

Chapter 2: Changes in Population, Employment and Travel in Virginia

Analysis of anticipated changes in employment, population and other characteristics provide a clear picture of where we are and where we are heading as a Commonwealth. These socioeconomic factors have a direct relation to the demands placed on Virginia's transportation network. According to the 2035 Socioeconomic and Travel Demand Forecasts for Virginia and Potential Policy Responses report prepared for VTrans2035 by the Virginia Transportation Research Council (VTRC), there are a number of forecasted changes that will impact the future of transportation. Each of these changes present unique challenges. These challenges, along with the transportation policy goals set forth in VTrans2035, provide a basis for the multimodal recommendations in the VSTP.

POPULATION

- Between 2010 and 2035, Virginia’s population will grow by about one third from slightly more than 8 million to approximately 10.9 million (Figure 5).³
- Between 2010 and 2035, the number of people per household will generally decrease in a uniform fashion across the state, from 2.62 in 2010 to 2.54 in 2035.
- Population growth rates will vary between approximately 3% (Cumberland Plateau PDC) and 73% to 80% (George Washington Regional Commission).
- The majority of population increases will occur in the Northern Virginia, Hampton Roads, Richmond and Fredericksburg PDCs. Specifically, these four regions will be responsible for approximately 81% of Virginia’s population growth for the period 2010 through 2035, adding an estimated 2.34 million persons.
- The number of senior citizens (age 65 or older) in Virginia will double between now and 2035.⁴ Currently, an estimated 11.8% of the Commonwealth’s population are 65 years and older, 14.1% of the population have a disability (population age 5 and over), and 9.9% of the population are below the poverty level. Therefore, a critical part of ensuring effective mobility for all Virginians is to identify the current and future unmet need for human service transportation.⁵
- The millennial generation, or Generation Y (usually defined as those born between the years 1977 and 1994⁶), is the largest generation in the United States (US) and will have just as significant an influence on how products and services are developed and delivered as the baby boomer generation. The Commonwealth’s transportation system will need to serve the commute and travel patterns of this large group.

³ VTrans2035

⁴ Virginia Statewide Public Transportation Plan, 2010

⁵ Virginia Statewide Public Transportation Plan, 2010

⁶ “Getting Inside Gen Y - Generation Y - Statistical Data Included.” *American Demographics*. 1 Sep. 2001

Figure 5: Virginia Population Forecast

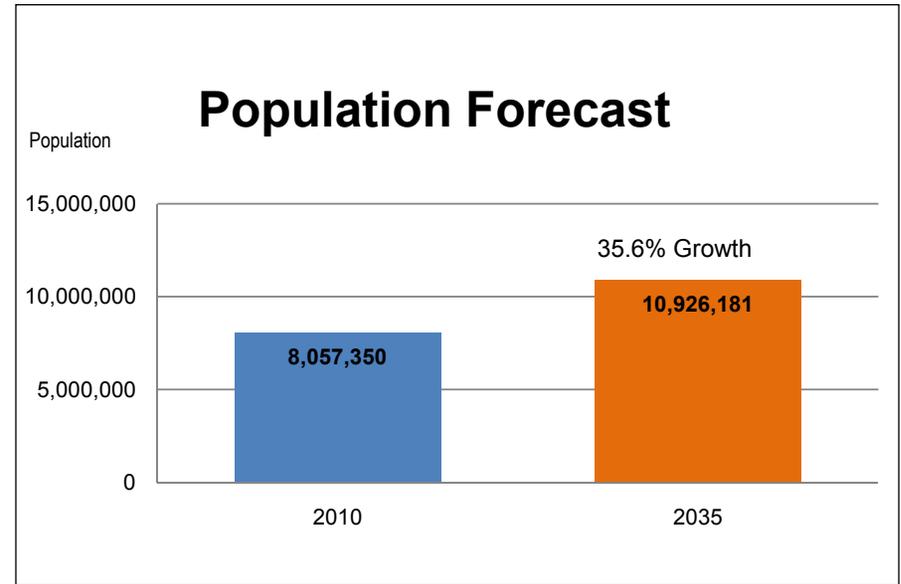
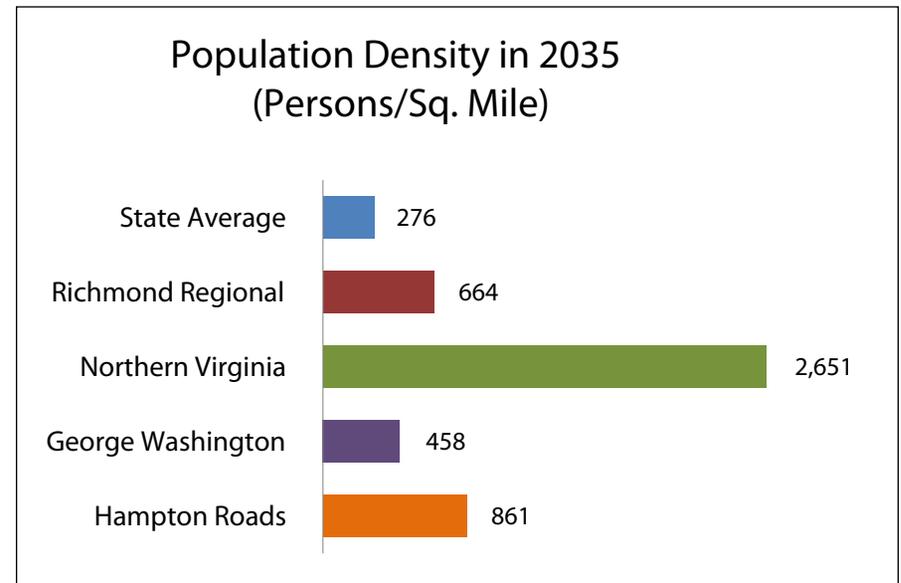


Figure 6: Population Density in 2035



- The average population density in 2035 throughout the Commonwealth is expected to be 276 persons per square mile⁷, compared to the 2008 average density of 200 persons per square mile. In 2035, Northern Virginia, Hampton Roads, Richmond and the George Washington PDCs are expected to have the highest population densities in the state as illustrated in Figure 6.

Challenge: Increasing and aging populations impact transportation needs and decisions in a number of ways. General increases in population result in more people wanting to go to more places, producing increased travel demand and congestion. Depending on where the population increases take place, increasing the extent to which roadways can accommodate more vehicles, providing increased opportunity for transit and non-motorized transportation options, or a combination of strategies must be considered. An increase in aging populations and other potentially transit-dependent groups adds another element to the challenge of providing accessible transportation services since many of these individuals reside in less densely-populated areas of Virginia.

Figures 7 and 8 illustrate the expected population and population change, respectively, by PDC.

EMPLOYMENT

- Between 2010 and 2035, total employment is anticipated to grow by almost one half, increasing from 5.21 million to 7.75 million.
- Like population, much of the employment related growth (84%) will be focused in the Northern Virginia (1.28 million), Richmond (0.37 million), Hampton Roads (0.35 million) and George Washington (0.15 million) PDCs, as illustrated in Figure 9.
- Employment growth rates will vary between 8% (West Piedmont and Southside) and 90% (George Washington).

⁷ Virginia Transportation Research Council, 2035 Socioeconomic and Travel Demand Forecasts for Virginia and Potential Policy Responses, VTrans2035, July 2009

Figure 7: 2035 Projected Population by PDC

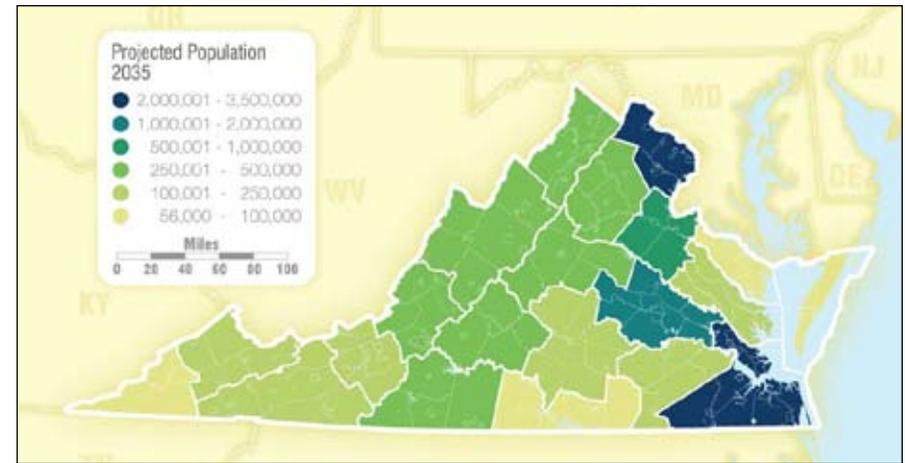
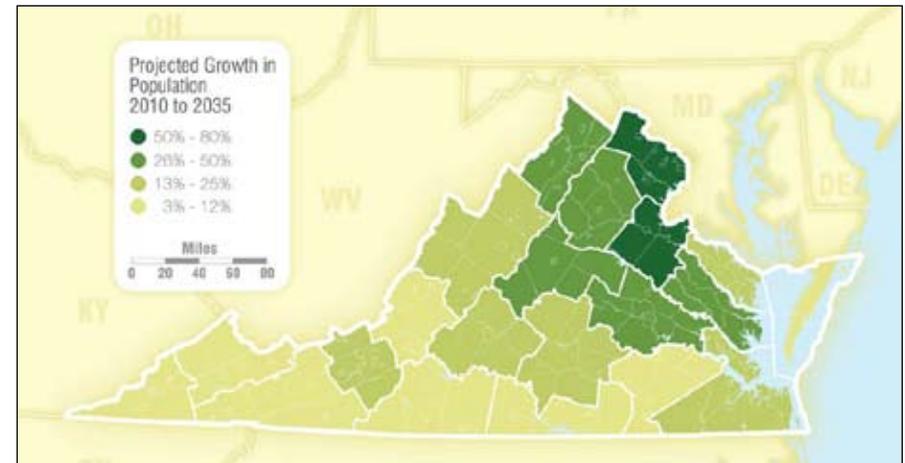


Figure 8: Projected Population Change by PDC (2010 – 2035)



The following PDC boundaries have been adjusted to avoid double counting counties that belong to more than one PDC.

*The Roanoke Valley-Alleghany Regional Commission does not include Franklin County, as it was included in the West Piedmont PDC.

**The Commonwealth PDC includes Nottoway County.

***The Crater PDC does not include Charles City County or Chesterfield County as both were included in the Richmond Regional ODC.

****The Hampton Roads PDC does not include Surry County (as it was included with the Crater PDC) or Gloucester County (as it was included with the Middle Peninsula PDC.)

- By 2035, approximately 75% of the state’s employment will reside within the boundaries of four PDCs - Richmond, Northern Virginia, Hampton Roads PDC and George Washington Regional Commission.

Figures 10 and 11 illustrate the expected total employment and employment change throughout the Commonwealth, respectively.

Challenge: Increasing employment presents a number of challenges and opportunities for transportation. Aware of the impact that their employees commuting patterns have on air quality and congestion, many employers have begun offering alternative work schedules, the opportunity to work from home (teleworking) and discounted transit fares (these are a few of the strategies known as transportation demand management or TDM). Knowing that an increase in employment is coming, there is the opportunity to be proactive in determining where these jobs may locate and encouraging denser development that fosters increased demand for transit.

Figure 9: 2035 Employment

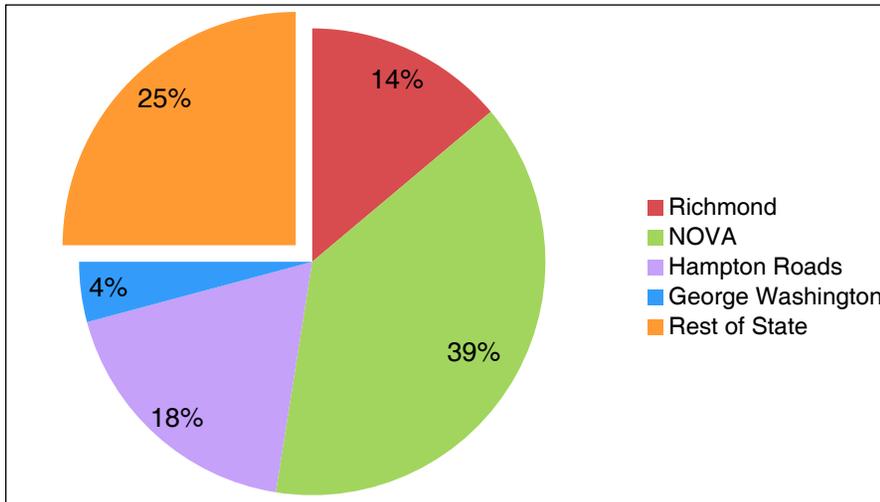


Figure 10: Projected 2035 Employment by PDC

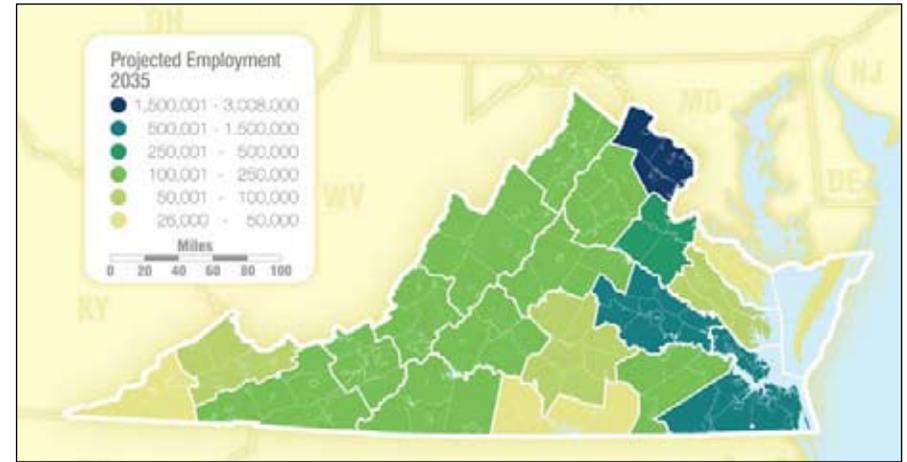
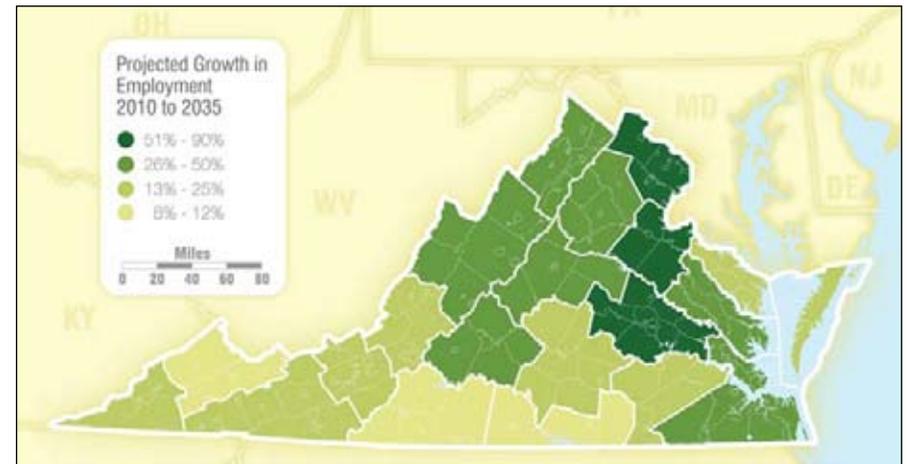


Figure 11: Employment Change by PDC (2010 – 2035)



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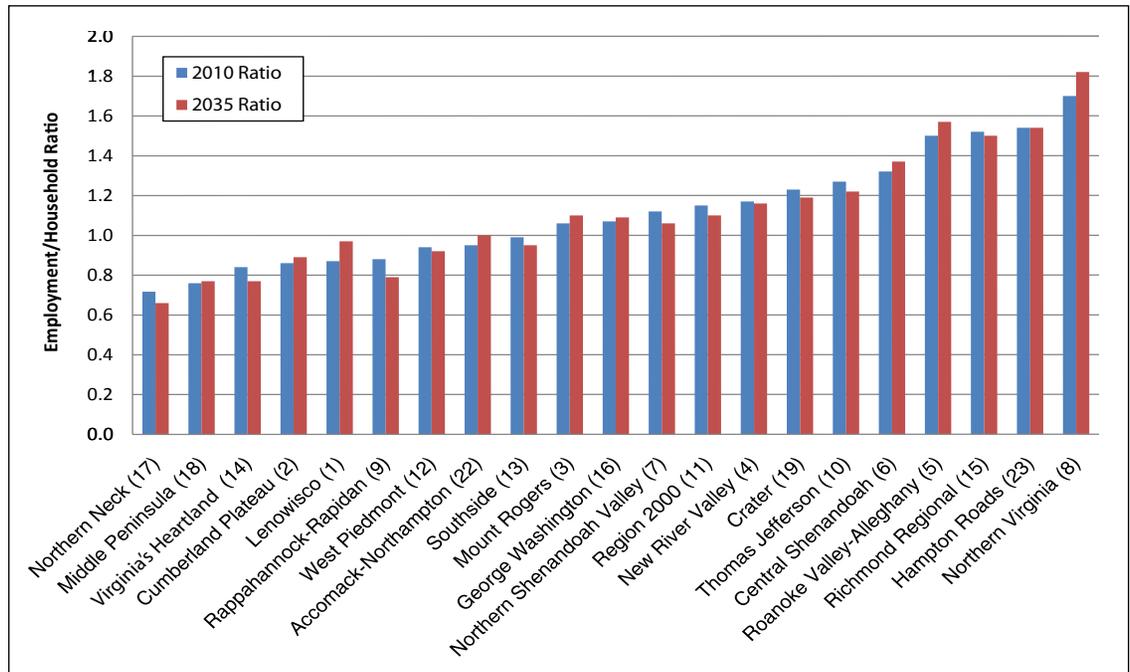
****The Hampton Roads PDC does not include Surry County (as it was included with the Crater PDC) or Gloucester County (as it was included with the Middle Peninsula PDC).

JOBS TO HOUSING RATIO

The term “jobs to housing ratio” is commonly used to describe the relationship between available housing and available jobs in a specific area. A jobs to housing ratio of 2:1 is typically promoted as an ideal balance that provides jobs and retail opportunities for all of the population within an area. A jobs to housing ratio greater than 1 indicates that more employment than housing exists within the jurisdiction. A more balanced jobs to housing ratio tends to reduce an area’s contribution to regional traffic congestion, noise and air pollution by encouraging citizens to live and work locally.

- Between 2010 and 2035 wage and salary employment is expected to increase by 45% in Virginia, compared to an increase in households of about 40%.
- Statewide the jobs to households ratio will increase from 1.41 in 2010 to 1.46 in 2035.
- The four PDCs with the highest job to household ratio are Northern Virginia, Hampton Roads, Richmond and Roanoke, as illustrated in Figures 12 and 13. Two of these PDCs, Northern Virginia and Roanoke, are expected to increase faster than the state average increase between 2010 and 2035, resulting in an even greater imbalance of jobs to housing.
- PDCs forecasted to have declining ratios, such as Northern Neck, Piedmont and Rappahannock-Rapidan, indicate a potential imbalance between the location of housing and the proximity of available jobs. This imbalance could result in longer commutes to the closest surrounding areas where jobs are available⁸.

Figure 12: Jobs to Housing Ratio (2010 and 2035)



Challenge: To the degree that a balance is achieved between local jobs and housing, there is greater opportunity for local residents to work close to where they live. It is important to note, however, that a simple numerical balance in the jobs/housing ratio does not necessarily indicate that local residents have adequate opportunity to work in their community. Other factors, such as the match between local resident employee skills and the skills required for local jobs, and the match between local job compensation levels and local housing prices, also influence a community’s actual jobs/housing relationship⁹.

⁸ Virginia Transportation Research Council, 2035 Socioeconomic and Travel Demand Forecasts for Virginia and Potential Policy Responses, VTrans2035, July 2009

⁹ City of Sunnyvale, California. Downtown Specific Plan of 2003

When housing growth fails to keep pace with job growth, housing cost goes up. When too few jobs exist in relation to the number of houses, unemployment rises. In both cases, an imbalance results in longer commutes (either to homes or jobs outside the region). These longer commutes add to overall travel and related greenhouse gas emissions and also contribute to traffic congestion.

DAILY VEHICLE MILES TRAVELED AND TRANSIT TRIPS

The combined trends in population, employment and jobs/housing balance affect the total amount of daily vehicle miles traveled (DVMT) and the extent to which transit is a competitive mode choice. The ratio of statewide DVMT per lane-mile of the roadway system has steadily increased since 1980, meaning that the demand placed on the transportation network is increasing faster than supply. Total DVMT is also one indicator of carbon emissions, or greenhouse gas emissions.

- An estimate by VTRC identified a DVMT of 371.7 million by 2035, compared to 222.2 million in 2006. Approximately 67% to 70% of this DVMT was attributed to the George Washington, Hampton Roads, Northern Virginia, and Richmond PDCs.

Figure 14: 2035 DVMT

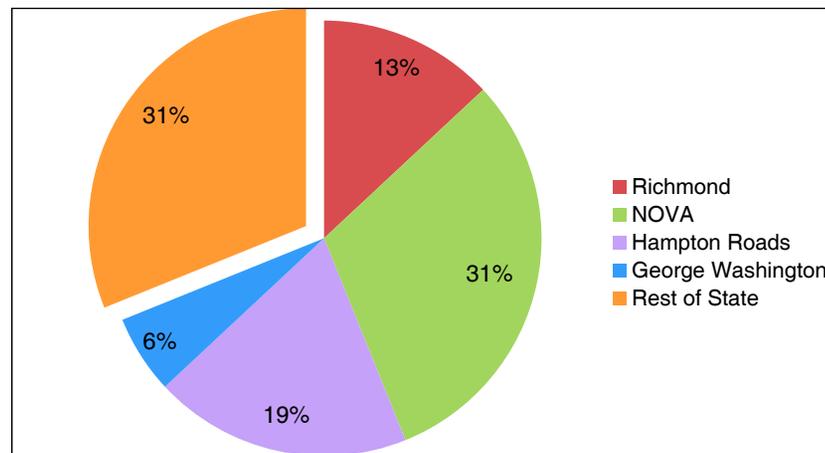


Figure 13: Projected 2035 Jobs to Housing Ratio by PDC

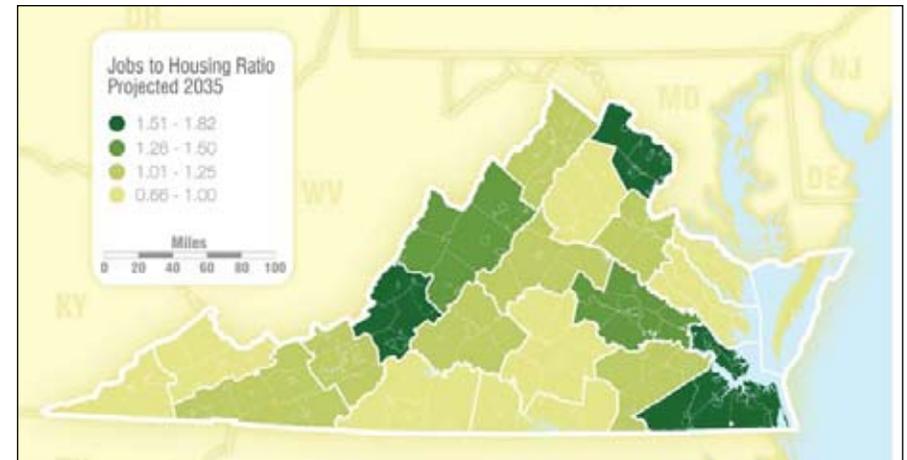
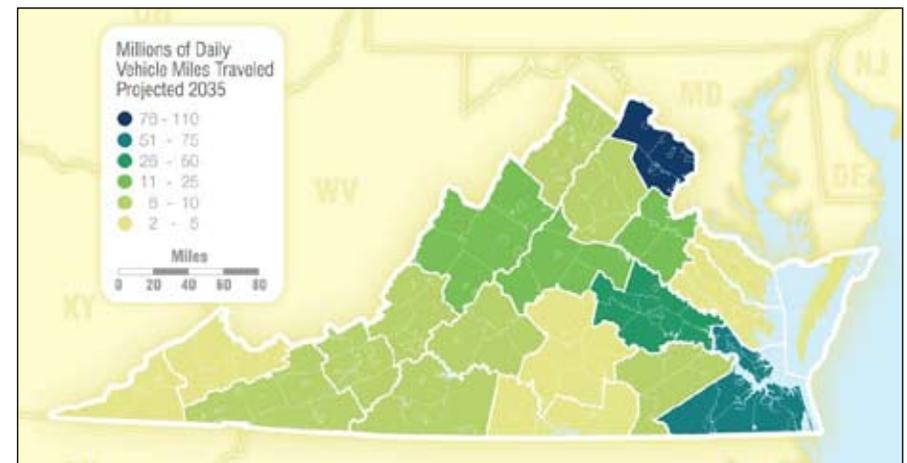


Figure 15: Projected 2035 Daily Vehicle Miles Traveled by PDC



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- Figures 14 and 15 show that the highest projected DVMT within any PDC occurs in Northern Virginia, followed by the Hampton Roads and Richmond PDCs.
- The 2035 transit demand forecast was 352 to 360 million transit trips, which is almost double the 2007 value of 192 million trips. Most of these trips (60%) were attributable to the rail and bus service provided by the Washington Metropolitan Transit Authority in Northern Virginia¹⁰.

Challenge: The increasing DVMT within the state's largest urban areas means that travel is growing on roads that in many cases are already congested. However, this trend presents an opportunity to encourage greater transit use or other forms of travel demand management (such as HOV lanes) where DVMT is concentrated in high-volume travel corridors. Highway investments in these corridors also have the potential for a high degree of cost-effectiveness due to the high volume of traffic served. The freight component of DVMT also may be affected by congestion in urban regions, which can increase the cost of goods movement. Providing increased or more accessible interstate rail capacity for freight movement can also offer relief to high-volume traffic corridors.

¹⁰ Virginia Transportation Research Council. 2035 Socioeconomic and Travel Demand Forecasts for Virginia and Potential Policy Responses, VTrans2035. July 2009

WHAT DOES THIS TELL US?

Virginia's current major urban areas will continue to grow and expand outwards. This is illustrated in Figure 16. Communities along the I-95 corridor between Northern Virginia and Richmond are expected to continue to capitalize on the economic growth in our nation's and Commonwealth's capitals. Both job and population increases in the range of 50% to 85% between 2010 and 2035 are anticipated in the Fredericksburg region, while residential growth is expected to outpace job growth southwest of Washington, D.C. Other areas will continue to grow, particularly areas located within the VSTP Valley and Ridge and Blue Ridge Regions, but at slower rates compared to the growth north of Richmond. This growth can be generally described as occurring in the I-64, Route 29 and I-81 corridors¹¹.

The needs of these fast growing areas present real challenges such as how to preserve roadway capacity, expand transit and focus growth in locations accessible by the current transportation network. These challenges lead to opportunities for looking at multimodal transportation options and encouraging more transit-friendly development with a focus on decreasing DVMT by improving proximity of households and jobs.

¹¹ VTrans2035

Figure 16: Growth Areas

