CHAPTER 3

DEMOGRAPHIC AND SOCIOECONOMIC TRENDS AND PROJECTIONS

Population and employment distribution patterns and densities play an important role in the need for transportation infrastructure and services. As described in this chapter, the Region’s population has been growing at a rapid rate and is projected to continue that trend well into the future. The Region’s employment has also been growing at a steady pace since 2000. Due to the economic downturn in 2008, there has been some slowing of the population and employment increases. However, the slowing trends are projected to reverse and the Region will continue to grow to the horizon year of 2040.

The complete population and employment dataset and methodology used to develop these projections can be found in Appendix B of this Plan.

3.1 DEMOGRAPHIC TRENDS AND PROJECTIONS

3.1.1 Population Trends

As shown in Figure 3.1 on the following page, in 1960 the GW Region had a population of 64,302, ranked as the eighteenth (out of 21 PDCs) largest in the Commonwealth. Over the last 50 years, the Region has experienced significant, rapid population growth, rising to, according to the US Census, 327,773 persons in 2010 and becoming the 4th largest region in Virginia with the highest growth rate (410% since 1960) as shown in Figure 3.1 below. In 1980 the GW Region’s growth rate surpassed Northern VA as the fastest growing region in Virginia. As the Washington DC, MD, VA metropolitan area (to the north) and the Richmond-Petersburg metropolitan area (to the south) have both grown over this period, the GW Region’s central location midway between these areas and proximity to expanding job opportunities has encouraged significant in-migration of new residents, both to fill local jobs, as well as seeking affordable housing and rural and lower-density suburban lifestyles and commuting access to the larger job markets north and south of the Region.

Figure 3.1: GW Region Population (1960-2010)
The Region as a whole has grown by nearly 36% since 2000. Most of that growth, numerically speaking, has taken place in Stafford (36,515 persons) and Spotsylvania Counties (32,002 persons). The City of Fredericksburg experienced the least population growth from 2000 to 2010 (5,007 persons). However, King George County had the highest population growth percentage (40%) followed closely by Stafford County (39%). Caroline County and the City of Fredericksburg’s population growth percentages were significantly lower, representing 29% and 26% respectively. Refer to Figure 3.2, below, which depicts the population by jurisdiction from 2000 to 2010.

Figure 3.2
Population by Jurisdiction (2000-2010)

Map 2 on the following page shows that although the region has experienced rapid growth during the past 30 years, the population density, outside of the areas in and around Downtown Fredericksburg and other small areas in North Stafford and Spotsylvania Counties, is still relatively low density (less than 1,000 persons per square mile). This shows that, largely, the residential development that has taken place over the past 30 years has been suburban in nature and taken place at the urban fringe.
3.1.2 Population Projections

The population and employment estimates for the George Washington Region were developed for use in the FAMPO Travel Demand Model, to forecast the need for transportation infrastructure needs to the horizon year of 2040. These projections, with jurisdictional and regional control totals, were developed for 2020, 2030 and 2040 for each jurisdiction in the George Washington Region. Table 3.1, below, shows the breakdown of the county and Regional control totals for each planning horizon year. As shown, Spotsylvania and Stafford Counties will continue to be the largest, fastest growing localities in the Region. Map 3, on the following page, shows the 2040 population density based on locally adopted future land use plans. As shown, the population density in 2040 looks very similar to that of 2010, despite adding an additional 289,567 person to the Region. This dispersed population pattern will continue to stress public infrastructure, as well as creating the need for additional costly transportation improvements and the inability to provide economical public transportation. These implications will be further discussed in the following chapter.

Table 3.1
Total Population Projections for the GW Region (2010-2040)

<table>
<thead>
<tr>
<th></th>
<th>2010*</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caroline County</td>
<td>28,545</td>
<td>34,870</td>
<td>41,220</td>
<td>46,600</td>
</tr>
<tr>
<td>City of Fredericksburg</td>
<td>24,286</td>
<td>27,160</td>
<td>30,570</td>
<td>33,620</td>
</tr>
<tr>
<td>King George County</td>
<td>23,584</td>
<td>30,230</td>
<td>37,820</td>
<td>44,700</td>
</tr>
<tr>
<td>Spotsylvania County</td>
<td>122,397</td>
<td>161,470</td>
<td>202,740</td>
<td>240,570</td>
</tr>
<tr>
<td>Stafford County</td>
<td>128,961</td>
<td>169,780</td>
<td>212,680</td>
<td>251,850</td>
</tr>
<tr>
<td>GW Region</td>
<td>327,773</td>
<td>423,510</td>
<td>525,030</td>
<td>617,340</td>
</tr>
</tbody>
</table>

*US Census, 2010
3.1.3 Household Trends

A household represents each occupied independent living unit, regardless of the number of persons residing in the unit and without regard to the existence of a family (by blood or marriage) relationship among the members of the household. A household unit may be as small as one person or as many as a dozen or more.

In 2010 there were 112,048 households in the GW Region, this represents 28,339 additional households added in the Region (a 34% increase) since 2000. With moderate economic growth projected in the Fredericksburg, Washington DC-Northern Virginia and Richmond, VA economies for years to come, continued household growth is projected for the GW Region, reaching 223,710 households by 2040. Over the forecast period, approximately 111,662 households are projected to be added throughout the Region (see Figure 3.3 below, for a breakdown, by locality, of the 2040 household projection).

The average household size in the GW Region has grown from 2.67 in 2000 to 2.86 in 2010. This average is slightly higher than that of the Commonwealth, 2.54 and 2.56, and also of the United States as a whole which remained constant at 2.59. It is projected that the average household size in the Region will gradually drop to 2.71 by 2040.
3.2 EMPLOYMENT TRENDS AND PROJECTIONS

3.2.1 Employment Trends

As with population, the Region’s employment base has also grown since 2000. In 2000, there were 97,424 jobs within the George Washington Region. By 2006 that number increased to 113,501 jobs and, even with the economic downturn that began in 2008-2009, the Region’s employment grew to 149,656 jobs in 2010.

The 10 largest employers in the George Washington Region include:

1. U.S. Department of Defense
2. Stafford County Schools
3. GEICO
4. Spotsylvania County Schools
5. Mary Washington Hospital
6. U.S. Federal Bureau of Investigation
7. Wal-Mart
8. University of Mary Washington
9. Stafford County
10. Spotsylvania County

Source: VEC

As shown in Figure 3.4, below, the unemployment rate in the GW Region has been continuously lower than that of the United States and the Commonwealth of Virginia. This is attributable to the high number of U.S. Military and Government workers that reside in the Region.

Figure 3.4
Unemployment Rates (2001-2012)
As shown on Map 4 on the previous page, the 2010 employment density in the Region, (number of jobs per square mile) much like the population densities shown in Maps 2 and 3, is relatively low. The largest concentrations of employment occur in and around the City of Fredericksburg; on US-17 in Stafford County (mainly GEICO); the Route 610 Corridor and MCB Quantico in North Stafford County; the Route 3 west corridor in Spotsylvania and in the Dahlgren area of King George County.

### 3.2.2 Commuting Patterns

According to the 2000 Census, approximately 40% of the Region’s workers are employed outside of the Region. The majority of these workers (76%) commute to the Northern Virginia/Washington D.C. Area and the other 24% commute to the Richmond Area. Approximately 76% of these workers reported that they drove alone and 15% reported that they used a carpool or vanpool; the other 9% reported that they worked at home, utilized public transportation, rode a bicycle, or walked to work.

The 2009-2011 American Community Survey (3-Year Estimates) indicate that the number of workers who are employed outside of the Region has increased to 55%. Just as in the 2000, the vast majority of the workers are commuting to the Northern Virginia/Washington D.C. Area (84%) and only 16% commute to the Richmond Area. Approximately 73% of these workers reported that they drove alone and 13% reported that they used a carpool or vanpool; the other 14% reported that they worked at home, utilized public transportation, rode a bicycle, or walked to work.

Currently, the Fredericksburg Region serves as a bedroom community to the greater Washington D.C., Northern VA, and Maryland Urbanized Area. This is evident by the number of workers who commute out of the Region on a daily basis, as described above. It is evident by the employment projections found in the following section (3.2.3) that this trend is projected to continue into the foreseeable future and will place further strain on I-95 as well as local arterial roadways during the morning and afternoon peak travel periods.

Efforts to combat this re-occurring congestion in this plan include increasing capacity at park and ride facilities, which are currently operating at or over capacity, promoting vanpooling/carpooling and express bus, increased VRE service, the construction of the I-95 Express Lanes (eventually to I-95 exit # 126), as well as implementing an Integrated Corridor Management (ICM) initiative for the I-95/395 corridors.

### 3.2.3 Employment Projections

It is projected that by 2040 the Region’s employment will grow to 253,178 jobs. It is anticipated that the most growth will take place in education, health care, retail trade and accommodation/food services. Please refer to Figure 3.5 on the following page for a breakdown of the regional employment projections by category from 2010 to 2040.
At an increase of 85%, Caroline County is projected to experience the most job growth (by percentage) from 2010 to 2040. Stafford County and the City of Fredericksburg follow closely at 80% and 74%, respectfully. Please refer to Table 3.2, on the following page, for a breakdown of the employment projections by jurisdiction.
Map 5, on the following page, shows the projected employment density in the George Washington Region in 2040 (based on local future land use plans). The employment patterns are still largely suburban, low density. Again, the dispersed population pattern will continue to stress public infrastructure and will inhibit the ability to provide public transportation as well as reduce the economic competiveness of the Region.
3.3 ENVIRONMENTAL JUSTICE

Title VI of the Civil Rights Act of 1964 prohibits federal agencies, recipients, sub-recipients and contractors who receive federal funds from discriminating on the basis of race, color or national origin, against participants or clients of programs that receive Federal financial assistance. Executive Orders 12898 (Environmental Justice) and 13166 (Limited English Proficiency) reinforced the basic rights and legal requirements contained in Title VI of the Civil Rights Act and also directed that “each federal agency was directed to review its procedures and make environmental justice part of its mission.”

The Environmental Justice (EJ) mandate directs federal agencies to develop strategies to help them identify and address disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low-income populations. Executive Order 12898 was also intended to provide minority and low-income communities with access to public information and opportunities for public participation in matters relating to human health or the environment. It is important to identify populations that may experience barriers to mobility and therefore, may be adversely affected by transportation planning decisions.

On May 2, 2012, U.S. DOT reaffirmed their commitment to Environmental Justice by issuing an update to Departmental Order 5610.2(a). This order explicitly states the purpose and authority of the order and EJ policy, as well as data collection and analysis procedures associated with EJ. The result of the past 47 years of Civil Rights regulations, statutes, policies, technical advisories and Executive Orders, is that nondiscrimination provisions apply to all programs and activities of Federal-aid recipients, regardless of tier. All MPOs are subject to these requirements.

Environmental Justice Groups include the following:

1. Minority Populations
2. Low Income Populations
3. Disabled Populations
4. Older Adult Populations
5. Limited English Proficiency Populations

The following data is based on the 2000 Census and the 2005-2009 American Community Survey broken down to the Census tract level.
3.3.1 Minority Populations

African-American Population Aggregations

Persons with African-American ancestry make up roughly 17.5% of the total regional population. Figure 3.6 below, shows that Stafford has the lowest percentage of African-Americans (15.1%) living within the county; following Stafford County is Spotsylvania County at 16.58%, King George County at 17.2%, the City of Fredericksburg with 21%, and finally Caroline County with the highest percentage at 29.1%. Naturally, with Caroline County having the highest percentage within the Region, it has relatively high percentages split up amongst its’ six census tracts. Five of the six tracts have 20.1-40% of their populations comprised of African-Americans, leaving the final tract representing 40.1-53.5%. The remaining municipalities with an exception to Fredericksburg have a relatively even percentage distribution of persons with African-American heritage. The City of Fredericksburg has five census tracts; the one on the southeastern portion of the city has between 40.1% and 53.5% of the population with African-American heritage. The middle two tracts have between 0% and 10%, with the remaining two on the western half of the city with aggregations between 20.1% and 40%.

Figure 3.6
African-American Population Aggregations
Asian-American Population Aggregations

As shown in Figure 3.7 below, the Asian-American demographic makes up a relatively small portion of the overall population, with an average of 2.1% for the entire FAMPO and GW Region. To the contrary of the data observed for African-American populations, Asian-Americans have a higher concentration in the more urbanized areas of the region. Stafford County has the highest percentage with 2.6%, where as Caroline County has the lowest with 0.4%, followed by King George County with 1.05%, City of Fredericksburg with 2.05% and Spotsylvania County with 2.17%. Most of this population group lives along and to the west of the I-95 corridor.

Figure 3.7
Asian-American Population Aggregations
Hispanic/Latino Population Aggregations

Overall, the regional percentage of the Hispanic/Latino population is roughly 6.2%. Stafford County leads this segment with approximately 7.97% of its population descending from Hispanic/Latino heritage. King George County follows closely behind with 7.73%, Spotsylvania County with 6.36%, Caroline County with 3.55%, and finally the City of Fredericksburg with 3.15%. Much like the distribution of the Asian-American population group, Hispanic/Latinos have higher concentrations along and to the west of the I-95 corridor, with a majority located in the urbanized areas of Fredericksburg and northern Stafford County. Figure 3.8, below, illustrates aforementioned Hispanic/Latino population aggregations.

Figure 3.8
Hispanic/Latino Population Aggregations
3.3.2 Low Income Population

The total overall regional percentage of residents that make up the Low Income Group is 6.35%. The City of Fredericksburg has the most low income residents with 13.4% of its population living below the national poverty level. Following the city is Caroline County at 8.02%, Spotsylvania County with 7.08%, King George County with 6.05%, and finally Stafford County with 4.03%. Four of the five census tracts that make up the City of Fredericksburg had Low-Income levels above 3.1%. The eastern most tracts in the city have a percentage between 9.1% and 22%. All of Caroline County’s census tracks saw its population having a percentage of 3.1% and higher. The areas of the Region with the highest levels of Low-Income populations tend to be those that have not experienced higher amounts of development that have been commonplace around the Region over the past 30 years. Figure 3.9, below, illustrates the aforementioned Low-Income population aggregations.

Figure 3.9
Low-Income Population Aggregations
3.3.3 Disabled Population

The total overall regional percentage of residents that make up the Disabled Population group is 15.8% with Caroline County having the highest percentage at 21.9% of its population being disabled. The City of Fredericksburg came in second with 19.7%, King George County was next with 18.1%, followed by Spotsylvania County with 16.3%, and finally Stafford County with 12.55%. Half of Caroline County's census tracts had between 15.1% and 22% with the other half having between 22.1% and 28.5% of its population being disabled. The three highest tracts in Caroline County were those that surround Fort A.P. Hill and the Town of Bowling Green. The eastern and western portions of the City of Fredericksburg also have a higher than average percentages of its population being disabled while the downtown and central portions of the city having lower figures. Figure 3.10, below, illustrates aforementioned Disabled population aggregations.

**Figure 3.10**
Disabled Population Aged 5 Years and Older Aggregations
3.3.4 Older Adults

Overall, about 6.4% of the Region’s population is comprised of Older Adults, with the City of Fredericksburg having the highest percentage at 11.07%. Caroline County comes in second with 10.9%; King George County is next with 7.22%, followed by Spotsylvania County with 6.35% and finally Stafford County with 4.55%. The southern and eastern portions of the Region have the highest percentages of Older Adults living there. Figure 3.11, below, illustrates the aforementioned Older Adult Population aggregations.

Figure 3.11

Older Adult Population Aggregations
3.3.5 Limited English Proficiency (LEP)

Overall about 3.14% of the Region’s population has Limited English Proficiency (LEP), with Fredericksburg having the highest percentage at 4.96%. Stafford County is next with 3.47%, followed by Spotsylvania County with 3.23%, Caroline County with 1.46% and finally King George County with 0.99%. The Fredericksburg and North Stafford urbanized areas have the highest concentrations of Limited English speakers, with King George and Caroline Counties having the lowest percentage. Figure 3.12, below, illustrates the aforementioned Limited English Proficiency population aggregations.

Figure 3.12
Limited English Proficiency Population Aggregations

![Limited English Proficiency Population Aggregations](image)

An Equity Analysis of the effects (both benefits and burdens) of this Long-Range Transportation Plan on all of the Environmental Justice/Title VI communities in the Region can be found in Appendix H.