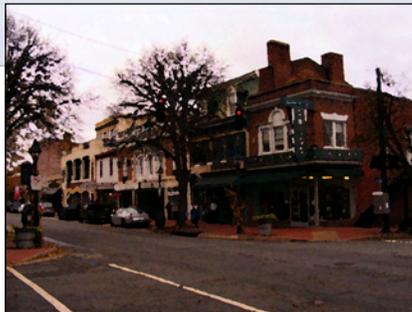
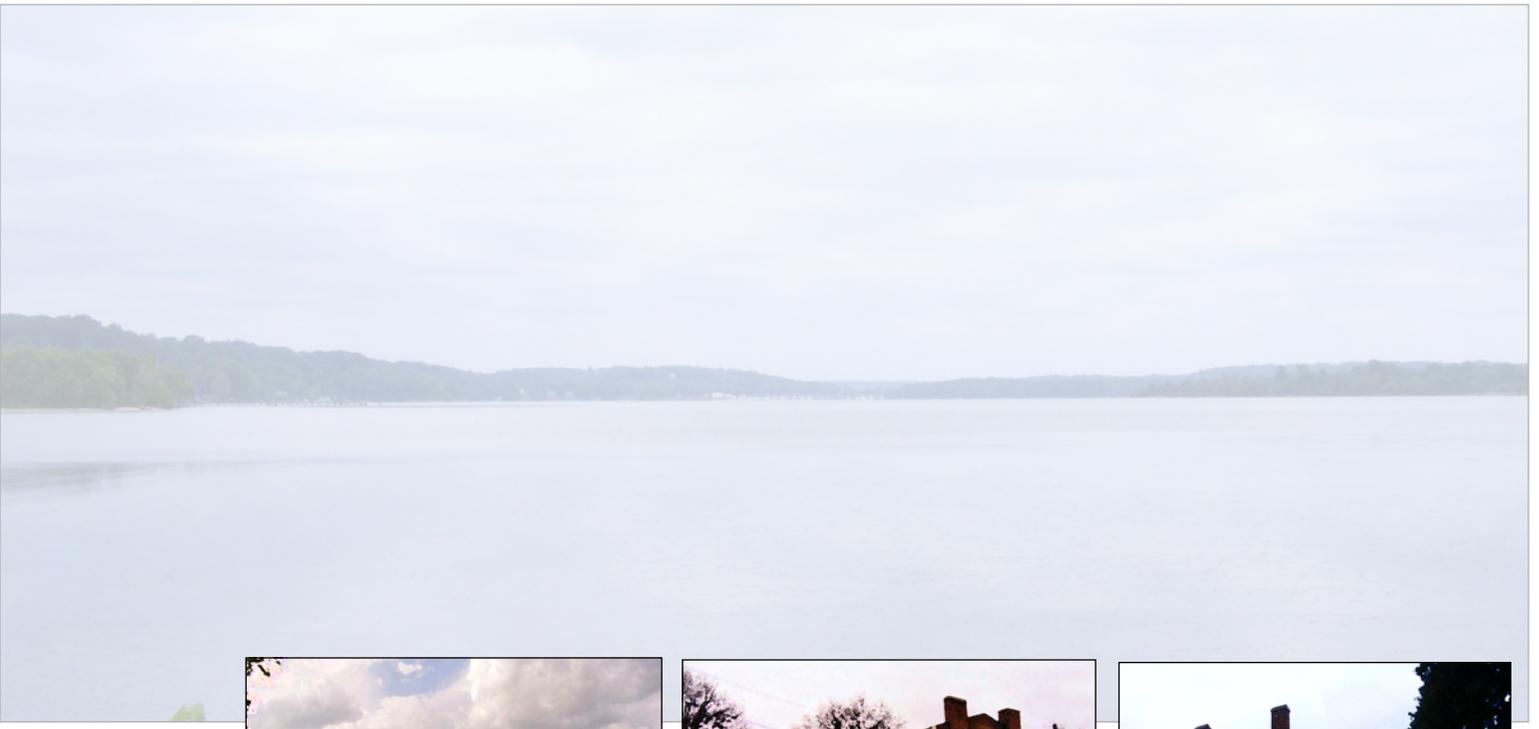


Building a Regional Framework:

Regional Scan Document for Your Vision, Our Future

■ The George Washington Regional Scenario Planning Study



August 16 - 2010





Preface

This document summarizes current conditions in the George Washington Region, which will become the baseline for measuring and evaluating the trade-offs of alternative future year development scenarios contemplated for *Your Vision, Our Future*. It provides a general overview of key trends and indicators that influence growth and development in the region while acknowledging community led initiatives to keep towns, cities, and counties unique within the planning area.

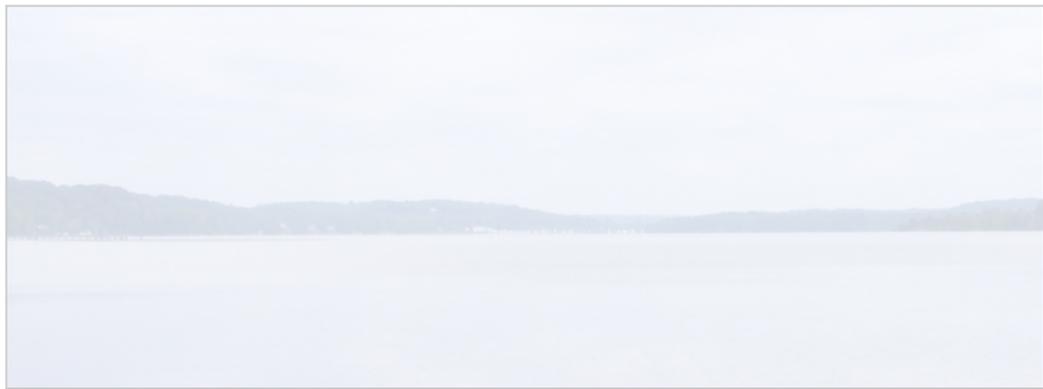


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Section A:
■ Introduction

Regional Scan Document

Section A - Introduction

In November 2009, the Fredericksburg Area Metropolitan Planning Organization (FAMPO) began the Your Vision, Our Future: The George Washington Region Scenario Planning Study, a regional visioning and scenario planning process. The study provides residents, business leaders, and elected officials throughout the George Washington Region the opportunity to explore and debate regional growth visions, their trade-offs, and alternative futures.

Scenario planning is being used throughout the process to identify regional goals and community values, as well as explore alternatives for growth, development, and transportation investment in the region. Among other uses, the scenario planning study is intended to add to the ongoing dialog on inadequate long-term transportation funding in the region (a \$7.59 billion shortfall), first identified in FAMPO's Constrained Long Range Transportation Plan (LRTP). Results of the scenario planning study will also be useful for the development of FAMPO's next LRTP.

Today, the George Washington Region is one of the fastest growing and most populous areas of Virginia. Significant growth is expected to continue through 2035, reaching a population of nearly 600,000 people. Anticipated growth will stress existing infrastructure and public facilities, including the regional transportation system, water and sewer infrastructure, fire and police protection, public schools, and the natural environment. Projected revenue streams are not expected to fund all improvements identified for the region.

The regional scan document provides an overview of key trends and indicators that influence growth and development in the region, which also acknowledging community led initiatives to keep towns, cities, and counties

unique in the planning area. Emerging trends and forces facing the region are serious: dramatic population increase over the past 30 years, challenges to improved economic vitality, stewardship of the natural environment, historic and cultural resources, managing new growth and development patterns, and building new and maintaining aging infrastructure. Some of these forces and trends are influenced by our collective actions in the Region. Others are trends beyond our control, but which will require our response.

The scenario planning process for Your Vision, Our Future brings together towns, cities, and counties in the region for an open dialog on the forces and trends affecting life in the George Washington Region. By including regional leaders in the process and providing a forum for interaction of these leaders, a regional dialog will be established.

Study Area

The study area for Your Vision, Our Future is the same as the area covered by the George Washington Region, which includes King George, Caroline, Spotsylvania, and Stafford Counties as well as the Cities of Fredericksburg, Bowling Green, and the Town of Port Royal.

Regional Partnerships

Several regional planning organizations have served the George Washington Region (Virginia Planning District 16), including the George Washington Regional Commission (PDC 16), created under the Regional Cooperation Act of 1968 and the Fredericksburg Area Metropolitan Planning Organization (FA MPO). FA MPO was established in 1993 to carry out the regional transportation planning process.

FA MPO's mission is to provide cooperative, continuous and comprehensive transportation planning to balance regional investments in roadway, public transit, bicycle, pedestrian, and other transportation needs. FA MPO is governed by an 11-member Policy Committee that includes representatives from Stafford, Spotsylvania, Caroline, and King George Counties, the City of Fredericksburg, the Virginia Department of Transportation (VDOT), the Federal Highway Administration (FHWA), the Virginia Department of Rail and Public Transportation (DRPT), and the Potomac and Rappahannock Transportation Commission (PRTC).

FA MPO is responsible for transportation planning, including the 25-year Long Range



Transportation Plan (LRTP), the Transportation Improvement Plan (TIP), the annual Unified Planning Work Program (UPWP), the Bicycle and Pedestrian Plan (BPP), and the Public Participation Plan (PPP). FA MPO and GWRC are partnering together to facilitate and oversee the Your Vision, Our Future planning process. FA MPO

The George Washington Regional Commission, (GWRC) previously known as the Rappahannock Area Development Commission (RADCO), provides a number of services to its member jurisdictions.

The principle functions include environmental and green infrastructure planning, hazard mitigation planning, regional affordable housing initiatives, transportation planning, and transportation

demand-management activities, including the GWRideConnect program and the three GoTelework.org telework centers. GWRC also supports several affiliated organizations, including the Rappahannock Economic Development Corporation (REDCO), the Rappahannock River Basin Commission (RRBC), and the Rappahannock Disabilities Services Board (RRDSB).

Because the Code of Virginia assigns zoning and subdivision authority exclusively to local governments, the purpose of GWRC's regional planning program is to support local planning efforts by providing technical support and data resources and to work with members to establish a vision for the Region as a whole. As part of regional visioning RADCO participated in the Reality Check: Envisioning Our Region's Growth study in November of 2005, which was facilitated by the Fredericksburg Regional Chamber of Commerce, ULI Washington, the Smart Growth Alliance, the Fredericksburg Regional Alliance, and the 5 localities. Over 100 elected officials, business executives, military personnel and leaders of non-profit environmental and civic organizations participated in the visioning exercise.

This Regional Scenario Planning Study is not intended to replace locally-adopted plans or ordinances in the five localities of the George Washington Region-- Spotsylvania County, Stafford County, King George County, Caroline County, and the City of Fredericksburg.

The plan will serve as a platform for regional dialog amongst policy makers and will provide new data for local governments. It will serve as a resource for Best Management Practices and implementation tools and provide the information necessary for local governments to implement those policies which they believe will positively affect their communities.

Report Organization

The subsequent chapters of this report will provide information on the region and its towns, cities, and counties.

The report will address regional trends in the physical environment, the built environment, infrastructure and cultural and historic resources.

In addition, the report will include information on the anticipated population and employment growth, inventory of local plans and policies, and trends occurring at the local level. Sections in the document will address:

- Anticipated Regional Growth
- Regional Influences
- Region-at-a-Glance
- Community Assessments



Section B:
■ Anticipated Growth

Regional Scan Document

Section B - Anticipated Growth

The George Washington Region is now the fourth most populated region in Virginia, with the highest growth rate between 1994-2010. Population in the area has grown from 64,302 residents in 1960 to 309,483 in 2006. This change in population represents an annual compound growth rate of 3.5%.

The Region has seen dramatic population growth over the last 16 years, adding nearly 140,000 residents, which represents an 82 percent increase. By comparison, the Commonwealth of Virginia has grown by 23.5 percent over the same period. FAMPO's location midway between the Washington DC-Northern Virginia metropolitan area (to the north) and the Richmond-Petersburg metropolitan area (to the south) has encouraged significant in-migration of new residents. These residents are finding employment in the greater region, seeking affordable housing in more rural and lower-density suburban areas, and enjoying "easy" commuting access to the larger job markets north and south of the Region.

Net migration is the difference between the number of persons moving into an area and the number moving out. It is a significant factor driving growth in the region. Nearly 78 percent of the growth of the Region's population between 2000 and 2006 has been due to an increase in net migration.

Recession & Growth

Though population growth continues in the GW Region, the rate has slowed significantly during the recession.

Stafford and Spotsylvania counties are now near the bottom of the 100 fastest-growing counties in the nation, based on newly released U.S. Census Bureau estimates. Both counties have frequently been in the top half of that list during the past two decades, but now have annual growth rates

below 2 percent.

Group Quarters Population

Population in group quarters includes persons residing in college dormitories, military barracks, hospitals, long-term care facilities, and jails and correctional facilities. This population does not necessarily grow in direct proportion to the growth in the general population. There is expected growth in military and federal civilian barracks in Stafford and Caroline counties related to Base Realignment and Closure (BRAC) expansions at MCB Quantico (MCBQ) and Fort A.P. Hill. In addition, Remuda Ranch, a substance abuse center, is open in Caroline County. With additional regional population growth, proportional increases in regional jail inmate populations can be anticipated as well.

Anticipated Growth (2035)

According to population forecasts compiled from a number of sources, including the Commonwealth of Virginia and commercial vendors, the region will continue to experience dramatic growth and development for the next three decades. These population projections indicate that the regional population will approximately double by 2035, from 315,000 people to nearly 600,000 people. Moreover, the region will remain the fastest growing in Virginia. Population forecasts for cities and counties in the region are provided on Page B.3.

Under current local government development policies and ordinances, the majority of growth

is planned to be suburban in density and style. As the region continues to grow, suburban-style shopping centers and residential subdivisions will replace open fields and forests. While the City of Fredericksburg has contemplated a more urban future, the majority of the region will experience continued suburbanization similar to that of the past several decades.

Thirty more years of suburbanization, settling an approximately 300,000 more people in the region, will intensify the opportunities and challenges experienced in the last several decades. There is increased public interest in reducing or reversing the trend of urban sprawl and its consequences, such as consumption of sensitive land for development, costly expansion of public infrastructure, and increasing traffic congestion.

Regional Labor Force

The Region's civilian labor force (CLF) has expanded as population has grown: between 2000 and 2006, the Region's CLF expanded by 36,394 laborers. This increase represents a 4.3% compound annual growth rate.

An estimated additional 3,455 workers were added in 2007 at a more modest 2.1% compound annual growth rate, reflecting a slowdown in the regional economy. This trend is also mirrored by the slower rate of building permits issued compared to prior years. The Region's unemployment rate from 2000 through 2006 has consistently remained below the statewide average.

As part of the national economic recession, the unemployment rate in the Region increased. According to U.S. Bureau of Labor Statistics, the U.S. unemployment rate was 10.4% in February 2010. Virginia has a comparatively lower rate

of 7.7%. Caroline, King George, and the City of Fredericksburg have unemployment rates comparable to the national average, while the two urban counties in the area have much lower rates.

Major Employers

The top thirty (30) employers in the Region have an estimated aggregate employment of 45,295 employees, representing nearly 40 percent of total employment in the Region. Of the top 30 employers in the region, federal, state and local government employ 68 percent of the total labor force. Various private companies account for remaining employment. Employment forecasts for cities and counties are shown on the following page.

Anticipated Growth Totals (2035) Cities & Counties in the GWRC

Year	Households	Population	Employees		
			Retail	Other	Total
2000	83,709	235,744	22,151	61,694	83,845
2006	108,683	309,763	15,949	93,056	109,005
2015	121,351*	394,380	49,125	94,981	144,106
2025	176,464	494,891	61,234	118,574	179,808
2035	212,405	592,696	70,760	137,100	207,860

*Household Number for 2010

Population & Employment Forecasts

City of Fredericksburg Growth Projections, 2000- 2035

Year	Households	Population	Employees		
			Retail	Other	Total
2000	8,102	16,960	6,774	12,221	18,995
2006	8,176	21,015	4,329	21,960	25,202
2015	8,769	23,744	11,376	19,936	31,310
2025	10,593	26,817	13,474	24,876	38,351
2035	11,786	29,852	14,918	28,762	43,679

Spotsylvania County Growth Projections, 2000- 2035

Year	Households	Population	Employees		
			Retail	Other	Total
2000	31,308	89,841	9,124	16,427	25,551
2006	41,462	119,974	6,696	27,640	34,336
2015	46,445	154,783	13,046	30,470	43,516
2025	68,681	196,600	16,160	38,049	54,209
2035	83,024	236,885	18,565	43,986	62,551

Caroline County Growth Projections, 2000- 2035

Year	Households	Population	Employees		
			Retail	Other	Total
2000	8,021	21,543	1,287	3,483	4,770
2006	9,004	26,268	1,099	5,874	6,973
2015	9,940	32,746	3,670	5,563	9,233
2025	13,315	39,977	4,981	6,970	11,951
2035	15,519	47,007	6,144	8,072	14,216

Stafford County Growth Projections, 2000- 2035

Year	Households	Population	Employees		
			Retail	Other	Total
2000	30,187	90,952	4,179	21,140	25,319
2006	42,263	121,289	3,938	34,555	38,493
2015	47,523	156,258	16,298	32,325	48,623
2025	71,254	197,741	20,047	40,353	60,400
2035	86,743	238,208	22,911	46,663	69,574

King George County Growth Projections, 2000- 2035

Year	Households	Population	Employees		
			Retail	Other	Total
2000	7,777	22,217	629	7,868	8,497
2006	6,091	16,448	787	8,423	9,210
2015	8,674	26,850	4,718	6,661	11,379
2025	12,621	33,757	6,553	8,307	14,860
2035	15,333	40,744	8,213	9,607	17,821

* data is from 2010

Regional Growth Influences

Although the recent economic recession has impacted regional economic development, slow and steady employment growth is expected to be driven by several factors in the long term, including:

- De-centralization of the federal government, with the location of satellite office complexes and telework centers in the Region;
- Continued outward expansion of the Washington D.C. and Richmond Metropolitan Statistical Areas, motivating more companies to look to “outer fringe” communities to locate back-office, warehousing and branch office functions in lower cost-of-living areas where employees can avoid “extreme” commute times and enjoy a better quality of life;
- Enhanced connectivity with National and State capitals resulting from HOV and transit system improvements, including VRE Commuter Rail and the prospects of hi-speed inter-city rail;
- Hi-tech and defense-related consulting sector growth associated with BRAC-induced and other expansions of Quantico Marine Base and Naval Support Facility Dahlgren, and Fort A.P. Hill;
- Continued expansion of retail, personal services, health care services and business service sectors along with the growth of the Region’s population and increasing affluence,
- Continued growth of local government employment, tied primarily to elementary and secondary education, planning and management of public infrastructure and services;
- Expansion of professional and technical education and /or adult training opportunities, and;
- The aging of the “baby-boom” population, contributing to demand for more personal and health care service employment.



Section C:
■ Regional Influences

Regional Scan Document

Section C - Regional Influences

Regional forces in and around the planning area were inventoried for Your Vision, Our Future. Included in this section is a summary of economic, cultural, environmental, and political activities in the region that influence the type, pattern, intensity, and location of development in the planning area.

Regional influences are typically institutions that have made long-term investments in the region, either through instituted policies, capital construction, land ownership, or economic development. These investments guide growth and development and are of critical concern when local governments conduct long-term planning efforts. The region is the product of the unique combination of these influences and the decision-making agencies described here. The continued presence of these regional influences is critical to the success of the region as a whole, and their contributions to employment, land preservation, transportation enhancements, and creating and maintaining livable communities are described below.

Federal Government Actions

With the presence of three military bases in the region, coupled with the region's close proximity to the Nation's Capital and Federal Government installations throughout the Washington DC Primary Metropolitan Statistical Area (PMSA), the Region's development potential is closely tied to federal plans for military installations and other operations of the Federal Government.

Marine Corps Base Quantico

Marine Corps Base, Quantico (MCBQ) was founded in 1917 and encompasses approximately 59,000 acres located roughly 30 miles south of

Washington, DC. The base consists of two major areas divided by Interstate 95: Mainside and Westside. Mainside, located east of I-95, provides numerous administrative services, support, and some training functions. Westside, west of I-95, is used primarily for military and federal law enforcement training.

The majority of the existing development at MCBQ occurs east of I-95. Infrastructure and services have been extended as additional facilities have been added to the area. Many of the facilities within the Mainside area have been modified to accommodate changes in program requirements and mission support.

The area west of I-95 at MCBQ contains approximately 51,000 acres and has three concentrated areas of development: the FBI Academy, Camp Barrett, and Camp Upshur, comprising approximately 800 acres. The remainder of the area has been divided into Training Areas. Activities within Training Areas have specific functions that are centrally regulated by Range Control and/or the Weapons Training Battalion.

Amphibious warfare, close-air support, and vertical envelopment using helicopters have been developed and perfected at MCB Quantico. MCB Quantico also serves as the focal point for professional military education. The Marine Corps University provides the academic platform the Corps uses to shape and sharpen leaders at every milestone of their professional lives. Officers in the Marine Corps begin their careers at the Officer Candidates School and the Basic School. Enlisted marines receive additional leadership training at the University's Staff Non-Commissioned Officers Academy. The Marine Corps War College, School of Advanced Warfighting and Amphibious Warfighting School

are also part of the University, training officers in the U.S. Armed Forces and international officers from designated foreign countries in the art of war.

As a result of the 2005 Base Realignment and Closure (BRAC) decisions, the co-location of the Military Department Investigative Agency (MDIA) Headquarters with the Counterintelligence Field Activity and Defense Security Service has been ordered by 2011. The relocation of these organizations will require new facilities to house them. There is also a need for facilities to support Marine Corps units currently on Mainside, to accommodate growth, to provide for consolidation of personnel located elsewhere, and to replace inadequate facilities. MCBQ will remain a possible site for relocation of future Federal and Marine Corps initiatives.

In 2000, as part of a long-range planning effort to accommodate anticipated development requirements, MCBQ identified the Russell Road Area and MCB-1 Area west of I-95 as the most suitable areas for new development without impacting MCBQ's primary mission of military education and training. In 2006, MCBQ re-evaluated the Russell Road Area and MCB-1 Area for their suitability to accommodate the BRAC 2005 actions, as well as other units at

MCBQ requiring new facilities. The 2006 effort added acreage to the original Russell Road and MCB-1 areas, while reaffirming the suitability of these areas for new development. In addition to the main MCB-1 Area at the intersection of MCB-1 and MCB-2/Hotpatch Road, a second non-contiguous site near the Weapons Training Battalion was also added to the MCB-1 Area.

MCBQ proposes development of the Westside of the base, including the 2005 BRAC action at MCBQ. The development would entail construction of new facilities in two undeveloped areas west of I-95. These areas, the Russell Road Area and the MCB-1 Area, would accommodate the co-location of the Military Department Investigative Agency (MDIA) Headquarters with the Counterintelligence Field Activity and Defense Security Service as directed by the 2005 BRAC law. They would also provide space for adequate facilities to support Marine Corps units currently at MCBQ, as well as other federal and Marine Corps initiatives that may identify MCBQ as a site for relocation. The components of the Proposed Action include construction and operation of new facilities with a potential mix of uses to include administrative, warehouse, maintenance, and industrial facilities, with the necessary infrastructure, road improvements, and security measures to support the Proposed Action.



Year	Resident Population				Employment		
	Household Population	Group Quarters	Households	Housing Units	Federal Military	Federal Civilian	Total
2006 Base	5,012	2,358	1,412	1,678	6,381	8,358	4,739
2011 BRAC	5,012	2,358	1,412	1,678	6,732	10,665	17,397
2006-2011*	0	0	0	0	351	2,307	2,658
2025-2035	5,012	2,358	1,412	1,678	6,732	12,665	19,397

*Net Change

Two alternatives were developed to implement the Proposed Action based on the Quantico Land Use Plan, I-95 West (MCBQ, 2006). Alternative A, BRAC Action, would add only the development required to accommodate those personnel (approximately 3,000) associated with the BRAC 2005 action. The 3,000 personnel would include an estimated 2,658 working on base and 355 working off base. The area required for the facilities is estimated as 70 acres. There would be construction of approximately 735,000 square feet (SF) of interior space and provision of parking spaces for employees, students, fleet vehicles, and visitors. Necessary supporting infrastructure would also be provided.

Alternative B would add 5,000 personnel to work in the Westside. The BRAC personnel are assumed to increase from 2,658 under Alternative A to 3,000 on base under Alternative B. The additional 2,000 personnel to bring the total to 5,000 personnel for this alternative are assessed using requirements for units at MCBQ identified for relocation in the Quantico Land Use Plan, I-95 West (MCBQ, 2006). These units currently have approximately 1,000 personnel that work on Mainside. With subsequent identified growth for the Marine Security Guard Battalion, this total increases to 2,000. The requirements to accommodate the additional 2,000 personnel for these units, plus those of a needed industrial park, total an estimated 71 acres and more than 565,000 SF of interior space plus parking for

the additional personnel. The BRAC land area requirement is assumed to expand to 77 acres from 70 acres to accommodate the BRAC growth of 300 personnel (3,000 total) working on base; the total Alternative B requirement is 148 acres and 1.3 million SF of interior space. Socioeconomic effects to the surrounding economy would be expected under each alternative, resulting from the large investment in construction of new facilities. Construction costs for Alternatives A and B are estimated at \$270 million and \$436 million respectively. Implementation of Alternatives A and B would increase local residents employed in the region of influence (ROI) by approximately 1,500 and 2,800 respectively with associated additional family members. Assuming national average family size for the incoming personnel, this could add approximately 3,750 residents and 740 school children under Alternative A and 7,000 residents and 1,400 school children under Alternative B to local communities. The additional population could require additional services. In addition, the BRAC student population would add an average of 263 transient personnel requiring lodging (maximum of 453, minimum of 73 for 360 days per year). These would have corresponding effects to the local economy, construction expenditures, and employment. However, the surrounding region is already planning for 30,000 additional school children in the next five years and has constructed over 50,000 housing units over the past five years to accommodate growth. Population growth is projected to total 178,000

new residents in the ROI between 2000 and 2010. The additional growth and demand for services under Alternatives A or B are small in comparison. The following table summarizes the pre and post BRAC impacts on the MSBQ installation.

Naval Surface Warfare Center Dahlgren Division

Naval Surface Warfare Center Dahlgren Division is named after Rear Admiral John A. Dahlgren and is located in King George County on the Potomac River. NSWC Dahlgren was founded as the U.S. Naval Proving Ground on October 16, 1918 as a result of the expanded range of large caliber naval guns. The U.S. Naval Proving Ground was renamed sometime after 1950 to the U.S. Naval Weapons Laboratory. In 1974 it was renamed the Naval Surface Weapons Center and acquired its current name around 1990.

Currently, Dahlgren is the Navy's leading research facility for integration of complex systems and for Research Development Testing and Evaluation (RDT&E) of surface warfare, surface ship combat systems, ordnance, strategic systems, and special warfare. Over 6,000 scientists and engineers are employed to develop cutting edge applications of surface warfare and homeland and force protection technology.

NSWC Dahlgren's RDT&E strengths include lasers, optics, pulsed power, sensors, electromagnetic environmental effects, counter-drug technology, warfare analysis, ballistic missile defense technology, computer warfare defense technology, advanced ordnance, and chemical/biological/radiological defense. Dahlgren is the main naval laboratory supporting the Department of Defense's (DoD) Chemical and Biological Defense Program (CBDP) established in response to the Defense Against Weapons of Mass

Destruction Act passed by Congress in 1996.

Dahlgren is the Navy's only fully instrumented, over-the-water gun range using a coastal, shallow-water, or "littoral," environment. Testing in a shallow coastal environment is necessary because weapons systems and sensors function differently over water than they do over land. Testing at Dahlgren is an important part of the mission because the physical conditions are very similar to the conditions where today's naval combat occurs – in coastal shallow waters rather than in deep waters. Dahlgren's Potomac River Test Range provides the opportunity for very realistic tests and results.

Dahlgren has special facilities that create the equivalent of a "ship on shore," where new concepts of warfare can be developed and tested in a coastal environment. Because the test facilities are fully instrumented, there is a full spectrum of installed shipboard and experimental systems that allow for testing to be done on individual components or on entire systems.

The U.S. Navy published a Notice of Intent to prepare an EIS in the Federal Register on June 18th, 2007. The Navy intends to expand research, development, test and evaluation (RDT&E) activities that take place outdoors on Dahlgren's ranges and mission areas. These activities require the use of lasers, electromagnetic energy, chemical and biological stimulants, detonations and ordnance.

The testing of guns and projectiles would continue at current levels. The number of hours per year that Dahlgren reserves special use airspace over the ranges would remain at current levels, but use of the airspace would increase. The number of hours per year that test activities delay large vessels on the Potomac River would increase.

These actions would enable Dahlgren to meet mission-related warfare and force protection requirements to provide RDT&E for ordnance, surface ship combat systems, force level warfare, and force protection. Fulfilling this mission would enable the Navy and other stakeholders that rely on Dahlgren's RDT&E program to successfully meet current and future national and global defense challenges. The Draft EIS is still under development and is slated for completion in 2010.

Fort A.P. Hill

Fort A.P. Hill is located in Caroline County, and is named after Confederate Lieutenant General Ambrose Powell Hill. It is an all-purpose, year-round military training center. The 76,000 acres of land include a modern 28,000-acre live fire range complex with more than 100 direct and indirect fire ranges. Fort A.P. Hill is known as the place "Where America's Military Sharpens Its Combat Edge".

Fort A.P. Hill was established as an Army training facility on June 11, 1941, pursuant to War Department General Order No. 5.

Today, Fort A.P. Hill is a training and maneuver center focused on providing realistic joint and combined arms training. All branches of the Armed Forces train on Fort A.P. Hill and the installation has also hosted training for foreign allies. Whether it's providing support for a mobilization or helping units train for deployment, Fort A.P. Hill's state-of-the-art training facilities and ranges, and professional support staff, continue to ensure America's Armed Forces have the edge needed to win in the 21st Century operational environment.

The 2005 BRAC process found that Fort A.P. Hill had suitable land and scheduling capacity to support the relocation of the U.S. Army's



Explosive Ordnance Disposal (EOD) School from Redstone Arsenal, Alabama. Over the next year the facilities required to train more than 2,000 EOD soldiers annually will be constructed. The facilities will include several ranges for demolition exercise and training areas where EOD technicians will be taught to utilize robots to remotely defuse improvised explosive devices.

Long-term minor beneficial effects on economic development can be expected. Based on a range of total cost to construct of \$8 to \$35 million, 60 to 80 direct jobs could be created and approximately \$1.8 million to \$2.5 million in direct income and approximately \$2.9 million to \$7.4 million in direct sales volume could be generated. The direct effects would also result in secondary job creation, income generation, and spending. These increases in business volume, income, and employment would not exceed historical fluctuations and would therefore be considered minor. No increase in population is projected.

No adverse effects on housing would be expected. Long-term minor adverse effects on medical services would be expected from the additional student Soldier load at the installation that could increase demand for medical services. No adverse effects on police or fire services would be expected. No effect on schools, family support, services, and recreation, environmental

justice, or protection of children would be expected.

Chesapeake Bay Preservation Regulations

Land use decisions have increased point and nonpoint sources of pollution. That pollution contributes to the degradation of the tributary streams and the Chesapeake Bay. To address concerns for increasing pollution, the Virginia General Assembly adopted the Chesapeake Bay Preservation Act in 1988. The final regulations were adopted in 1990 and were designed to protect and improve the water quality of the



Chesapeake Bay, its tributaries and other state waters. The effort is to be implemented and managed at the local government level. Local governments in Tidewater Virginia must establish a program to protect and enhance water quality. The localities are required to identify and protect environmentally sensitive lands. Depending on the degree of sensitivity, the lands may be categorized as Resource Protection Areas or Resource Management Areas. The Region contains both types of protected areas.

Environmental Protection Agency (EPA) Chesapeake Bay TMDLs

In 1998, major portions of Chesapeake Bay and its tidal tributaries within Virginia were identified as not meeting water quality standards and listed as impaired. Areas of the Bay and tidal rivers within Maryland, Delaware and the District of Columbia are also on the federally approved list of impaired waters. The main pollutants causing these impairments are nitrogen, phosphorus, and sediment. Significant efforts have been taken and resources expended by federal, state, and local governments and other interested parties throughout the entire 64,000 square mile Chesapeake Bay watershed. Despite these efforts the water quality goals under the Clean Water Act have yet to be met.

Because these Bay waters remained impaired in 2008, the six Chesapeake Bay Watershed States (Virginia, Maryland, Delaware, West Virginia, Pennsylvania, and New York), the District of Columbia, and U.S. Environmental Protection Agency agreed that a Total Maximum Daily Load (TMDL) needed to be developed. EPA has assumed primary responsibility for the establishment of the Bay TMDL with assistance from the Bay watershed states. The target date for completing this is December 31, 2010, although under a federal court consent decree.

The Chesapeake Bay TMDL will address all segments of the Bay and its tidal tributaries that are impaired. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards will be identified. This aggregate watershed loading will be divided among the Bay states and major tributary basins, as well as by major source categories (wastewater, urban storm water, agriculture, and deposition). EPA has

released initial working target loads for each of the Chesapeake Bay jurisdictions. The evolution of this program will impact how local government manage development as well as point and non-point pollution sources.

State Access Management Regulations

The General Assembly of Virginia approved legislation in 2007 that granted authority to the Virginia Department of Transportation (VDOT) to develop statewide access management regulations and standards. Access management regulations for Principle Arterials took effect on July 1, 2008 and regulations for Minor Arterials, Collectors, and Local Streets took effect on October 14, 2009. These regulations apply to VDOT controlled roads and are intended to 1) reduce traffic congestion and enhance public safety by reducing conflicting traffic movements, 2) reduce the need for new highways and road widening by maximizing the performance of existing state highways, 3) support economic development by promoting the efficient movement of goods and people, 4) preserve the public investment in new and existing highways, and 5) ensure that private property is entitled to reasonable access to the highways. In order to achieve these goals, access management regulations and standards were defined for the location, spacing, and design of entrances, street intersections, median openings and traffic signals. The rules specify how to locate entrances a safe distance from intersection turning movements and from interchange ramps, how to provide vehicular and pedestrian circulation between adjoining properties, and how to share highway entrances.

More information and specific access management requirements for state roads are summarized in the following documents: Access



Management Regulations: Principle Arterials (24 VAC 30-72), Access Management Regulations: Minor Arterials, Collectors, and Local Streets (24 VAC 30-73), and Roadway Design Manual, Volume 1, Access Management Design Standards for Entrances and Intersections, Appendix F.

State Secondary Street Acceptance Requirements (SSAR)

State Secondary Street Acceptance (SSAR) were enacted by the Virginia Department of Transportation in March of 2009. The rules changed public policy concerning the design and function of secondary streets in the state. New requirements emphasize context sensitive design, bicycle and pedestrian accommodations, enhanced street connectivity, and minimal environmental impacts from storm water runoff. This update is a significant departure from the previous policy of accepting any street that served three or more homes and was built to conform to state design and construction standards.

Street connectivity standards in the SSAR vary by context area: compact, suburban, or rural. All three conditions are present in the George Washington Region. Local governments may work with VDOT to officially alter the perimeter

of an area type when specific situations warrant such action. More information and specific design requirements for subdivision streets are summarized in the following documents: Secondary Street Acceptance Requirements (24 VAC 30-92-10), Secondary Street Acceptance Requirements, Guidance Document for the Commonwealth Transportation Board's Secondary Street Acceptance Requirements (24 VA 30-92), and the Roadway Design Manual, Volume 1, Subdivision Street Design Guide, Appendix B1.

Urban Development Areas

Urban Development Areas are defined as “an area designated by a locality that is appropriate for higher density development due to proximity to transportation facilities, the availability of a public or community water and sewer system, or proximity to a city, town, or other developed area.”

In 2007, a provision for including Urban Development Areas in local Comprehensive Plans was adopted into Virginia Law. Title 15.2, Chapter 22, part 23.1 (§15.2-2223.1) states that “Every county, city, or town that has adopted zoning pursuant to Article 7 (§ 15.2-2280 et seq.) of Chapter 22 of Title 15.2 and that (i) has

a population of at least 20,000 and population growth of at least 5% or (ii) has population growth of 15% or more, shall, and any county, city or town may, amend its comprehensive plan to incorporate one or more urban development areas”.

The UDAs are required to provide commercial and residential densities that are appropriate for reasonably compact development at a density of at least four residential units per gross acre and a minimum floor area ratio of 0.4 per gross acre for commercial development. The UDAs may provide a mix of residential housing types, including affordable housing, to meet the projected family income distributions of future residential growth.

Local comprehensive plans must designate one or more urban development areas sufficient to meet projected residential and commercial growth in the locality for an ensuing period of at least 10 but not more than 20 years, which may include phasing of development within the urban development areas. The boundaries and size of each UDA shall be reexamined and, if necessary, revised every five years in conjunction with the update of the comprehensive plan and in accordance with the most recent available population growth estimates and projections. Such districts may be areas designated for



redevelopment or infill development.

The legislation also states that the UDAs shall incorporate principles of new urbanism and traditional neighborhood development, which may include but need not be limited to:

- pedestrian-friendly road design,
- interconnection of new local streets with existing local streets and roads,
- connectivity of road and pedestrian networks,
- preservation of natural areas,
- satisfaction of requirements for stormwater management,
- mixed-use neighborhoods, including mixed housing types,
- reduction of front and side yard building setbacks, and
- reduction of subdivision street widths and turning radii at subdivision street intersections.

By-right development is also addressed in this legislation, stating that:

no county, city, or town that has amended its comprehensive plan in accordance with this section shall limit or prohibit development pursuant to existing zoning or shall refuse to consider any application for rezoning based solely on the fact that the property is located outside the urban development area.

Revised State Storm Water Management Regulations

In 2009, the Commonwealth of Virginia Soil and Water Conservation Board adopted revised storm water management regulations. The effective implementation date was postponed by the 2010 Virginia General Assembly. The effect

of the adopted, but deferred, revisions are to change the amount of surface water run-off from developed lands to reduce surface erosion effects and improve water quality of Virginia’s streams and rivers. Many environmentalists and local government storm water managers anticipate that these regulations may be subject to further changes once the outcome of the federal Chesapeake Bay TMDL process is known.

Use of Alternate Septic Systems in Rural Areas

In 2009, the Virginia Department of Health adopted regulations for the use of alternate septic systems which allow for the development of land where poor soil conditions would not support the use of conventional septic drain fields. Historically, the presence of such poor soils which did not allow for residential wastewater effluent to be filtered and treated by underground microbial action have been use by local governments as a reason to deny development applications or severely limit development density. These regulations have been viewed in the planning community as a “game changer” in the way local governments have planned and managed development.



Agriculture

Agriculture plays an important role in the region's economy. Although its value has declined in recent history-- agricultural lands are valued for their scenic viewsheds and contribution to the rural character of the region. Preservation of agricultural lands is tied to alternative economic development strategies for rural areas and open space preservation. Jurisdictions within the region can voluntarily participate in statewide agricultural protection programs and promote land conservation and farmland protection through conservation easements, transfer and/or purchase of development right programs.



Conservation Easements

Private landowners can choose to place permanent conservation easements on their property, preserving the natural, undeveloped character of their land, influencing local and regional patterns of future development. For example, the City of Fredericksburg owns 4,945 acres upstream west of I-95 along the Rappahannock and Rapidan Rivers. The majority of this land is under riparian conservation easement. Continued promotion of land conservation programs has been federal and state government environmental policy in the Mid-Atlantic region to mitigate the impact of development on the Chesapeake Bay.

National Park System

Within the region, the Federal Government, owns parkland comprising the Fredericksburg-Spotsylvania National Military Park, and four Federal Battlefield Parks within Spotsylvania.



Section D:
■ **Region-at-a-Glance**

Regional Scan Document

Section D - Region-at-a-Glance

This chapter represents a comprehensive inventory and assessment of conditions and community features unique to the study area. It communicates how land is organized, used, and supported by public facilities and services, and provides specific information, by jurisdiction on service providers, and the built and natural environments.

Natural Environment

Agricultural areas, national parks, lands regulated by the Chesapeake Bay Preservation Act, and lands under permanent conservation easement are predominant features of the natural environment that guide the historic development patterns in the region. These and other environmental features will continue to guide and locate development in the future.

In addition to the regional and statewide policies already discussed in Regional Influences, topography, wetlands, soils, and watersheds are also of local and regional importance when examining the natural environment. These physical characteristics in the region guide the specific form and pattern that development takes in each jurisdiction. Although not all of these areas are protected, specific design guidelines are present in communities where these natural features could be limiting.

Topography

The majority of the region is gently to moderately sloping and does not typically exceed 500 feet above sea level. Steep slopes are not prevalent in the region.

Watersheds

The region is covered by three watersheds for the Rappahannock, York, and Potomac Rivers. Each of

Map D1: Environmental Features in the Study Area



these rivers is a tributary of the Chesapeake Bay, requiring protection under the Chesapeake Bay Preservation Act.

Wetlands

A wetland is defined by the U.S. EPA as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Wetlands are determined based on a certain criteria distributed in a manual and subsequent guidance from the U.S. Army Corps of Engineers. Tidal wetlands usually occur next to tidal waters and are generally marshes or salt ponds. Non-tidal wetlands occur inland along streams, lakes, and ponds. These areas are subject to local regulations that can inhibit or prohibit development completely.

Green Infrastructure

Green infrastructure, the interconnected network of natural lands and other open spaces that conserve natural ecosystem values and functions, sustain air and water, and provide natural habitat and other benefits to people and wildlife, involves a network consisting of core natural areas connected by corridors to help animals, seeds, and people move across the landscape. Benefits of this interconnected network include: combating global warming, improving air quality, protecting water resources, providing recreation and public health benefits, enhancing community appearance, providing storm water management, and protecting wildlife habitat. Green infrastructure planning to date in the Region has consisted of mapping a regional system of corridors and areas that

provides a potential regional network of green infrastructure corridors and inventorying the amount and trends of change in tree canopy and impervious surface area. Healthy trees provide valuable environmental benefits through biological functions performed by their roots and leaves. These functions or “ecosystem services” include: reducing storm water runoff, increasing atmospheric carbon sequestration and storage, improving air and water quality.

The satellite imagery analysis determined that between 1996 and 2009, the GW Region lost 4.17% of its tree canopy that covers approximately 72% of the Region’s land area and experienced a 43.5% increase in impervious area associated with additional rooftops, driveways, roadways, parking lots, etc. The loss of tree canopy resulted in the inability of the trees to remove approximately 2.89 million pounds of air pollutants annually, and 1.24 million pounds of carbon stored in trees’ wood, and 9,616 pounds of annual carbon sequestration. The detailed study can be used to educate local government staff, planning commissioners, and elected officials on the value of green infrastructure and the associated indirect ecosystem costs of new development.

Built Environment

The historic development patterns of the region have resulted in a predominantly rural environment with clusters of suburban or urbanized areas. The City of Fredericksburg and the Towns of Port Royal and Bowling Green have historically been the location of more clustered, urban and town center type developments. Major employment centers that draw residents from the area include D.C. and Richmond. Frequent travel to these destinations ensures that suburbanization along the I-95 corridor continues.

Other locations for growth include the areas surrounding NSWC Dahlgren-- where a mix of residential and commercial uses line the major corridors leading into and out of the base. Complementary businesses also have chosen to locate themselves in office and light industrial style parks near to NSWC Dahlgren.

The explosive growth of the past 20 years has lead to more suburban sprawl. However, the provision of transportation, water, and sewer infrastructure, combined with the protection of environmentally- sensitive and historically significant lands and areas under conservation easements, has the potential to continue guiding and shaping growth into the future.

Supporting Infrastructure

Transportation

The existing transportation system in the George Washington Region includes a variety of transportation modes, the most prevalent and widely used being the roadway system. The region's drastic population growth, doubling its 1990 population of 170,410 to an estimated 309,483 persons in 2006, has strained the transportation infrastructure, pushing the region's roadways system to capacity. This has lead to traffic congestion and safety issues on the interstate, and primary and secondary road system throughout the urbanized area. These congestion and safety issues are becoming increasingly worse and are beginning to impact the rural localities. Expanding commercial development along roadways coupled with limited access to I-95 near the residential areas of the region are the main culprits for increasing congestion.

Although not as widely used; other modes of



transportation include: rail (both passenger and freight), public transportation, car and van pooling programs, bicycle/walk facilities and airports.

This section gives a brief overview of the existing transportation system in the GW Region summarized by mode of transportation.

Roadways

The roadway network in the George Washington Region is characterized by a network of interstates and primary and secondary roadways that are regularly congested during weekday peak periods, weekends, and holidays. A growing gap in maintenance needs and transportation funding has combined to create roads in disrepair. Interstate 95, which serves as the primary north/south interstate for the movement of people and freight for the Eastern United States traverses four of the five localities that comprise the GW Region. The roadway generally follows the fall line that separates the Atlantic Plain and the Appalachian Highlands. I-95 carries an average of 160,000 vehicles per day, the majority of the north-south traffic through the region. There are many congestion and safety issues associated

with this aging highway.

Interstate 95 is supported by 286 miles of primary roadways including US Routes 1, 17, and 301, and State Routes 2, 3, 205, 206, 207, 208, 218, and 30. US Routes 1 and 301 are north/south routes that connect the Region with Washington D.C. and Richmond, VA and Baltimore, MD. US 17 is an east-west arterial road that connects the region with Northwestern Virginia and Southeastern Virginia.

Primary roadways are the primary points of access to I-95 and residential areas. Coupled with expanding commercial development, these roads continue to be congested.

The Region has a 1,920 mile network of secondary roads. These roads provide access to the region by connecting the interstate and primary systems. Some portions of the secondary system also have direct access to I-95, including County Routes 610 (Garrisonville Rd.), 630 (Courthouse Rd.), 606 Morris/Mudd Tavern Rd.) and 639 (Ladysmith Rd.).

County Route 610 (Garrisonville Road) is one of the busiest interchanges and corridors in the Region. This corridor is Stafford County's commercial and retail center and has intensive residential development. It serves as one of the primary access points (Onville Road) to the western side of MCB Quantico.

The secondary system is generally seeing significant residential development with pockets of commercial development, which also contributes to traffic congestion. Many quiet, rural roads are turning into busy suburban thoroughfares. Caroline and King George Counties are on the verge of experiencing the same population explosion as the urbanized area, which will ultimately extend these transportation concerns to these portions of the region.



Public Transit

Although the roadway system is becoming critically congested on primary and secondary routes, three entities provide public transit service in the GW Region. These are Fredericksburg Regional Transit (FRED), which provides all local transit service, the Potomac and Rappahannock Transportation Commission (PRTC), which co-manages Virginia Railway Express (VRE) commuter rail service, and VRE, which operates the commuter rail service.

FRED operates 18 local transit routes throughout the region that are designed to provide a basic level of mobility. Five routes operate primarily within the city of Fredericksburg, eight routes operate in Stafford County, and two operate in each of the other three counties (Spotsylvania, Caroline, and King George). FRED also operates two "FRED Express" routes that are designed primarily to serve University of Mary Washington (UMW) students.

The city oversees FRED operations; for routes outside of the city and those that serve the

University of Mary Washington, interlocal agreements with those entities fund the net cost

of service. Although FRED operates all services, the decision-making process for service provision is decentralized. The City of Fredericksburg, through FRED, determines which services are

Map D2: Major Roadways



provided in the city; the counties determine the services provided in their areas, and UMW determines the services that are provided to the university. FRED's ridership numbers are continuing to grow (up 89.6% from 2000 to 2007) as its service expands.

Commuter bus service is provided by three bus operators from the GW Region area to points north and to Dahlgren. These operators, Lee Coaches, Martz, and Quick's Commuter and Charter, provide service from commuter lots in Spotsylvania and Stafford Counties to the Pentagon, Crystal City, Fort Belvoir, Navy Yard, Bailey's Crossroads and Washington, D.C. Lee Coaches provides service to the NSWC Dahlgren.

Potomac and Rappahannock Transportation Commission

The Potomac and Rappahannock Transportation Commission (PRTC), through a partnership with the Northern Virginia Transportation Commission (NVTC), operates Virginia Railway Express (VRE) service between Fredericksburg and Washington, D.C. PRTC also provide express bus service outside of the George Washington Region between Prince William County and Washington, D.C., as well as local flex-route bus service in Prince William County, Manassas and Manassas Park. PRTC is also actively involved in transportation planning, ride-matching, capital project management, policy analysis, and regional coordination outside of the George Washington Region.

PRTC is a transportation district created as authorized by the Virginia "Transportation District Act of 1964." It represents the City of Fredericksburg, Stafford County, Prince William County, Manassas, and Manassas Park. PRTC membership enables VRE service and the ability to levy the 2% sales tax on motor fuels within member jurisdictions. Fredericksburg uses the

sales tax revenues to fund FRED, including the new transit center, for its VRE assessment and for a variety of roadway projects. Stafford County uses its funds for its VRE assessment and roadway projects.

PRTC is governed by a board of 15 commissioners, one of whom is from Fredericksburg, and two of whom are from Stafford County. Prince William County has 6 commissioners; Manassas and Manassas Park each have one commissioner; three are appointed from the General Assembly (one Senator and two Delegates), and one represents the Virginia Department of Rail and Public Transportation (VDRPT). Most of PRTC's board members represent jurisdictions in Washington D.C. Primary Metropolitan Statistical Area, which is where PRTC provides service. While local service in Fredericksburg and Stafford County is provided by FRED, PRTC could also provide service in these areas, if either or both of those jurisdictions chose for PRTC to do so.

Virginia Railway Express

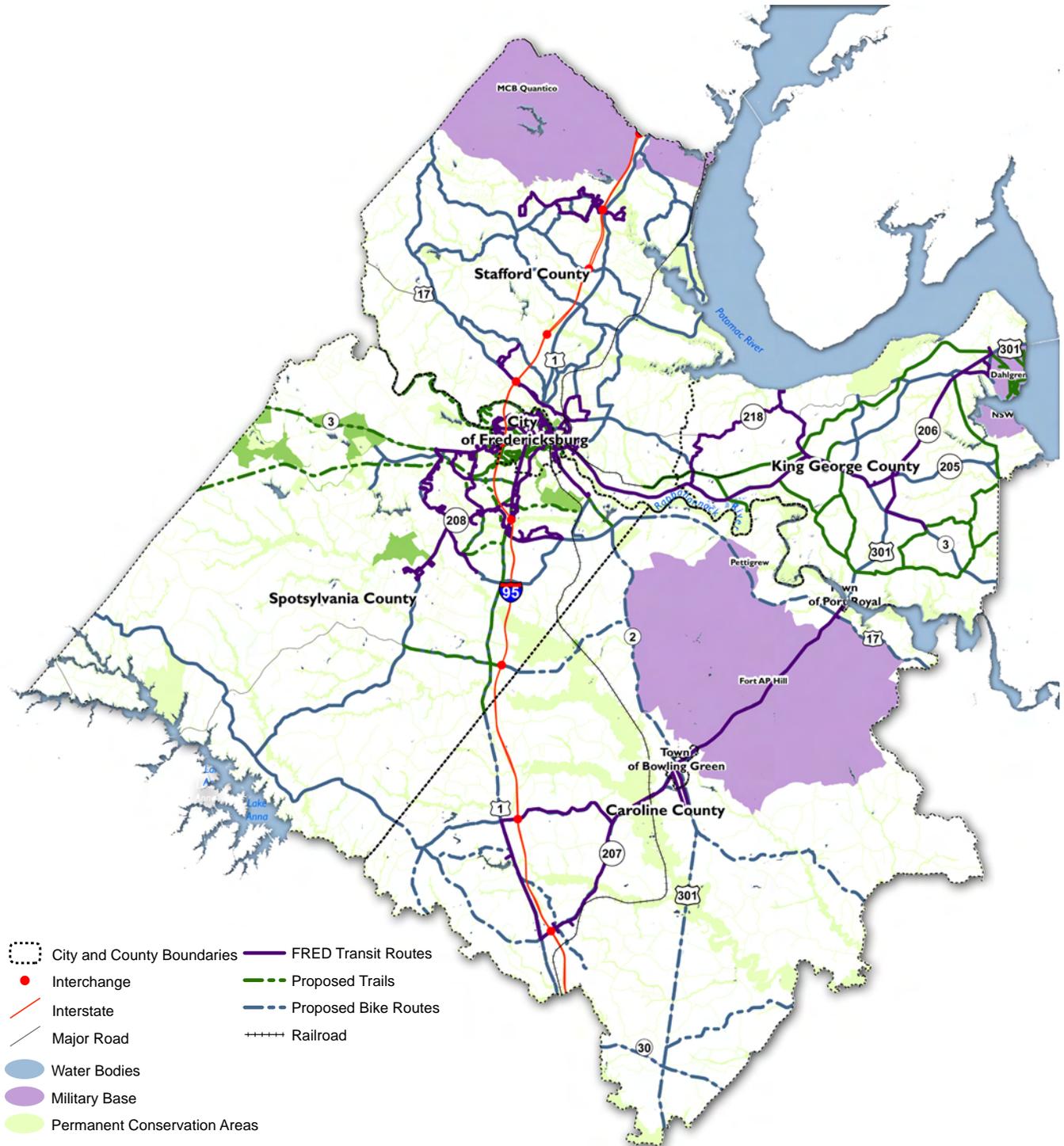
Within the region, the Virginia Railway Express (VRE) operates commuter rail service between Fredericksburg and Washington, D.C. This service is provided through a joint venture of PRTC and the Northern Virginia Transportation Commission (NVTC), and is managed by the two commissions. VRE's Operating Board is comprised of three commissioners who represent PRTC, three who represent NVTD, and one who represents VDRPT. Arlington and Alexandria contribute funding, but are not represented on VRE's board.

Service is provided to three stations in the GW Region: Downtown Fredericksburg, Leeland Road, and Brooke Road (the latter two are located in Stafford County). Fourteen trains per day provide service in the morning and evening with an average of 7,200 riders per-day and 1,816,826 passengers per-year on the Fredericksburg Line

(2007 data). A limited service agreement with AMTRAK increases available VRE capacity and extends operating times by allowing riders using

specific types of VRE tickets to ride selected AMTRAK trains. Another VRE program through Commuter Connections provides a free ride home in the event of a midday emergency or unscheduled overtime.

Map D3: Bike, Ped, Rail, and Bus Routes



Rail

The East Coast mainline rail corridor, running 66 miles through the GW Region, is the primary north-south freight corridor on the East Coast. CSX owns the track and operates approximately 25 to 30 freight trains a day in both directions along this corridor. In addition, AMTRAK operates intercity passenger service with 18 trains per day passing through the GW Region.

Ridesharing

GWRideConnect is the ridesharing agency that serves the Region, and promotes ridesharing and transportation demand management (TDM) techniques to assist persons seeking transportation options to their workplaces and other destinations. The program promotes, plans, and establishes transportation alternatives to improve air quality, reduce congestion, and improve the overall quality of life for the citizens in the region.

The GWRideConnect program assists in the creation of new commuter pools (cars, vans, and buses) and works toward keeping these pools successfully operating. The program also acts as an information clearinghouse for persons interested in the benefits, services and options of mass transportation. GWRideConnect distributes match letters and packets containing information on van, car and bus pools, as well as information on the Virginia Railway Express (VRE), Washington Metro System and telecommuting.

GWRideConnect contracts with the Washington Metropolitan Area Transportation Authority to accept Metrocheks (tax free transit subsidies) from area vanpools. GWRideConnect also subsidizes vanpools through the Van Start and Van Save program. This program allows GWRideConnect to aid vanpools in the crucial start-up period and to assist existing vanpools

that may be in danger of folding.

Bicycle and Pedestrian

Although interest in developing bicycle and pedestrian facilities is increasing, there are limited facilities in the region to accommodate these modes of travel and a dispersed land use pattern that discourages their use. Some recent roadway projects have incorporated bicycle and pedestrian facilities into their design and there are an increasing number of planned residential and commercial developments that are incorporating shared-use trails and sidewalks into their site plans. While these facilities are beneficial to residents of the subdivision or consumers at the commercial development, the trails often end at the physical boundaries of the subdivisions and commercial areas and offer no connectivity to adjoining areas.

Bicycle Facilities

There are approximately 3 miles of on-road bicycle facilities (excluding paved shoulders) and approximately 9 miles of public shared-use paths in the region. These facilities are generally located in the region's urbanized area (City of Fredericksburg, Stafford County and northeastern Spotsylvania County). The rural areas of the region have no dedicated bicycle facilities with





the exception of the Town of Bowling Green, which has sidewalks throughout the town and a dedicated bicycle lane on West Broadus Avenue. “Share the road” signage is located along a small number of roads and the designated bike route on US 1.

Pedestrian Facilities

Pedestrian facilities in the George Washington Region are limited beyond the City of Fredericksburg which has a complete network of sidewalks. Sidewalks in the remainder of the urbanized area are scattered in various neighborhoods and are not continuous. Northern Stafford County (Garrisonville Road area) and Southern Stafford County (Chatham Heights) have small sidewalk networks. Areas of Spotsylvania County (Leavells Road), the Courthouse area of King George and the Town of Bowling Green in Caroline County also have sidewalks.

Nature Trails

There are numerous nature trails in the region that serve recreational purposes. These facilities are found in municipal and state parks (e.g., Lake

Anna State Park and Caledon Natural Area). There are approximately 105 miles of recreational trails in state and local parks in the region. Additionally, there is emerging local interest in localized nature trails, such as those under development by the Spotsylvania Greenway Initiative.

Virginia Central Railway Trail

The Virginia Central Railway Corridor is an abandoned railway from the Civil War era that runs from downtown Fredericksburg to the Town of Orange in Orange County. The Virginia Central rail bed marked the left flank of the Union Troops’ line of attack from the City of Fredericksburg to the Sunken Road. The railway was a significant feature in the battle in 1862 and again in 1863 at the Union assault on Marye’s Heights. The rail line also traverses the Chancellorsville and Wilderness Battlefields.

This corridor has great potential to serve as a primary “trunk line” that would connect numerous residential areas, schools, commercial destinations, and historic and cultural resources in Spotsylvania County with Downtown Fredericksburg. A shared use path runs along 1.4 miles of this corridor between Smith Station and Harrison Road in Spotsylvania County. Although the connectivity of the trail is threatened by residential development in Spotsylvania County, the City of Fredericksburg has begun efforts to develop the segment of the VCR corridor that lies within the City into a shared-use trail.

Air Travel

There are two airports located in the GW Region that provide general aviation service. The Stafford Regional Airport is located west of I-95 near the Centreport Parkway Interchange (Exit #136) and the Shannon Airport, located on Route 2, in Spotsylvania County, just south of the City of Fredericksburg. No commercial airline service

is provided within the Region, resulting in a local dependency on commercial airports in the Washington DC-Baltimore CMSA and Richmond PMSA to the north and south of the Region.

The Stafford Regional Airport Authority operates the Stafford Regional Airport. The Airport has a 5,000-foot by 100-foot runway with parallel taxiways, Jet-A and Av-Gas fuel storage facilities and 25 acres of paved aircraft parking aprons.

The 550-acre facility can accommodate 75,000 annual operations and 100 based aircraft, including corporate business jets, with gross weights up to 70,000 pounds and wing spans up to 80 feet.

An additional 25 acres of rough-graded finished lots are available for lease development of individual, corporate and T-hangar aircraft storage buildings and other aviation related business



facilities.

The ultimate build-out of the Stafford Regional Airport includes a contemporary comfortable terminal building, full precision instrument approach capabilities and the expansion of all aviation support facilities.

The Shannon Airport has two runways, a grass runway 1,500 feet long and 3,000 foot by 100 foot paved runway. Both jet and conventional fuel is sold with pilot controlled lighting provided. Shannon Airport is designed to accommodate aircraft weighing up to 12,500 pounds.

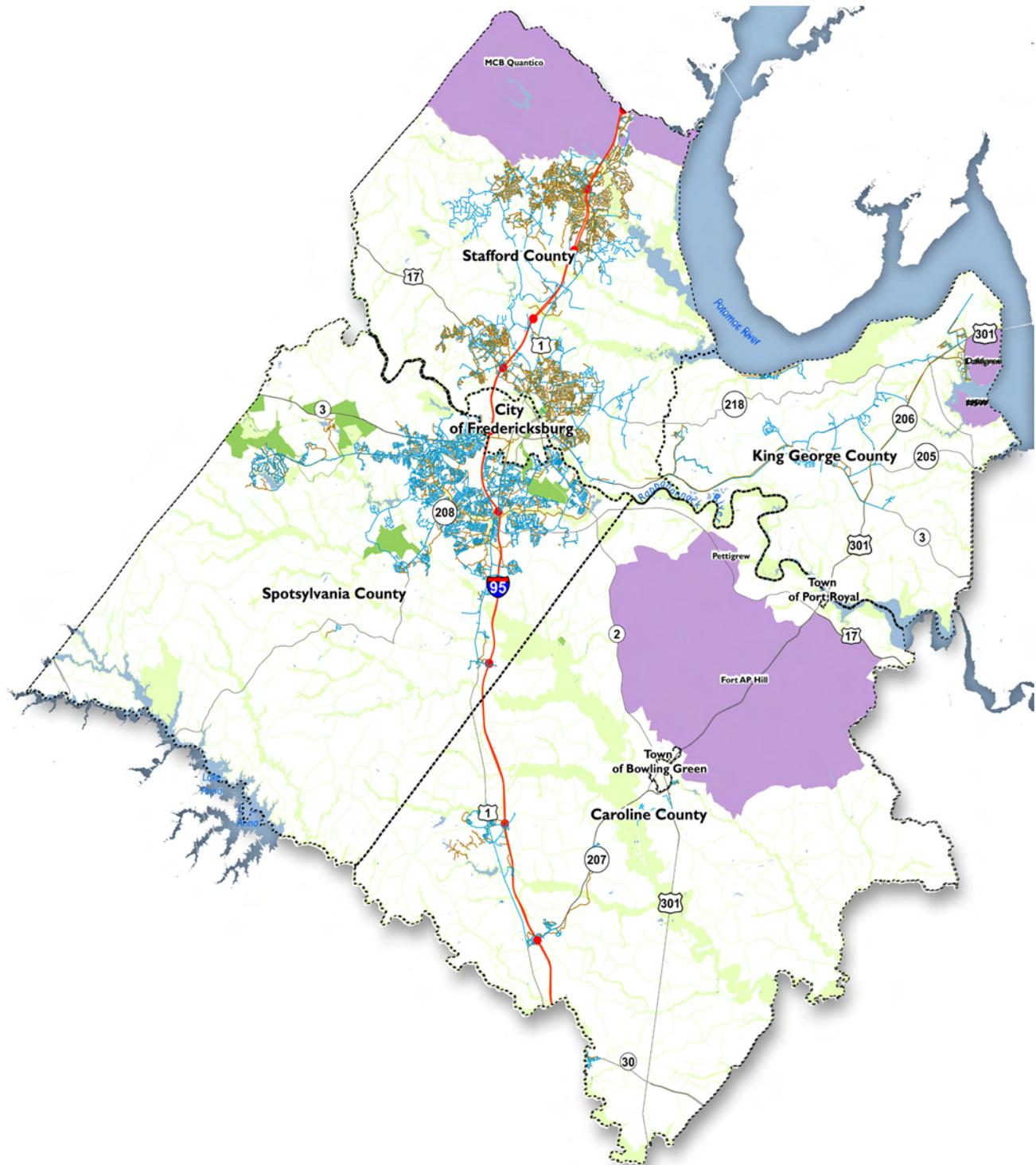
Water Service

Water service in the region is provided by five public utilities, including two separate operating units in Caroline County. Spotsylvania County provides water to the City of Fredericksburg. Although each utility system can provide water to existing development, the capacity of these systems will be strained if population continues to grow. Water pollution and groundwater depletion is of unique concern to King George County due to its dependency on ground water aquifers for public water supply. Each County's distribution system intends to keep residents supplied with an adequate amount of potable water; however, each utility also acknowledges that there are limits to facility and capacity expansion that must be recognized as future development occurs. Each County's water distribution system is examined in more detail in Section E: Community Assessments.

Wastewater Service

Wastewater service in the region is provided by a combination of public water treatment plants and private septic systems. Caroline County operates the Upper Polecat Creek Regional Wastewater treatment plant; King George County Service

Map D4: Public Water and Sewer Service Lines



Authority provides public sewage service to a portion of the county; Spotsylvania County also operates three wastewater treatment plants; and Stafford County operates two wastewater treatment facilities. Although public treatment

plants are sufficient to meet residential demand for sewer, expansions and improvements are planned in many of the jurisdictions to accommodate expected population growth. Septic systems and expansions of public systems

are limited by environmental constraints and should be considered when locating new growth. Each County's wastewater treatment system is examined in more detail in Section E: Community Assessments.

Historic & Cultural Sites

The George Washington Region's historic significance spans from Pre-Colonial America through the formation of the United States to the turmoil of the Civil War to today's emerging urban environment. Preserving and protecting the invaluable historic resources that are found here is essential for future generations. There are approximately 100 entries (i.e., structures, historic districts and sites) on the National Register of Historic Places found in the GW Region that range from the Colonial Era through the early 20th Century.

Many of the Region's historic resources -- Ferry Farm (George Washington's boyhood home), the City of Fredericksburg's Downtown Historic District, Belmont, and the Fredericksburg and Spotsylvania National Military Park -- are tourist destinations that draw hundreds of thousands of visitors a year and contribute greatly to the local economy.

The Fredericksburg & Spotsylvania National Military Park was established on February 14, 1927 and encompasses 8,374 acres. It includes a number of sites in the City of Fredericksburg, Caroline, Spotsylvania and Stafford Counties. It is the Region's largest historical resource and has the greatest economic contribution. The park encompasses four major Civil War Battlefields: Fredericksburg, Chancellorsville, the Wilderness and Spotsylvania Courthouse as well as Chatham Manor, Salem Church, Ellwood and Guinea Station (where Stonewall Jackson died). The NPS sites are comprised of battlefield parks, wayside exhibits, exhibit shelters, interpretive trails, and numerous historic buildings that help to tell the story of the Civil War Battles.

Battlefields are landscapes that convey the sense and sweep of historic battles through preservation of topography, traditional land use, and archaeological resources. In the George Washington Region, there are seven historic Civil War battlefields: Aquia Creek, Fredericksburg I, Chancellorsville, Salem Church, Fredericksburg II, Wilderness, and Spotsylvania Court House. These battlefields honor the lives that were lost in the deadliest war in American history and symbolize the end of slavery and the reuniting of the nation.

Portions of the battlefields are permanently



protected by governments or private non-profit organizations; however, the remaining land is at risk for being lost to new development. Areas of each battlefield's landscape in the designated battlefield core area (i.e., historical boundary of where the most intense fighting took place) or the potential National Register boundary area (i.e, where the battlefield landscape remains intact and worthy of preservation) were deemed special conditions for Your Vision, Our Future.





Section E:
■ Community Assessments

Regional Scan Document

Section E - Community Assessments

The political jurisdictions included in this study are Caroline County, the Town of Bowling Green, the Town of Port Royal, City of Fredericksburg, King George County, Spotsylvania County, and Stafford County. Each of these jurisdictions has unique features that help combine to give the region a distinct feel. For each community, the assessment includes a description of:

- the community character,
- development compatibility,
- economic vitality,
- local plans, programs, and policies,
- public services and infrastructure, and
- emerging trends.

After a close individual examination, collective trends relevant to the regional planning study were identified. These trends and values will be used as talking points during the citizen workshops held as part of this study. Preservation of rural and agricultural areas without compromising future growth is a priority for all jurisdictions, as are protecting environmental resources and enhancing the quality-of-life for residents.

Caroline County

Caroline County was established in 1728 and named for Caroline, the wife of King George II of Great Britain. It is bounded on the north by the Rappahannock River and Counties of King George and Stafford, on the east by King and Queen and



Essex counties, on the south by King William and Hanover counties and the North Anna and Pamunkey Rivers, and Spotsylvania County to the west. The total land area is approximately 539 square miles. I-95, US-1, and US-301 are key transportation corridors for interregional travel. There are two incorporated towns in the county: the Town of Bowling Green and the Town of Port Royal. Both towns will be discussed later in the chapter. The County’s economy is tied to its abundance of natural resources. The County is characterized by its pristine rural character and quality of life.



Development Compatibility

Development regulations within the County are intended to preserve the rural character of Caroline. These regulations include pursuing well-financed business and industrial prospects in order to help finance appropriate infrastructure expansion and improvements. Particular emphasis has been put on attracting new industrial projects to help levy private funds for

infrastructure. In addition I-95 traffic generates up to 100,000 temporary residents on any given day. Strategic tourism investment and direct marketing to retail and commercial developers can help encourage this temporary population to spend more money in Caroline County. Other policies include encouraging transit-oriented-development (TOD) in areas where the advantages of rail, geographic location, land availability, and road access combine to make this a viable concept.

These development policies encourage smart investment in County infrastructure while encouraging private investment and clustering of new development.

Economic Vitality

Economic development is critical to the prosperity and quality of life for the citizens of Caroline. The creation and retention of jobs and financial investment in the County generates the revenues necessary to pay for services required, but not paid for, by residential development.

Economic development in Caroline is unique in the region because it is removed from an urban center. Development patterns taken for granted in other communities cannot be duplicated in the County. This phenomenon requires the community to act independently and without the benefits and impacts of urbanized industrial/office development and retail sprawl.

Comprehensive Plan

The adopted Caroline County Comprehensive Plan is available for public review on the County website. Key components of the plan address natural resources, open space, and development. Although the county has avoided the excess growth that has been prevalent along the I-95 corridor between Richmond and Washington, DC, it still anticipates growth in the future. In a preemptive attempt to negate suburban sprawl, the County is and has been practicing “smart growth.”

The County has created three “Primary Growth Areas”: Bowling Green, Carmel Church, and Ladysmith. The County has also created six “Secondary Growth Areas”: Chilesburg, Dawn, Guinea, Port Royal, Sparta, and Woodford. Remaining portions of the County are designated as “Rural Residential” or “Open Space, Agriculture.”

In addition to directing new development to the primary and secondary growth areas, the County’s comprehensive plan also discusses the land use-transportation connection. New development is encouraged to be both dense and near existing transportation facilities such as road, rail, and bicycle and pedestrian networks. Limiting growth to smaller and denser tracts of land will also help to promote the preservation of thousands of acres.



The County's comprehensive plan lays out a strategy to help protect over 90% of its land. This land includes 315,000 acres of prime agricultural land, forests, and wetlands. It also protects steep slopes, unsuitable soils, and floodplains. Fisheries, water resources, and air quality are also areas of concern for the County in developing its environmental protection strategy. Limiting the amount of development near these natural features is of critical concern for the future.

Public Services and Infrastructure

Impacts of new development on community facilities are also addressed in the draft Comprehensive Plan. Many of the County's schools, libraries, and government offices are overburdened and require expansion, replacement, relocation, or improvements.

The County's public services have been used at capacity and to compensate for the increase in the number of new residents, these services must be improved and expanded.

Caroline County owns and operates two water distribution systems, the Caroline Utility System and the Milford Sanitary District. The Caroline Utility System has two separate operating units. The Carmel Church-Ladysmith system serves the western portion of the County along US Route 1 between the VA Route 207 and 639 interchanges with I-95. The system primarily serves commercial and industrial development, but has experienced an increase in residential connections this decade. The system is served by five wells producing 475 gallons per minute (gpm) and 684,000 gallons per day (gpd). Three storage tanks provide 900,000 gallons of storage capacity and fire flow.

A second system is located near the intersection of Rogers-Clark Boulevard (VA Route 207) and Devils Three Jump Road (VA Route 676). It serves

the Caroline Middle School, Caroline High School, vehicle maintenance facility, Animal Shelter and Caroline Regional Park. Two deep wells totaling 100 gpm provide source water, while a 200,000 gallon elevated storage tank provides storage capacity and fire flow.

The Milford Sanitary District, independent of the County system, is operated and maintained by County personnel. The system serves the Milford community, including the Milford Industrial Park. Two deep wells totaling 135 gpm provide source water, while a 100,000 gallon elevated storage tank provides capacity and limited fire flow capabilities.

The County operates the Upper Polecat Creek Facility Regional Wastewater Treatment Plant. The plant serves the western portion of the County, namely Ladysmith and Carmel Church.

The plant was originally constructed in 1989 and upgraded in 1995 with an additional sludge digestion tank. It was upgraded again in 2002, with the addition of sewage receiving facilities, solids handling and tertiary filtration. The plant discharges into Polecat Creek, which is located in the York River watershed of the Chesapeake Bay. The County has established clear growth boundaries for public utility extensions and connections. Long-term improvements include completion of the plant expansion and construction of a 1.5 mgd public wastewater system to serve the Haymount project, should it ever be developed.

Emerging Trends

The comprehensive plan, although memorialized in a document, is part of an ongoing County planning and visioning process, first started with the adoption of a county Vision Statement in 1994. Critical to the success of Caroline County is protection of its vast and pristine natural



resources with targeted development strategies that can help finance the overburdened public services and infrastructure. These trends will be critical as the County moves forward.

Town of Port Royal

Port Royal, settled in 1652 and incorporated in 1744, is one of the area's most historic towns. It is located on the northeastern edge of Caroline County along the Rappahannock River. The total land area is 0.1 square miles and U.S. Route 17 and U.S. Route 301 have their crossroads in Port Royal.

Development Compatibility

Development regulations within the Town are intended to preserve its rural scenic beauty and embrace its heritage. These regulations include

the use of architectural standards and improved site design and the preservation of the natural environment and views of the Rappahannock River. Particular emphasis has been placed on addressing the appearance of the gateways of the community, managing growth through Traditional Neighborhood Districts (TNDs), and promoting economic development opportunities.

Because of the Town's proximity to Fort A.P. Hill, it has agreed to participate in the Compatible Land Use Study funded by the US Department of Defense. The Town is affected by noise, traffic, and vibrations associated with military activity occurring on Fort AP Hill as part of the BRAC.

Economic Vitality

Port Royal is faced with the challenge of managing anticipated future growth (due to the Town's proximity to Fredericksburg and Northern Virginia) while retaining the community's rural character and quality-of-life. Economic development factors being focused on by Port Royal include education level of the workforce, availability of infrastructure, road network, and site selection. Recent economic development activity involves the revitalization of older structures for commercial uses.

Comprehensive Plan

The adopted Port Royal Comprehensive Plan is available in Appendix E of the Caroline County Comprehensive Plan. The plan addresses goals for land use, public facilities, economic development, environmental resources, and transportation, and offers five, seven, and ten year action strategies for implementing these goals. Port Royal is updating their Comprehensive Plan to focus on several critical issues; most importantly they are developing an annexation strategy. The Town wants to expand to the west to create new development areas that can accommodate small

conservation subdivisions and neighborhood commercial centers. These areas would be located west of Route 301, away from the historic town center and would generate a tax base which would enable the Town to reinvest in its historic area and preserve riparian RPA areas and viewsheds along the Rappahannock.

Public Services and Infrastructure

Like the County, many of Port Royal’s public facilities including fire and rescue stations, the sheriff’s substation, and park and recreational facilities, are overburdened and require expansion, replacement, relocation, or improvements.

Water service is provided via a deep well and a single elevated water storage tank. Sewer disposal is accomplished with individual septic systems; however, a decentralized sewage disposal system pilot program is currently being evaluated in the Dawn Community. Port Royal’s only community revenue is derived from the sale of potable water from the Town’s well and storage tank.

Emerging Trends

As the Town continues to evolve, it is looking to protect its historic center while expanding economic development opportunities. Tourism-



related businesses, preservation of riparian areas, protection of viewsheds along the Rappahannock, and reinvestment in the historic center are all important elements of the community’s vision.

Town of Bowling Green

Bowling Green, the historic center of Caroline County and the County seat, was incorporated in 1837. The total land area is 1.6 square miles. Major transportation routes running through town include State Route 2, State Route 207, and U.S. Route 1.

Development Compatibility

Development regulations within the Town are intended to preserve an attractive visual appearance, preserve, maintain, and promote to the Town’s natural and historic resources, manage growth and development, provide a comprehensive multi-modal transportation system, and support balanced, appropriate economic development. These regulations include requiring buffers as transitions between land use, maintaining sign controls, maintaining open space areas around growth areas, expanding public transportation improvements, and promoting the town as the commercial center for the area.

The Town has also agreed to participate in the Compatible Land Use study with Fort AP Hill funded by the US Department of Defense.

Economic Vitality

The town completed an economic study in 2004 that provided a number of recommendations on ways to position the Town to improve development potential for new opportunities and to reinvigorate downtown. The recommendations centered around three areas: Central Business

District activities, building a business awareness, and retention/recruitment tactics.

Comprehensive Plan

The Bowling Green Comprehensive Plan was adopted in 2008. It describes the Town's vision which is to be government centric, business friendly, a nice place to live, educationally strong, and sustainable. The plan estimates that water and sewer service will be adequate to meet population growth through 2030.

Public Services and Infrastructure

Bowling Green provides fire, rescue, and law enforcement with supplemental service provided by the County. The Town of Bowling Green operates separate utility systems from the County. Bowling Green is actively working with property owners outside of the Town boundary, including AP Hill, to extend water service.

The Town obtains water from three drilled wells and stores it in water tanks with a total capacity of 360,000 gallons. In 2008, an estimated 100,000 gallons per day, or 46% of the capacity was required on a daily basis.

The Town's wastewater treatment plant meets all State and federal regulations and is designed

to treat an average daily flow of 0.25 million gallons per day and a peak flow of 0.75 mgpd. As of January 2008, the plant treated 95,000 gallons per day, or 0.095 mgpd. The system serves the majority of residential and commercial properties in the Town and a small number of out-of-town properties.

Emerging Trends

Downtown revitalization, and rehabilitation of single family structures in historic Bowling Green are important considerations as the Town moves forward implementing the 2030 vision set forth in the Comprehensive plan. Investments in historic properties will enable the Town to promote tourism and related economic development. In addition to these improvements to the built environment, the Town continues to prioritize long-range planning for environmental protection. The town is located in the Chesapeake Bay Drainage Area and it has a Chesapeake Bay Preservation Ordinance which ensures water quality protection. The land use map was designed to help promote economic development, historic preservation, and water quality protection by providing a mix of residential, commercial, and industrial land located in appropriate areas.



City of Fredericksburg

The City of Fredericksburg was incorporated as a town in 1781 and named for Frederick, Prince of Wales, son of King George II of Great Britain. Fredericksburg received its charter as an independent city in 1879. The City covers slightly over 10 square miles and is located approximately 50 miles south of Washington, D.C. and 50 miles north of Richmond, Virginia. The City is characterized by its rich history-- the built environment spans nearly three centuries of construction.

By the American Revolution, Fredericksburg had grown into a prominent trade center along the Rappahannock River. During the Revolutionary War, Fredericksburg provided both material support through the iron works and physical support by providing the majority of the foot soldiers for Virginia Line's 2nd and 3rd Regiments. In December 1862, Fredericksburg was the site of a Civil War battle. In 1908, the State Normal School for Women at Fredericksburg was established which later became the University of Mary Washington. The growth of the federal government in the post-war era has resulted in a profound impact on the economy of Fredericksburg.



The City currently serves as a regional center for higher education, medical care, and retail services. The economy is based on Central Park as a regional retail hub, two major institutions--UMW and Medicorps Health System, historic/cultural based tourism, and economic activity related to Washington, D.C.

Development Compatibility

The City's current land use patterns have resulted primarily from its transportation links, first along the Rappahannock River and then along major roadways. The University of Mary Washington (UMW) and Mary Washington Hospital have also influenced growth. The presence of this hospital helped establish the City as a regional health center in the early 1900s and stimulated employment in related professional operations. Both UMW and the Hospital continue to play major roles in the City's overall growth and development. Construction of Interstate 95 in the 1960s linked the City with the Northern Virginia-Washington, D.C. area, but drew commercial activity and housing development away from downtown Fredericksburg.

The City annexed approximately 4.4 square miles from Spotsylvania County. Portions of this annexed area include commercial development in the State Route 3 corridor and the strongest new development is occurring at the intersection of Route 3 and I-95.

Economic Vitality

Due to its location on the southern edge of the Washington D.C. Primary Metropolitan Statistical Area (PMSA), the City exhibits economic characteristics more closely associated with urban areas. This PMSA is the 7th largest in the United States and has a median income of \$76,248 and a median housing value of \$344,091.

These statistics are higher than the values reported for the City which has a median household income of \$45,815 (2008 ACS) and a median housing value of \$262,663. The City's local economy is affected by the larger metropolitan economy which influences local housing values, wages, and cost of living.

The City's location on the outskirts of the Washington DC PMSA provides relief from the high cost of living experienced in the more urban counties such as Arlington, Fairfax, and Alexandria. Within the city, the median housing value is \$247,648. Office and retail rents are also lower on average than rents in Northern Virginia. The disparities between Fredericksburg's and Northern Virginia's cost of living and cost of doing business represent competitive advantages that Fredericksburg can leverage to capture employment and population growth experienced in the region.



Comprehensive Plan

Unlike its more suburban and rural neighbors, the City does not have the same issues with sprawl, given its relatively compact total land area. However, over the past 70 years the population has more than doubled and current projections forecast further growth in the City's population from 20,500 people to 22,500 by 2030. In order to accommodate new growth while preserving existing open space and community facilities, city planners have designated corridors of development. These corridors are intended to encourage reuse of existing structures and establishment of high density mixed-use zones. Growth corridors located throughout the city include the riverfront, Sophia Street, Lafayette Boulevard, Princess Anne Street, William Street, Downtown Commercial District, Jefferson Davis Highway, Blue and Gray Parkway, Fall Hill Avenue, Cowan Boulevard and Dixon Street.

Fredericksburg's Land Use Plan has been an important policy document for the City, reflecting community values, which call for a seamless blend of existing land use patterns and goals for future land use. Future land use patterns, site designs, street layouts and design, landscaping, and building designs all need to be incorporated with attention to the existing fabric of this community. From the broad decisions about where to allow new commercial areas to the window details of a small home improvement in a historic district, development and redevelopment decisions need to reflect and expand upon the existing form of this historic and unique community. Integrating new development with historic buildings will ensure continued economic vitality and the general welfare of the community.

Land use policies have not changed since the 1999 adoption of the City's Comprehensive Plan. However, the land use map was updated in 2007 to include seven general land use categories

and 14 land use classifications within those categories. This land use plan also acknowledges the impact of development in Stafford County as it relates to the City's transportation system and community character.

The City's comprehensive plan also emphasizes protection of natural resources. Although small in area, the City encompasses a wide variety of natural features, including white water rapids on the Rappahannock and pre-Cambrian rock exposures along the fall line. These areas act as wildlife habitats for a variety of animals and natural ecosystems. In order to preserve these environmental treasures as both a natural habitat and a location for recreational activities the city has established several environmental protection policies.

Preservation of the Rappahannock River water supply watershed is a priority for the City. In order to preserve and protect this water resource, regulations are being developed and implemented to control flood discharges, sources of pollution and reduce stream bank sedimentation and erosion. Additional policies include the protection of riparian flood plains, an increase in the city's tree protection provisions, decreasing storm water runoff, avoidance of road development through environmentally sensitive



areas, and increase in replanting of indigenous vegetation.

These environmental protection strategies have been integrated with development approaches to create a smart growth development policy. Such a policy is also intended to address the overburdened community facilities and public services within the City.

Public Services & Infrastructure

The City of Fredericksburg is served by Spotsylvania County's water distribution system and wastewater treatment facilities and has an emergency water supply agreement with Stafford County as well.

Emerging Trends

The Comprehensive Plan is a living document, and as such, continual evaluation and update of the plan will continue into the future. Critical to maintaining progress is developing ways of monitoring new initiatives and measuring success against goals. Initiatives such as an update to the system used to identify street priorities, and implementation of "complete streets" will be important in achieving such goals. In addition, there is a renewed emphasis on planning for the

future of the City's downtown which is critical to the economic health and well-being of the entire city. It serves as the City's economic engine and acts as a symbolic heart for the City. The bulk of the redevelopment corridors are located in downtown and the City plans to continue the historical trend of mixed-use development throughout its neighborhoods and development corridors. These trends promote smart growth development in the historically urban downtown.

King George County

King George County was established in 1720 and named for King George I of Great Britain. It obtained its present day boundaries during 1776 and consists of 185 square miles of land area. The County is bordered on the north by the Potomac River and the Rappahannock River to the south, on the east by Westmoreland County and on the west by Stafford County. The County was historically home to large tobacco plantations along the Potomac and Rappahannock Rivers. The County retains much of its historic rural character, but the economy has transitioned from an agricultural one to one driven by Federal Government employment, including the Naval Surface Warfare Center at Dahlgren (NSWC Dahlgren).

Development Compatibility

Development in King George has typically occurred in a linear pattern along major roadways. Currently the greatest concentration of residential development is located in the Courthouse area, NSWC Dahlgren, the western edge of the County in Oakland Park, and portions of the State Route 206 and Route 3 corridors. Scattered residential subdivisions with well and septic service also exist, many located north of Route 3. Commercial development is also located at the intersection of Route 218 and US 301



intersection near Dahlgren, the Courthouse area, and other scattered sites along US 301 to the south of NSWC Dahlgren.

Economic Vitality

The major employer in the County is NSWC Dahlgren. Various contractors with the Federal Government also comprise a large proportion of the employment base of King George County. Recently, the unemployment rate in King George County has been one of the lowest among the communities in the area. Since 1994, unemployment in the County has consistently been lower than the unemployment rate for the State as a whole. Unemployment has risen slightly each year since 2001.

Even though unemployment has risen slightly, between the years of 1996 and 2002, the number of jobs increased by nearly 17%. While employment fluctuates annually, the increase is consistent. Although the federal government continues to employ the majority of the workforce in King George, the service industry also increased in the same time period.

Comprehensive Plan

Like other counties in the region, King George strives to preserve its rural characteristics. As part of this effort, and in anticipation of continued population growth, the County is establishing planning regulations and goals that include “smart growth” policies. This approach includes defining planning areas to limit future development to specific locations within the County. In addition to limiting growth by establishing planning areas, the County also plans on curbing sprawl by encouraging public facility development in designated areas and limiting their development in others.

By defining “primary settlement areas” within the County, the comprehensive plan is guiding growth towards areas that are historically developed and are served by the county’s public utilities systems. Included in the “primary settlement areas” are the Courthouse, Dahlgren, Fairview Beach, Hopyard, Oakland Park, Cleydael and Route 3 West. Development within these areas should be traditional and compact with connected areas and pedestrian-oriented local streets. In addition to these areas, the comprehensive plan also designates “rural development areas.” These areas of the county are those that are largely agricultural and forested, with dispersed residential and business uses. These locations should remain rural with very low-density residential development.



In addition to specifying growth areas, the County will also implement land development regulations that protect critical environmental systems. These include setbacks and buffers from water bodies, clustering of rural residential development, use of best management practices, and concentrating most new development into established areas away from the most sensitive and pristine natural systems.

Limiting growth and development to areas where infrastructure already exists or is planned for in the immediate future helps concentrate new development. Taking advantage of existing and planned transportation networks will also enable the county to develop in a clustered and connected fashion.

Public Services & Infrastructure

King George County relies solely on groundwater, which is vulnerable to pollution and depletion. Erosion, failing septic tanks, underground storage tanks, excessive pumping, and pesticide and fertilizer runoff are just some of the hazards to groundwater quality. Groundwater pollution or depletion would force the County to rely on other sources for water supply. The presence of a large private regional landfill operated by Waste Management, Inc. necessitates vigilant monitoring of ground water quality in wells around the landfill site to ensure that the landfill's leachate recovery and treatment system continues to protect the ground water resource.

The King George County Service Authority (KGCSA) provides public water service to certain areas of King George County. Areas not served by KGCSA rely on private wells. Although groundwater supply is currently adequate, the groundwater quality and quantity must continue to be monitored to ensure it meets the long-term water supply needs of the County.

Wells constructed in King George County rely on aquifers located in the Fall Zone. These aquifers are relatively thin and shallow compared to the Coastal Plain aquifers to the east. The majority of wells in King George County are located in either the shallow unconfined aquifer, the Aquia Aquifer, the Middle Potomac Aquifer or the Lower Potomac Aquifer. The unconfined aquifer is not desirable for public water supply due to low well yields. This shallow aquifer is also the most susceptible to contamination because of its proximity to the ground surface.

Dependable but low yielding wells can be developed in the Aquia Aquifer. Wells constructed in this aquifer are suitable for the individual residences, but typically cannot support water supply demands for residential subdivisions.

The Middle Potomac Aquifer is a reliable source of groundwater, although iron and manganese may be elevated locally. Aquifer thickness and hydraulic conductivity of the aquifer can preclude development of high yielding wells or well fields.

The greatest potential for higher yielding wells is expected in the eastern portion of the County where the aquifer thickness increases. In order to maximize potential yields, wells should fully penetrate the aquifer and multiple screened intervals utilized in order to develop all water-bearing strata.

The Lower Potomac Aquifer is likewise, a reliable source of groundwater. Elevated iron and manganese may be encountered locally and fluoride concentrations are likely to increase in deep wells constructed in the eastern portion of the County. This aquifer has a high yield of potential. Well yields are expected to be the highest in the eastern portion of the County where the aquifer is the thickest.

The County does not have one centralized public system that serves all of the KGCSA customers. The KGCSA is currently operating 11 separate systems that serve over 3,000 customers. These systems serve the areas of Fairview Beach, Potomac Landing, Dahlgren, Presidential Lakes, Owens, Saint Paul's, Peppermill Estates, Courthouse/Arnold's Corner/Purkins Corner, Oakland Park, Ninde's Store, Circle, and Canterbury. Another water system is currently under construction to provide service to the Hopyard Farms development.

KGCSA also provides public sewage service to certain areas of King George County. Because soil limitations and a high water table make septic systems impracticable in the defined growth areas of the County, public sanitary sewer systems are the preferred method of wastewater treatment. KGCSA transports wastewater to one of its wastewater treatment plants at Dahlgren, Fairview Beach, Oakland Park, Presidential Village, or Purkins Corner. Beyond these package plants, the KGCSA does not operate a regional treatment plant.

In addition to these existing facilities, the Hopyard Farms wastewater treatment plant has been approved for construction. It has a planned capacity of 1 mgd.



The KGCSA is responsible for maintenance and repair of its facilities. For new developments, the developer is required to extend water service, and/or install new wells, treatment facilities and storage tanks as needed, and dedicate the systems to the KGCSA for operation and maintenance.

Emerging Trends

Given King George's location in the Greater Fredericksburg area, and the complex infrastructure networks that link it to its neighbors, there will be a growing need for close coordination of planning policy with neighboring jurisdictions during the life of this plan. By continuing to pursue smart growth strategies, the County will encourage growth while preserving rural areas. In addition, there is a renewed emphasis on coordinating with partners in the region on long-term planning efforts.

Spotsylvania County

Spotsylvania County was established in 1721 and named for Lieutenant Governor of Virginia Alexander Spotswood. The county is 407 square miles and is bounded on the north by the Rappahannock and Rapidan Rivers and the City of Fredericksburg, Counties of Stafford and Culpeper, on the south by the North Anna River, and Lake Anna and the Counties Hanover and Louisa, on the west by Orange County, and on the east by Caroline County. During the colonial era, the tobacco industry thrived.

The County's agricultural past is still evident in the present day economy. Between December 1862 and May 1864, four major Civil War battles were fought in Spotsylvania National Military Park: Fredericksburg, Chancellorsville, the Wilderness, and Spotsylvania Court House. Post World War II development has been the result

of Spotsylvania's proximity to Richmond and Washington D.C. The county established primary settlement and transition areas close to I-95 and the City of Fredericksburg, leaving the majority of the county rural in character.

Development Compatibility

The County designated settlement areas in their 1980, 1987, 1994, and 2000 Comprehensive Plans (also referred to as planning districts or development districts). These settlement areas contribute to an overall community development management policy which maximizes the use of existing public facility investments, including roads, utilities, and educational facilities. Like the other counties in the region, emphasis is placed on preserving the rural character of the County, which allowing development that helps pay for new or expanded infrastructure in appropriate locations.

The planning districts include the Jackson Gateway Development District, the Rural Development District, the Agricultural/Forestral District, the Lake Anna District, the Courthouse District, and the proposed Urban Development Areas (UDAs). Each of these districts has a specific character and intent. Together the designation of these districts attempts to promote smart growth strategy while clustering new development in appropriate locations.

The 2008 Comprehensive Plan expanded upon the concept of Settlement Areas by analyzing existing land use, transportation, environmental features, the economy, and consideration of the goals derived from the District Working Group Sector Plans. Additionally, the 2008 Comprehensive Plan introduced the County's first Future Land Use Map (FLUM). The Future Land Use Categories that comprise the FLUM provide details on densities and intensities that were previously absent from the Comprehensive Plan.

Land Use categories include: Recreation and Open Land, Agricultural and Forestal, Ag/Forestral Residential, Rural Residential, Low Density Residential, High Density Residential, Mixed Land Use, Commercial, and Employment Center. According to the FLUM, the southern and western portions of the County are intended to remain rural in nature over the next 20 years, with a focus on preservation of agriculture and open space. The majority of growth is anticipated in the northern and eastern portions of the County and includes a mix of residential densities, commercial corridors, employment centers, and mixed use areas. The designation of mixed use areas is new to the County and affords the opportunity for a variety of land uses and intensities within a single development site.

The proposed UDAs are expected to absorb the majority of the County's population growth during the next 20 years. Many of these areas have been designated for mixed-use on the FLUM. The availability of public water and sewer and the planned development and improvement of major roads in these areas will minimize the most significant constraints to development. The southern and western portions of the County are intended to remain rural in nature over the next 20 years, with a focus on preservation of agriculture and open space.



Economic Vitality

It is vital to Spotsylvania County to promote balanced economic development. Over the past fifteen years, Spotsylvania County has been successful in attracting both commerce and industry. The County's central location attracts distribution centers, such as the 500,000 square foot facility operated by CVS. Manufacturing firms have also found the County's location convenient for receiving raw materials and shipping finished goods. The County is largely considered a "pro-business" environment where industries choosing to locate do not face undue delays or excessive restrictions. The Office of Economic Development has the primary responsibility for recruiting industrial, commercial, and office complex prospects. This agency also consolidates the efforts of the Economic Development Authority while participating in regional economic development recruitment activities.

The Jackson Gateway Development plan was adopted in May 2006. This plan includes the corridor of US-1 and I-95, between Massaponax and Church Road (Rt. 608) and Morris/Mudd Tavern Road (Rt. 606). The plan provides a brief summation of the County's current economic development needs and how they related to the potential of the Jackson Gateway.

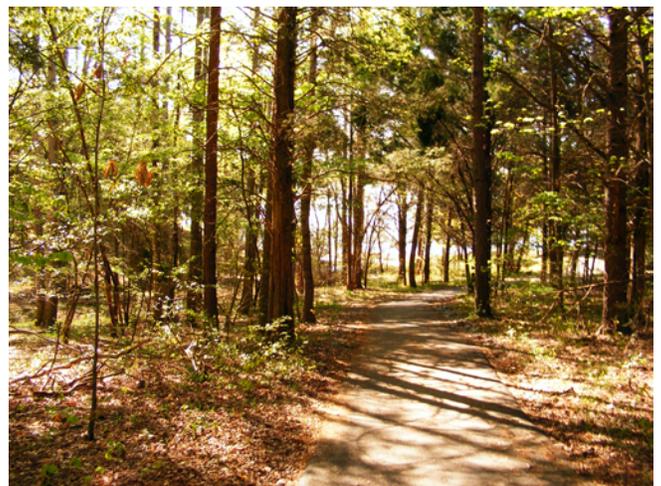
The County's rapid pace of residential development has also encouraged growth in commercial and industrial employment. These growth patterns have also been stimulated by regional commuting patterns. Out-commuting of Spotsylvania County residents has historically been high, necessitated by the area's lack of major employers in relation to metropolitan Washington. However, over the past ten years, the County's expanded retail, office, and industrial base has provided improved opportunities for local employment.

Although the County is a viable business location, it does not currently have enough building space or available industrial/business park acreage to meet the current and future demands. The Economic Development Department is focused on attracting economic development to the County. As such, they have created a process designed to significantly reduce the project review and approval process for Targeted Industries. Targeted Industries are projects that have been identified by the County as providing significant economic benefits, including the creation of high paying employment opportunities or the expansion of the County's industrial tax base.

Comprehensive Plan

The Spotsylvania County Comprehensive Plan was adopted in 2008 and serves the locality through 2028. The County remains one of the fastest growing Counties in the Commonwealth of Virginia. The population has more than doubled in the last twenty years resulting in an unprecedented amount of growth, development, and suburban sprawl.

As shown on the FLUM, the majority of the County is designated Agriculture and Forestal, Agriculture-Forestal Residential, or Recreation



and Open Space. These areas are intended to remain rural in nature over the next 20 years, with a focus on preservation of agriculture and open space.

Each of these categories restricts/limits the density and overall area which can be developed (usually five acres in size or larger) in order to create concentrated village clusters separated by larger areas of open space.

Coupled with these development policies, Spotsylvania County's Comprehensive Plan also lays out a strategy for environmental protection. Protection of unique and endangered resources is a top priority. Critical elements of this strategy include reducing disruption of life and property resulting during flooding and erosion.

Public Services and Infrastructure

The Spotsylvania County water system serves 27,000 customers with drinking water in the County and provides bulk water to the City of Fredericksburg. Over the past several years the County, in partnership with the City of Fredericksburg, has developed a regional water supply, treatment and distribution system to serve the five pressure zones in Spotsylvania County and three zones in the City of Fredericksburg. This action represents the fundamental shift in water production and delivery within both municipalities.

The County's water distribution system has seen significant growth in recent years, especially with the installation and operation of the Motts Run Water Treatment Plant (WTP). This plant, owned by Spotsylvania County, serves both the County and the City of Fredericksburg, and when placed into service significantly altered the operation of both systems.

Prior to the opening of the Motts Run WTP,

Spotsylvania County operated the Ni Water Treatment Facility. To augment water supply and distribution, the County received water from the City of Fredericksburg WTP, at three separate connections: Route 3 pump station, the Lafayette Boulevard pressure reducing valve (PRV), and the Route 1 interconnection.

In the spring of 2000, the County placed the Motts Run WTP into service concurrent to the City of Fredericksburg decommissioning the Kenmore WTP located along the Rappahannock River. The City currently receives its primary water supply from the Motts Run Plant through a connection at Fall Hill Avenue and continues to maintain two emergency connections to Stafford County's water system. The County currently manages water production and distribution at both the Ni and Motts Run Treatment Facilities and has discontinued use of the Route 3 connection.

There are also three wastewater treatment plants in the County. Massaponax, FMC, and Thornburg. Massaponax has a 6.0 mgd capacity and serves the Massaponax Creek drainage basin and includes the pump-over from the American Central sewage collection system and a small part of the upper Hazel Run drainage basin.

The FMC wastewater treatment plant was purchased by the County in 1980 and currently has a capacity of 4.0 mgd. It has no gravity service area, and sewage from the City of Fredericksburg is pumped to the plant. A 5.4 mgd upgrade to achieve enhanced nutrient removal is under design, and a regional sewer operation with the City of Fredericksburg is being considered which would increase the phased 5.4 mgd to 9.9 mgd with decommissioning of the City's 4.5 mgd plant.

The Thornburg plant has a 345,000 gallon per day capacity and services the area along the west side of the Thornburg interchange of Interstate 95 and State Route 606. It also serves residential



and commercial customers along US Route 1, State Route 606, and State Route 632 near the intersection of US Route 1 and State Route 606.

Emerging Trends

Economic development in Spotsylvania County has been relatively successful at attracting commercial business and industrial enterprises. However, a majority of the County's population commutes to work in areas outside of its borders. In order to encourage employment and residence within County borders, the County is attempting to attract and retain business investments and industrial enterprises. Preservation of the County's rural character and agricultural operations is also of utmost importance when

attracting new growth and development. The near-completion of the Spotsylvania Regional Medical Center establishes an important nucleus for additional professional medical services offices employment. There is a high demand for office space in the Massaponax area of the County.

Tourism is also one of the largest economic drivers in Spotsylvania County. An estimate one million tourists visit the County every year to experience some American history and participate in other recreational opportunities. Protecting and promoting historic sites, viewsheds, scenic areas, and rural environments through the use of land development planning will be critical to the tourism development

strategy.

Designation of Urban Development Areas (UDAs), Traditional Neighborhood Developments (TNDs), and the development of a Transfer of Development Rights (TDR) ordinance will also enable appropriate land use regulations to preserve certain areas while developing others.

Stafford County

Stafford County is located approximately 40 miles south of Washington, D.C. and 60 miles north of Richmond, Virginia. It is approximately 277 square miles and is bordered by Prince William County on the north, Fauquier County and Culpeper County on the west, Spotsylvania County and the City of Fredericksburg below the Rappahannock River to the south and the Potomac River and King George County on the east. The County was established in 1664 and named for Staffordshire, England. Falmouth, at the southern end of the county, was a prominent port town until the mid 19th century. Due to its location halfway between the Union and Confederate capitals, the county was devastated by the Civil War. With the construction of I-95 in the late 1960s, the County's agricultural economy was replaced by commercial enterprise. The growth rate increased rapidly, and the County's proximity to major industrial and commercial markets with an abundance of vacant land makes it attractive for residential, commercial, and industrial development in the future.

Development Compatibility

The anticipated economic and population growth of Stafford County will place a strain on the level of public services and infrastructure. Economic growth will also require expanded utilities and improved sheriff and fire and rescue protection.

Economic Vitality

The economy of Stafford County is largely influenced by its proximity to Northern Virginia suburbs and employment at MCB Quantico and the agricultural sector. The County has consistently had a lower unemployment rate than both the State and Nation as a whole. The unemployment rate has been 3% or less since 1994.

MCB Quantico occupies 32,753 acres in Stafford County and over 6,000 marines are stationed there. The Base also employs approximately 7,500 civilians. Quantico has an annual military payroll of \$348 million and an annual civilian payroll of \$471 million. Approximately 3,000 new jobs are expected by 2010 as a result of actions Congress took during its most recent round of BRAC procedures.

The FBI Academy and the FBI National Crime Lab are also located on the Quantico Marine Corps Base. The FBI National Crime Lab relocated to Stafford in 2003 and has over 900 employees. The Marine Corps University and several advanced training schools are also located at Quantico. The Marine Corps Systems Command is a tenant on the base that has both civilian and military employees and an annual budget of \$2 billion.

Although agriculture's economic role in the local economy is gradually diminishing, it is still a defining characteristic of the area. According to the 2007 U.S. Department of Agriculture (USDA) Census of Agriculture, Stafford County had 233 farms in operation that occupied 19,816 acres of land. Between 2002 and 2007, the number of farms in operation declined by 1% and the average size of Stafford farms declines 23%. The market value of total production increased by 13%, while average farm sales increased by 14%.

The County developed a Comprehensive

Economic Development Plan to attract new growth and provide jobs for its residents, diversify the tax base, and enhance quality of life. Research and analysis done during the planning process revealed that Stafford County had a significantly lower unemployment rate than the State and the Nation for over a decade, and that the primary employment sectors for residents of the County included education, health and social services. Other industries that show potential for growth in the future include: finance and insurance, professional business or technology firms, wholesale trade, construction, and arts entertainment and recreation. In addition to these sectors, the plan identified four opportunity sites for new business and industry locations including Boswell's Corner, the Courthouse area, Historic Falmouth, and Southern Gateway. With 2,400 civilian and 500 military jobs potentially moving to Quantico through the most recent round of BRAC, Boswell's Corner is poised for explosive growth.

Comprehensive Plan

Continued exponential population growth in the County requires both the Comprehensive Plan and the Economic Development Plan to designate areas where new growth should occur in order to limit sprawling development patterns and help prevent overburdening existing community facilities and infrastructure.

The Comprehensive Plan identifies the Urban Service Area (USA) which stretches along the I-95 corridor from the Prince William County line in the north to the Spotsylvania County line and the Fredericksburg City limit in the south. Within this zone, which will be expanded in 2019 to accommodate anticipated population growth, are four redevelopment areas. These redevelopment areas include Boswell's Corner, Courthouse Area, Southern Gateway, and Falmouth.



Like other counties in the region, natural resources and environmental protection are a top priority. Continued development over the years has created an increase in the amount of impervious surfaces, loss of forestlands, open spaces, and farmland, and an increase in transportation demands throughout the County. Such development has increased air pollution and storm water runoff. Ensuring that pollution levels do not increase is important when locating future development and implementing land development regulations.

Public Services and Infrastructure

In addition to the environmental concerns in Stafford County, the comprehensive plan addresses the capacity of public facilities by establishing level of service (LOS) standards. Establishing LOS benchmarks for public facilities enables planners to quantify the impacts of type and timing of new development on critical facilities.

The Stafford County Department of Utilities is the sole provider of public water service to the County. The public water area is the entire Urban Service Area (USA) of the County and certain areas outside of the USA.

The County's water supply and treatment system

consists of two surface water reservoirs and two water treatment facilities. The Abel Lake reservoir has a safe yield of 6.1 million gallons per day (mgd). It is the sole source of raw water to the Abel Lake Water Treatment Facility which has a maximum treatment capacity of 6.0 mgd. The Smith Lake reservoir has a safe yield of 7.7 mgd. It is the sole source of raw water to the Smith Lake Water Treatment Facility which has a maximum treatment capacity of 14.0 mgd. Rocky Pen Run reservoir is currently under construction and will be sufficient to provide water supply to meet the build out needs of the county. A new water treatment facility with an initial capacity of 5.0 mgd and an ultimate capacity of 20.0 mgd will be constructed adjacent to the new reservoir. These facilities are scheduled to be completed by 2011.

The water transmission and storage system consists of two ground level water storage tanks, 12 elevated water storage tanks, four major water pumping stations, and approximately 570 miles of water mains ranging in size from 2 inch to 24 inch diameter. The county currently has 6 individual pressure zones.

Stafford County also has two wastewater treatment facilities. The Little Falls Run facility serves the southern portion of the USA and currently has a capacity of 6.0 mgd. The County is currently upgrading the facility to meet the requirements of the Chesapeake Bay Program and expanding to a capacity of 8.0 mgd. This project is scheduled to be completed by December 2010.

The Aquia facility serves the northern portion of the USA and currently has a capacity of 6.5 mgd. The County is currently upgrading the facility to meet the requirements of the Chesapeake Bay Program and expand it to 12.0 mgd. This project is also scheduled to be completed by December 2010.

Emerging Trends

While Stafford County has enjoyed a relatively low unemployment rate and continued population growth in recent history, the type and timing of this growth must be managed to continue enhancing quality of life for county residents, protecting critical environmental features, and providing an environment conducive to economic development. As part of this mission, the County will establish targets for commercial and business growth for new development and re-development, and ensure that land use policies are consistent with attracting and retaining high quality employment options for county residents. Combined these two strategies will encourage mixed-use and high-density development. In addition, the County will also promote alternative rural economic development such as agritourism, ecotourism, home-based businesses and telecommuting. Promoting alternatives such as these can help the County capitalize on its wealth of cultural, historic, and natural resources.

In addition to these approaches to curbing sprawl while promoting development, the County is also exploring the implementation and maintenance of a multi-modal public transportation system throughout the Urban Service Areas and within the redevelopment areas. This land use-transportation planning coordination will help create more sustainable communities where automobile travel is no longer the main mode of transportation. Collectively these approaches exemplify Stafford County's smart growth strategy.