



Timothy McLaughlin  
Chair  
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## FAMPO RESOLUTION 19-10

### ENDORING REGIONAL BASE YEAR AND FUTURE YEARS POPULATION, HOUSEHOLD AND EMPLOYMENT CONTROL TOTALS FOR USE IN THE 2050 LONG RANGE TRANSPORTATION PLAN

**WHEREAS**, FAMPO staff have been working with the Technical Advisory Committee (TAC) to develop base year (2017) and future year (2050) population, households and employment control totals for each locality for use in the Region's 2050 Long-Range Transportation Plan (LRTP); and

**WHEREAS**, these population, households and employment control totals are an integral part of developing traffic and land use forecasts for the Region, out to 2050; and

**WHEREAS**, the population, households and employment control totals and the methodology used to develop these figures are contained in the attached memorandum;

**NOW, THEREFORE, BE IT RESOLVED** that the Fredericksburg Area Metropolitan Planning Organization hereby endorses the base year and future years population, household and employment control totals for use in the 2050 Long Range Transportation Plan.

Adopted by the Policy Committee at its meeting on October 15, 2018.

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Timothy McLaughlin, Chair  
Fredericksburg Area Metropolitan Planning Organization  
Policy Committee

## MEMORANDUM

TO: Technical Advisory Committee

FROM: FAMPO Staff

DATE: October 5, 2018

RE: GWRC 2050 Socioeconomic Data Projections

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This memorandum provides an outline for 2050 socioeconomic data projections per jurisdiction. These projections were initially based off work Cambridge Systematics (CS) completed for the 2045 Long Range Transportation Plan (LRTP). After gathering feedback from jurisdictions, the CS projections were determined to be overly aggressive. The updated projections were subsequently adjusted and decreased to more accurately reflect the population growth rate in the Region. The updated demographic data is based upon the Weldon Cooper Center for Public Service (Weldon Cooper) population estimates, the U.S. Census American Community Survey (ACS) data, the Virginia Employment Commission (VEC) and the work completed by Cambridge Systematics.

This memorandum includes projections for the four major areas originally covered by CS: population, number of households, total employment and retail employment. The base year has been adjusted to 2017 to reflect the most recent data from the ACS and Weldon Cooper. Interim years correspond with the years present in the CS analysis, with the addition of 2020, 2030 and 2040 interim years.

## POPULATION

The population figures provide the best context for growth within the Region. The population projections are based upon a yearly growth percentage calculated from the average growth from 2010 to 2017, according to Weldon Cooper. That average was then scaled up or down based on input from locality staff. Table 1 shows the population growth percentages by jurisdiction, beginning with the average growth from 2010-2017. For the City of Fredericksburg, 1.5 percent growth was assumed until 2030, then decreased to 1 percent to indicate a slowing of expansion as the number of infill opportunities decreases.

**Table 1: Population Growth Percentages**

Jurisdiction	Average Growth (2010-2017)	Scaled Growth
Stafford	1.64%	2%
Spotsylvania	.93%	1.5%
Fredericksburg	1.84%	1.5% / 1%
King George	.95%	1%
Caroline	.62%	1%

Population projections beyond 2017 were calculated using the following formula:

$$(1 + (\textit{scaled growth percentage}))^{(\textit{number of years between each interim year})}$$

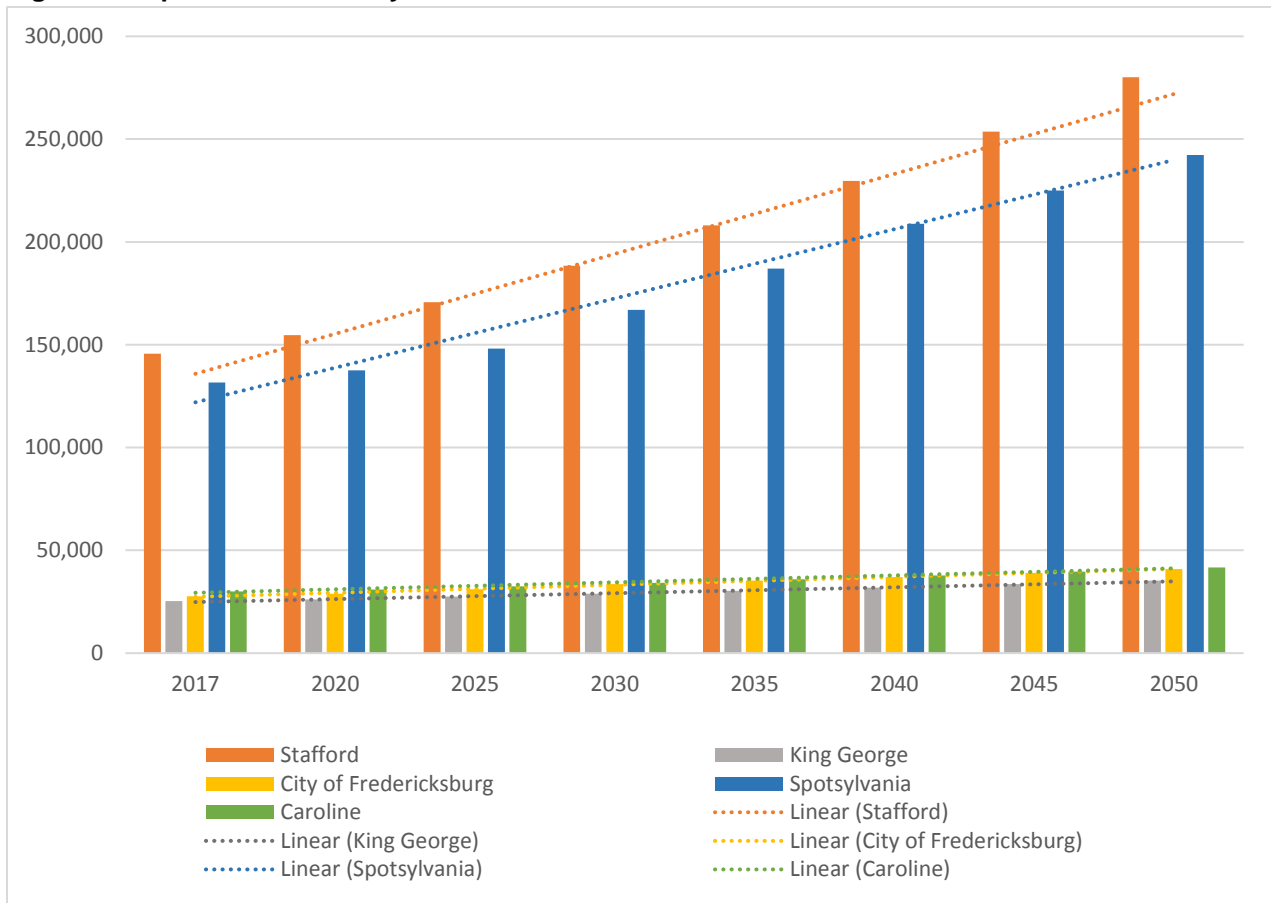
The results can be seen in Table 2. Based on the projections, Stafford and Spotsylvania counties will continue to have highest population in the Region. To account for the additional population anticipated as part of the Jackson Village and Alexander’s Crossing developments in Spotsylvania County, around 14,500 people were added evenly to the years 2030 and 2035.

**Table 2: Population by Jurisdiction**

Jurisdiction	2017	2020	2025	2030	2035	2040	2045	2050
<b>Stafford</b>	145,699	154,617	170,710	188,477	208,094	229,753	253,665	280,067
<b>Spotsylvania</b>	131,549	137,558	148,189	166,908	187,073	208,797	224,933	242,317
<b>Fredericksburg</b>	27,645	28,908	31,142	33,549	35,260	37,059	38,949	40,936
<b>King George</b>	25,381	26,150	27,484	28,886	30,359	31,908	33,536	35,246
<b>Caroline</b>	29,990	30,899	32,475	34,131	35,872	37,702	39,626	41,647
<b>GWRC Total</b>	<b>360,264</b>	<b>378,131</b>	<b>409,999</b>	<b>451,951</b>	<b>496,659</b>	<b>545,218</b>	<b>590,709</b>	<b>640,213</b>

The linear trend displayed in Figure 1 has a clear increase for Stafford and Spotsylvania counties with relatively minor population increases for Caroline County, King George County, and the City of Fredericksburg.

**Figure 1: Population Growth by Jurisdiction with Linear Trends**



## HOUSEHOLDS

The household projections correspond to the increase in population (although there are some differences). To obtain estimates for the number of households, the following formula was used:

$$\frac{\text{Population in year } x \text{ for jurisdiction } y}{\text{Average household size for jurisdiction } y}$$

Base year data for average household size was calculated from the 2013-2017 ACS 5-year estimates by dividing the population by the number of households. The horizon year average household size was calculated from the CS projections. Numbers for the interim years were interpolated to fit in line with the base and horizon years. The results can be seen in Table 3. In general, the average household size is trending downward, in line with the national trend and developments under construction in the Region (more apartments which tend to have a smaller household size). However, Caroline and King George counties are projected to grow in household size due to the expectation that a greater proportion of single-family detached homes will be built in the future.

**Table 3: Projected Average Household Size**

Jurisdiction	2017	2020	2025	2030	2035	2040	2045	2050
Stafford	3.15	3.12	3.06	2.99	2.91	2.82	2.72	2.60
Spotsylvania	3.00	2.98	2.97	2.96	2.95	2.94	2.92	2.90
Fredericksburg	2.71	2.69	2.66	2.63	2.60	2.57	2.54	2.51
King George	2.91	2.93	2.96	2.99	3.03	3.07	3.11	3.16
Caroline	2.70	2.70	2.71	2.72	2.73	2.75	2.77	2.79
<b>GWRC Average</b>	<b>2.89</b>	<b>2.88</b>	<b>2.87</b>	<b>2.86</b>	<b>2.84</b>	<b>2.83</b>	<b>2.81</b>	<b>2.79</b>

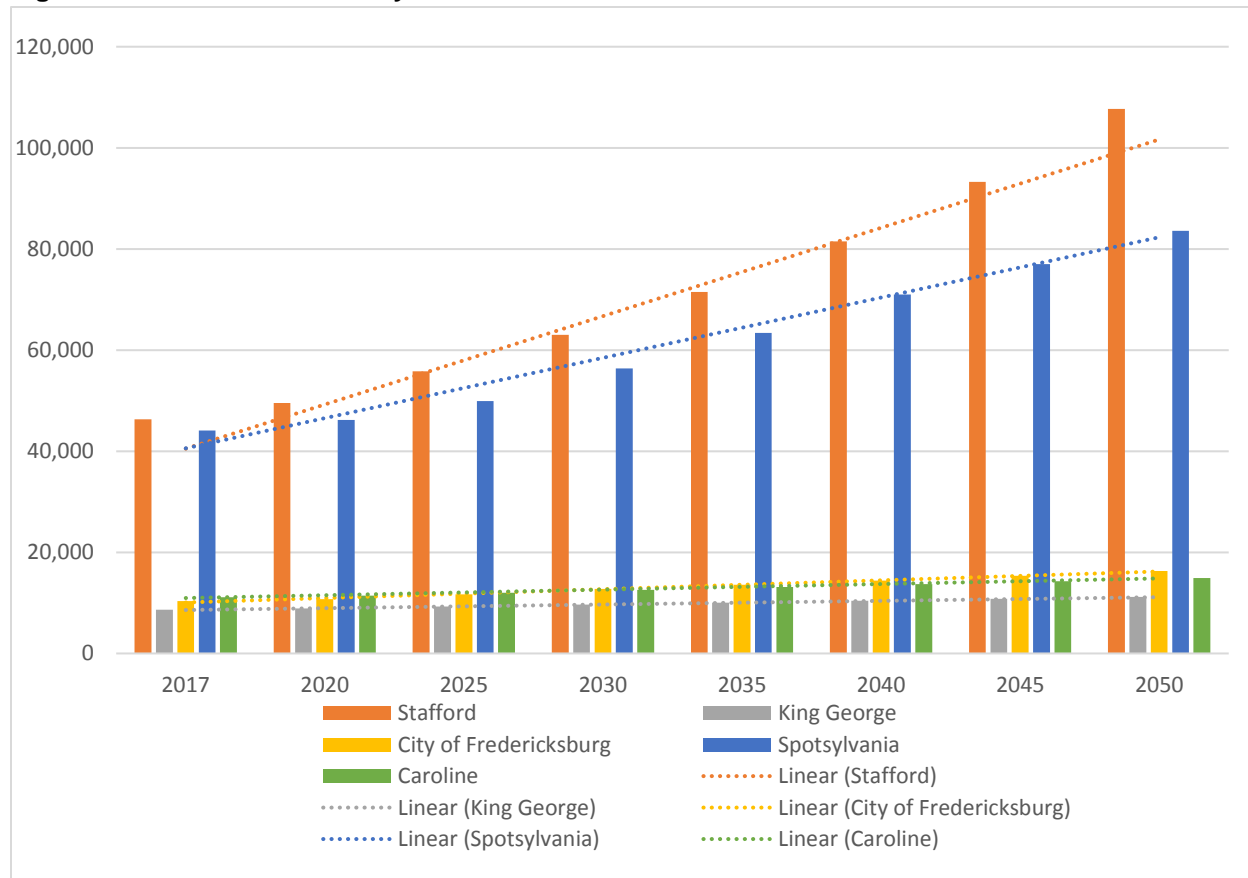
Table 4 lists the number of households by jurisdiction. In 2017, Stafford County has a comparable number of households to Spotsylvania County, but Stafford County is projected to greatly outnumber Spotsylvania County in terms of total households despite having a larger average household size. Based on 2050 projections, Stafford County is likely to have over 20,000 more households than Spotsylvania County, likely attributed to the additional .5% growth it has over Spotsylvania County.

**Table 4: Number of Households by Jurisdiction**

Jurisdiction	2017	2020	2025	2030	2035	2040	2045	2050
Stafford	46,322	49,557	55,787	63,036	71,510	81,473	93,259	107,718
Spotsylvania	44,105	46,160	49,895	56,388	63,415	71,019	77,032	83,558
Fredericksburg	10,351	10,746	11,707	12,756	13,562	14,420	15,334	16,309
King George	8,658	8,925	9,285	9,661	10,020	10,394	10,783	11,154
Caroline	11,143	11,444	11,983	12,548	13,140	13,710	14,305	14,927
<b>GWRC Total</b>	<b>120,579</b>	<b>126,832</b>	<b>138,659</b>	<b>154,389</b>	<b>171,646</b>	<b>191,015</b>	<b>210,714</b>	<b>233,666</b>

The linear trends in Figure 2 present a similar picture to those in Figure 1. Stafford and Spotsylvania counties have an overall higher growth rate, encompassing a majority of the total number of households in the Region.

**Figure 2: Household Growth by Jurisdiction with Linear Trends**



## EMPLOYMENT

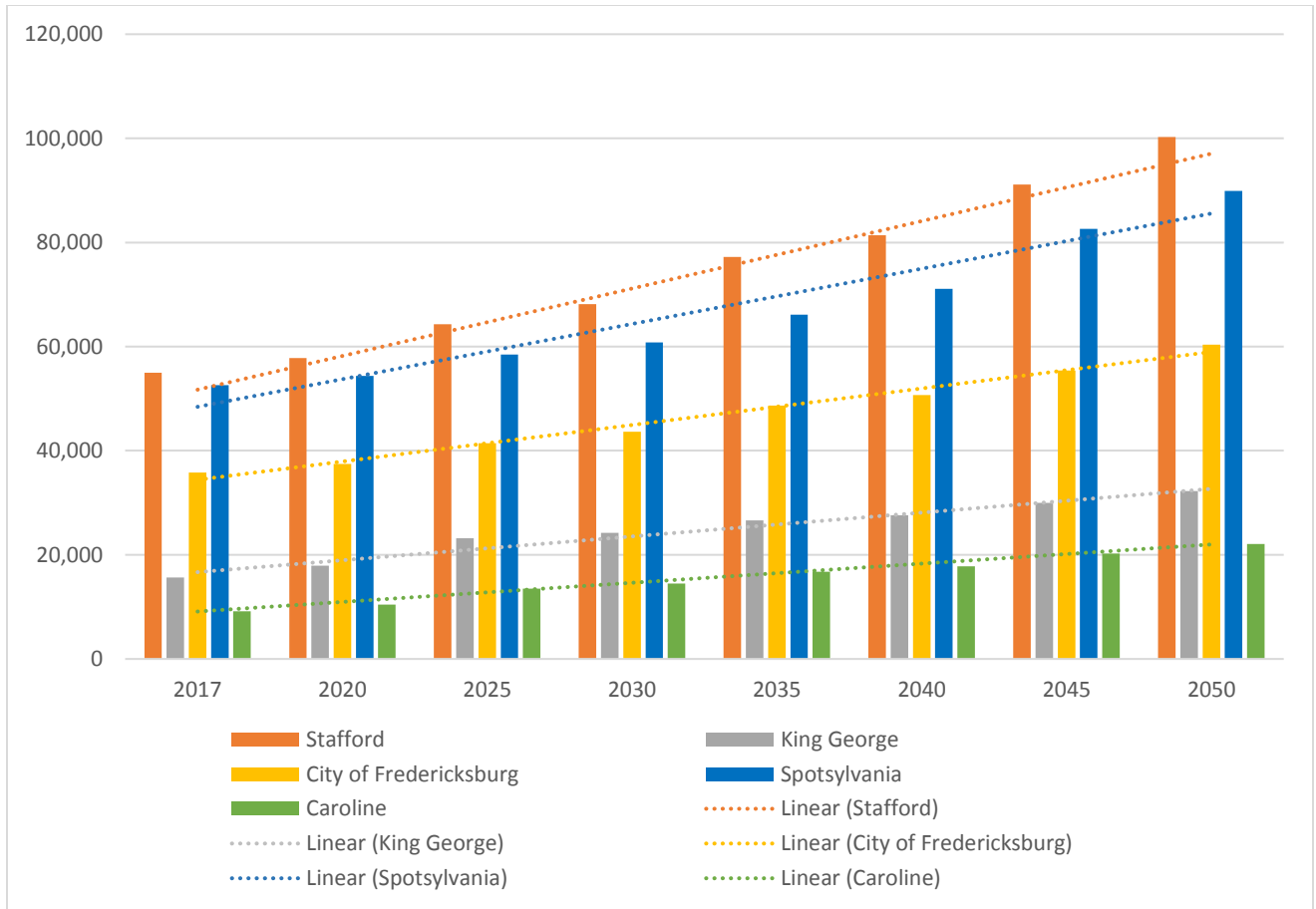
The employment projections were calculated differently than population and households. After reviewing the numbers, it was determined that the work CS completed is still accurate. The exceptions are Caroline and King George counties, where the numbers appear to be slightly high. For these counties, base year employment estimates were calculated as an average between the VEC estimates and the CS estimates. Those numbers were then scaled up to the new horizon year (2050) using the growth rate from the CS estimates. The results can be seen in Table 5.

**Table 5: Employment by Jurisdiction**

Jurisdiction	2017	2020	2025	2030	2035	2040	2045	2050
<b>Stafford</b>	54,968	57,766	64,294	68,163	77,189	81,365	91,108	100,260
<b>Spotsylvania</b>	52,585	54,358	58,495	60,791	66,149	71,095	82,635	89,873
<b>Fredericksburg</b>	35,778	37,484	41,466	43,633	48,688	50,707	55,417	60,388
<b>King George</b>	15,655	16,430	17,807	19,108	20,505	21,818	23,215	24,701
<b>Caroline</b>	9,123	9,739	10,859	11,275	11,706	12,879	14,168	15,587
<b>GWRC Total</b>	<b>168,109</b>	<b>175,777</b>	<b>192,921</b>	<b>202,969</b>	<b>224,237</b>	<b>237,863</b>	<b>266,543</b>	<b>290,809</b>

One of the major aspects that stands out within the trend line and the graphical representation in Figure 3 is that Fredericksburg has a much higher employment rate than both population and households, which is attributed to its position as the central core of the region.

**Figure 3: Employment Growth by Jurisdiction with Linear Trends**



## RETAIL EMPLOYMENT

The retail employment projections are a subset of the total employment projections. Ergo, they are closely aligned. To determine the retail employment for each jurisdiction, the CS estimates were scaled up using the same formula that was used for total for the same way employment. Again, the CS retail employment estimates for King George and Caroline counties were slightly high, so the base year estimates were calculated as an average of the VEC and CS numbers. The base year estimates were then scaled up to the horizon year using the growth rates from the CS estimates. The results can be seen in Table 6.

**Table 6: Retail Employment by Jurisdiction**

Jurisdiction	2017	2020	2025	2030	2035	2040	2045	2050
Stafford	14,447	15,343	17,433	19,478	21,523	23,685	25,847	28,896
Spotsylvania	20,495	21,036	22,297	23,609	24,920	26,346	27,771	29,365
Fredericksburg	11,445	11,925	13,046	13,846	14,646	15,277	15,908	16,942
King George	2,249	2,373	2,596	2,793	3,004	3,193	3,395	3,609
Caroline	2,124	2,219	2,303	2,451	2,607	2,748	2,897	3,053
<b>GWRC Total</b>	<b>50,760</b>	<b>52,896</b>	<b>57,675</b>	<b>62,177</b>	<b>66,700</b>	<b>71,249</b>	<b>75,818</b>	<b>81,865</b>

The retail employment linear trend per jurisdiction can be seen in Figure 4, with Stafford and Spotsylvania counties leading in terms of total numbers, and Fredericksburg slightly behind. Spotsylvania County, while having an overall higher retail employment, has a much lower growth rate than Stafford County. Therefore, by 2050, Stafford County has almost the same retail employment as Spotsylvania County.

**Figure 4: Retail Employment Growth by Jurisdiction with Linear Trends**

