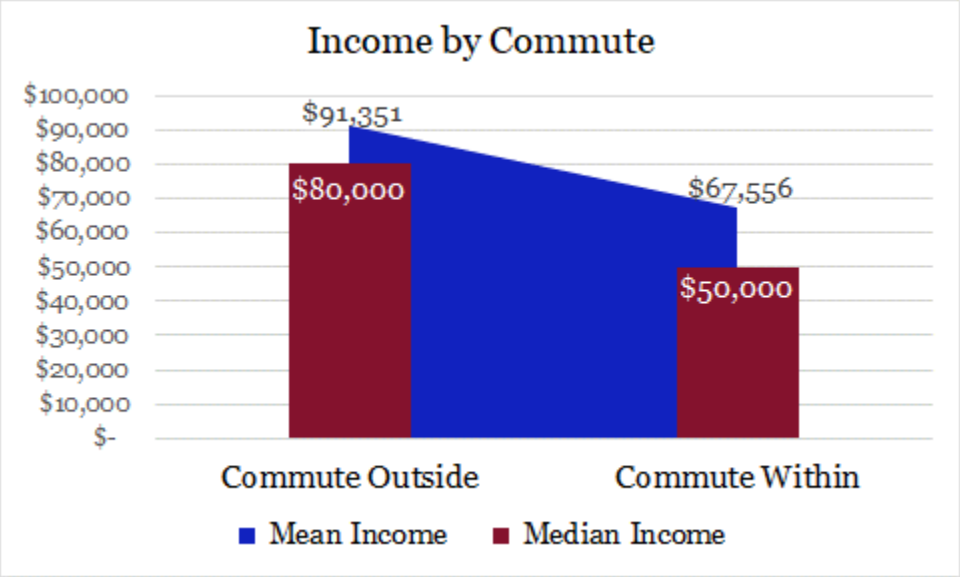
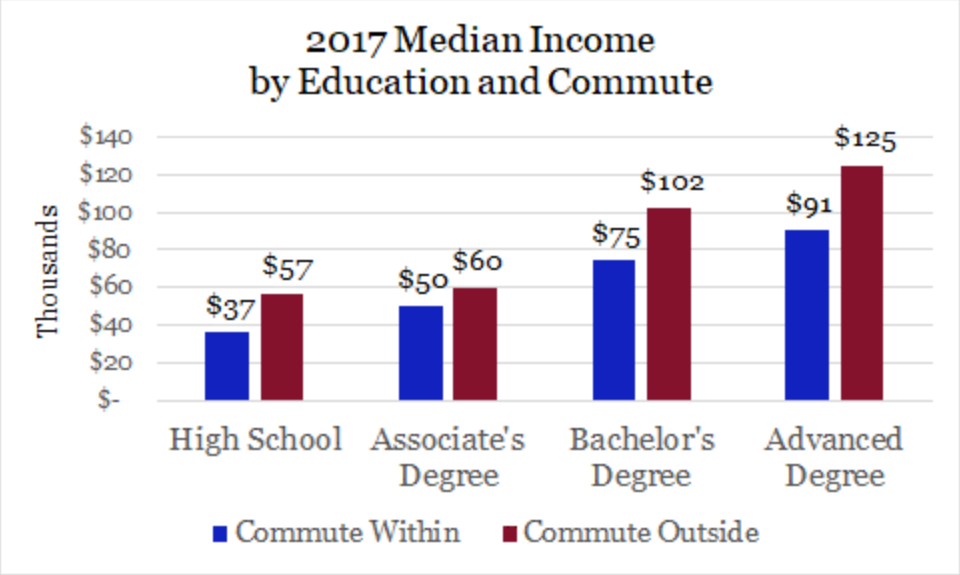


Table 26: Average Income by Level of Education and Commute (2017 and 2013)

	Commute Outside Region			Live and Work Inside Region		
	2017 Mean	2017 Median	2013 Mean	2017 Mean	2017 Median	2013 Mean
High School or equivalent	$ 63,371	$ 57,000	$ 59,230	$ 48,714	$ 36,800	$ 32,093
Associate	$ 72,984	$ 60,000	$ 73,985	$ 54,336	$ 50,000	$ 44,922
Bachelor Degree	$ 109,617	$ 101,900	$ 93,329	$ 85,110	$ 75,000	$ 68,803
Advanced Degree	$ 129,390	$ 125,000		$ 105,176	$ 91,000	

However, do those who commute out of the Fredericksburg area make more in addition to the premium for more education?

Figure 7: Median Income by Level of Education and Commute (2017)



As was the case with the previous study, people who live in the Fredericksburg Region and work out of the region make more at every level of education compared to those who live and work in the region.

There was one surprising finding when comparing the rate of increase in the average income from 2013 to 2017 by the level of education attained. The increase in average salary was similar for those with a bachelor's degree (17.5% for those commuting out of the region, 19.2% for those working in the Fredericksburg Region). However, while a premium for commuting outside the region still exists for those whose current education level is at the High School and Associate's level, the increase in average salaries associated with these levels of educational attainment varied greatly between the groups.

For residents who commuted outside of the Fredericksburg Region, the average salary increased by 7% for those formal schooling stopped with a high school degree and dropped 1.4% for those whose highest level of schooling was an Associate's degree. Residents with these levels of educational attainment who worked within the Fredericksburg Region saw increases in their average salary of 34.1% (high school degree) and 17.3% (Associate's degree). While the reasons behind this difference is outside the scope of this study, it is reasonable that the historically low level of unemployment in the Fredericksburg Region (3.3%) is driving up the wages of the relatively less educated faster than they are increases in the most common commuting destinations outside of the region. The increase in local certification options at local high schools and community colleges may be another reason for the increase. The Census does not individually track those who obtain certificates. Thus, it is certainly possible that a large portion of the increase in local wages for those with high school diplomas and Associate's degrees is going to graduates who also have obtained certification in a specialty such as an Emergency Medical Technician.

Appendix A: Caroline County

Table 27: Top 20 Commuting Destinations of Caroline County Residents - 2019

Region	Commuters
Caroline County, Virginia	3,709
Hanover County, Virginia	1,194
Spotsylvania County, Virginia	1,048
Henrico County, Virginia	987
Stafford County, Virginia	849
Fairfax County, Virginia	785
Fredericksburg City, Virginia	650
Richmond City, Virginia	557
Chesterfield County, Virginia	471
District of Columbia Excluding Exceptions	352
Prince William County, Virginia	299
Prince Georges County, Maryland	185
Arlington County, Virginia	173
King George County, Virginia	161
Newport News City, Virginia	148
Alexandria City, Virginia	139
Virginia Beach City, Virginia	114
Chesapeake City, Virginia	113
Goochland County, Virginia	101
Norfolk City, Virginia	95

Table 28 Top 20 Residences for Those Commuting to Caroline County in 2019

Region	Commuters
Caroline County, Virginia	3,709
Spotsylvania County, Virginia	573
Hanover County, Virginia	303
Henrico County, Virginia	232
Stafford County, Virginia	149
Chesterfield County, Virginia	133
Richmond City, Virginia	83
Fredericksburg City, Virginia	81
Louisa County, Virginia	72
King George County, Virginia	65
Prince William County, Virginia	64
King William County, Virginia	62
Westmoreland County, Virginia	41
Essex County, Virginia	41
Fairfax County, Virginia	41
King and Queen County, Virginia	39
Orange County, Virginia	38
Culpeper County, Virginia	31
Virginia Beach City, Virginia	29
Rockingham County, Virginia	29

Appendix B: City of Fredericksburg

Table 29: Top 20 Commuting Destinations of City of Fredericksburg Residents - 2019

Region	Commuters
Fredericksburg City, Virginia	6,268
Stafford County, Virginia	1,677
Spotsylvania County, Virginia	1,666
Fairfax County, Virginia	1,089
Prince William County, Virginia	612
District of Columbia Excluding Exceptions	389
Arlington County, Virginia	242
Henrico County, Virginia	232
Loudoun County, Virginia	222
Alexandria City, Virginia	130
King George County, Virginia	127
Albemarle County, Virginia	117
Richmond City, Virginia	111
Hanover County, Virginia	105
Culpeper County, Virginia	102
Chesterfield County, Virginia	89
Caroline County, Virginia	81
Fauquier County, Virginia	77
Manassas City, Virginia	69
Prince Georges County, Maryland	64

Table 30 Top 20 Residences for Those Commuting to the City of Fredericksburg in 2019

Region	Commuters
Spotsylvania County, Virginia	6,821
Fredericksburg City, Virginia	6,268
Stafford County, Virginia	4,515
Prince William County, Virginia	797
Fairfax County, Virginia	685
Caroline County, Virginia	650
Loudoun County, Virginia	513
Orange County, Virginia	496
King George County, Virginia	378
Fauquier County, Virginia	301
Henrico County, Virginia	295
Chesterfield County, Virginia	271
Culpeper County, Virginia	212
Louisa County, Virginia	211
Hanover County, Virginia	208
Richmond City, Virginia	186
Virginia Beach City, Virginia	172
Westmoreland County, Virginia	156
Prince Georges County, Maryland	98
Frederick County, Virginia	90

Appendix C: King George County

Table 31: Top 20 Commuting Destinations of King George County Residents - 2019

Region	Commuters
King George County, Virginia	7,988
District of Columbia Excluding Exceptions	792
Fairfax County, Virginia	780
Stafford County, Virginia	677
Charles County, Maryland	665
Spotsylvania County, Virginia	402
Fredericksburg City, Virginia	378
Arlington County, Virginia	316
Prince William County, Virginia	301
Alexandria City, Virginia	211
Loudoun County, Virginia	198
Henrico County, Virginia	142
Prince Georges County, Maryland	110
Westmoreland County, Virginia	83
Richmond City, Virginia	67
Caroline County, Virginia	65
St. Marys County, Maryland	60
Montgomery County, Maryland	58
Hanover County, Virginia	55
Chesterfield County, Virginia	50

Table 32 Top 20 Residences for Those Commuting to King George County in 2019

Region	Commuters
King George County, Virginia	7,988
Stafford County, Virginia	642
Spotsylvania County, Virginia	559
Westmoreland County, Virginia	445
Fairfax County, Virginia	279
Charles County, Maryland	231
Prince Georges County, Maryland	220
Prince William County, Virginia	186
Caroline County, Virginia	161
Loudoun County, Virginia	150
Culpeper County, Virginia	134
District of Columbia Excluding Exceptions	129
Fredericksburg City, Virginia	127
Hanover County, Virginia	75
Montgomery County, Maryland	75
Virginia Beach City, Virginia	67
Chesterfield County, Virginia	61
St. Marys County, Maryland	58
Essex County, Virginia	53
Calvert County, Maryland	52

Appendix D: Spotsylvania County

Table 33: Top 20 Commuting Destinations of Spotsylvania County Residents - 2019

Region	Commuters
Spotsylvania County, Virginia	22,145
Stafford County, Virginia	7,205
Fredericksburg City, Virginia	6,821
Fairfax County, Virginia	5,884
Prince William County, Virginia	3,063
District of Columbia Excluding Exceptions	2,411
Loudoun County, Virginia	1,094
Henrico County, Virginia	990
Arlington County, Virginia	964
Hanover County, Virginia	741
Culpeper County, Virginia	660
Alexandria City, Virginia	613
Caroline County, Virginia	573
Orange County, Virginia	568
King George County, Virginia	559
Albemarle County, Virginia	500
Chesterfield County, Virginia	446
Richmond City, Virginia	445
Manassas City, Virginia	441
Fauquier County, Virginia	420

Table 34 Top 20 Residences for Those Commuting to Spotsylvania County in 2019

Region	Commuters
Spotsylvania County, Virginia	22,145
Stafford County, Virginia	4,098
Fredericksburg City, Virginia	1,666
Prince William County, Virginia	1,098
Fairfax County, Virginia	1,091
Caroline County, Virginia	1,048
Orange County, Virginia	852
Loudoun County, Virginia	748
Chesterfield County, Virginia	435
Henrico County, Virginia	428
Louisa County, Virginia	419
Culpeper County, Virginia	403
King George County, Virginia	402
Hanover County, Virginia	382
Fauquier County, Virginia	281
Virginia Beach City, Virginia	242
Westmoreland County, Virginia	228
Richmond City, Virginia	222
Prince Georges County, Maryland	173
Frederick County, Virginia	148

Appendix E: Stafford County

Table 35: Top 20 Commuting Destinations of Stafford County Residents - 2019

Region	Commuters
Stafford County, Virginia	23,410
Fairfax County, Virginia	11,244
Prince William County, Virginia	6,813
Fredericksburg City, Virginia	4,515
Spotsylvania County, Virginia	4,098
District of Columbia Excluding Exceptions	4,087
Arlington County, Virginia	2,635
Loudoun County, Virginia	1,558
Alexandria City, Virginia	1,504
Henrico County, Virginia	1,076
Prince Georges County, Maryland	794
Manassas City, Virginia	723
King George County, Virginia	642
Fauquier County, Virginia	615
Chesterfield County, Virginia	595
Richmond City, Virginia	520
Montgomery County, Maryland	464
Hanover County, Virginia	431
Virginia Beach City, Virginia	385
Fairfax City, Virginia	283

Table 36 Top 20 Residences for Those Commuting to Stafford County in 2019

Region	Commuters
Stafford County, Virginia	23,410
Spotsylvania County, Virginia	7,205
Prince William County, Virginia	3,489
Fredericksburg City, Virginia	1,677
Fairfax County, Virginia	1,515
Caroline County, Virginia	849
Loudoun County, Virginia	833
King George County, Virginia	677
Orange County, Virginia	660
Virginia Beach City, Virginia	488
Fauquier County, Virginia	469
Culpeper County, Virginia	376
Norfolk City, Virginia	356
Prince Georges County, Maryland	317
Henrico County, Virginia	307
Chesterfield County, Virginia	305
Louisa County, Virginia	251
Westmoreland County, Virginia	242
Charles County, Maryland	229
Alexandria City, Virginia	209

Center for Business Research

The University of Mary Washington has established the Center for Business Research[4] (CBR), formerly known as Center for Economic Research. The purpose is to support economic development and business research at the University of Mary Washington. The CBR assesses the region's needs for research and undertakes projects.

The CBR is created to deliver the requested research. Its goal is to collaboratively plan and conduct research activities by the College of Business (COB) faculty and interested UMW faculty members from the UMW Colleges of Arts and Science and Education, based on their interest and skill sets for regional impact-related activities in the future. It is, however, primarily driven by the collaborative efforts of the COB faculty.

As a local source for regional economic analysis and expertise, the Center was strategically created as a part of UMW's College of Business to capitalize on access to highly regarded faculty and opportunities for student engagement. Through research employment opportunities, the Center will provide hands-on learning opportunities for students to assist the Center's faculty in the research and preparation of reports on regional economy.

University of Mary Washington (UMW) - a coeducational, public liberal arts and sciences institution in Fredericksburg, Virginia, that offers graduate and undergraduate degree programs. Founded in 1908, UMW has campuses in Stafford, Fredericksburg and Dahlgren, providing support for regional economic development as an important

[4] This description was graciously provided by the CBR's director, Dr. Mukesh Srivastava.

element of its mission to improve the regional quality of life. UMW has approximately 4,500 enrolled undergraduate and graduate students from 40 states and many foreign countries.