

## 6.0 The People and the Place

This section of the Plan provides the existing characteristics of the community regarding the built environment, population, economy, types of services provided, and the natural environment. Section 15.2-2223 of the State Code states that in preparation of the Comprehensive Plan, the Planning Commission shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth. The elements included in this chapter are listed below.

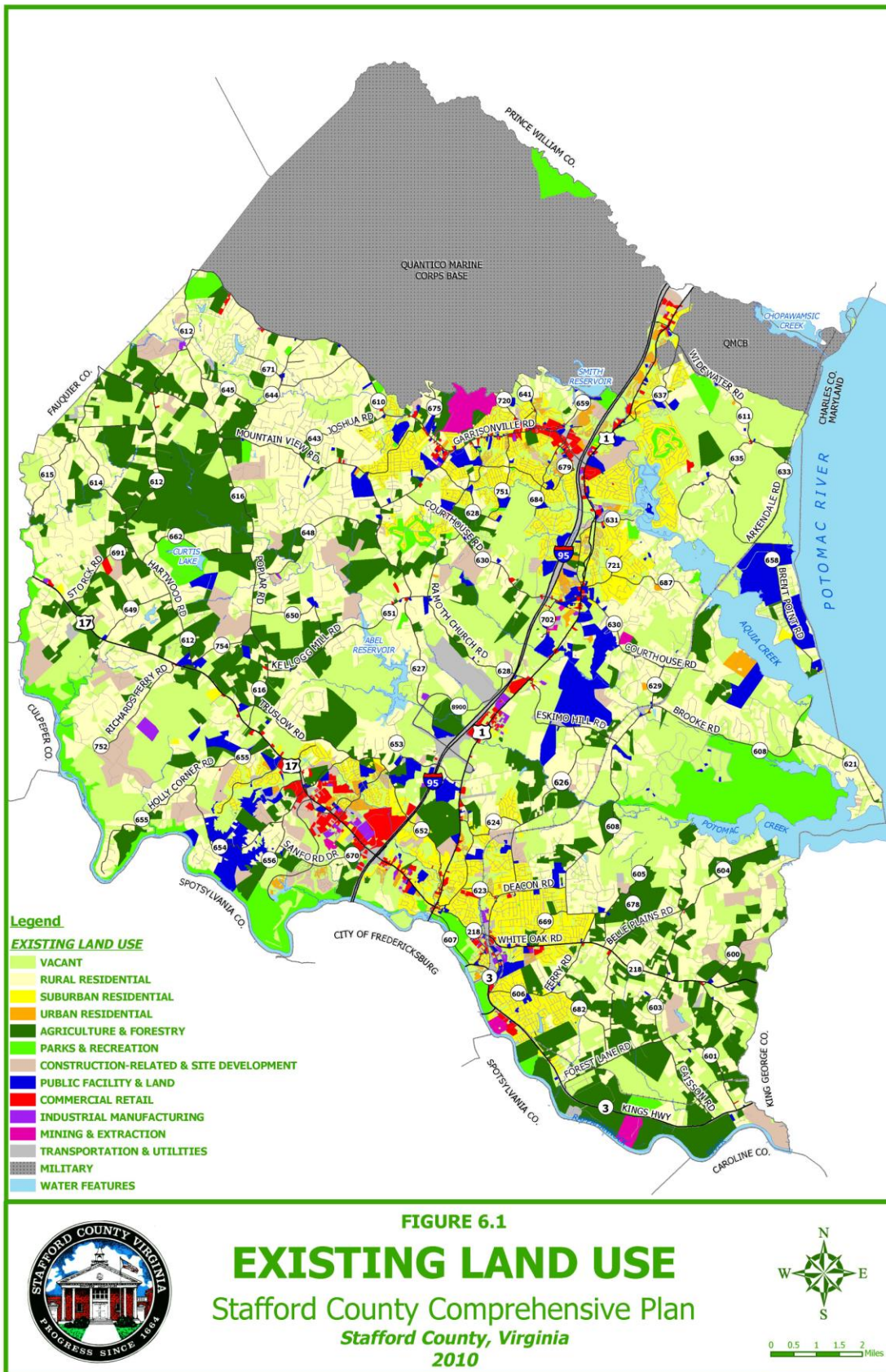
- Land Use
- Population
- Housing
- Economy
- Historic and Cultural Resources
- Mineral Resources
- Community Facilities
- Parks and Recreation
- Infrastructure
- Transportation
- Natural Resources

Please note that some of the data tables provided are based on data from the 2000 census. Updated information should be incorporated into this document when the 2010 Census information is released in the spring of 2011.

### 6.1 Land Use

The existing, observable land use of each parcel in Stafford County is important because it reveals the pattern of past growth, the location of areas that should be preserved and the potential locations for future development. The analysis of existing conditions forms the basis of the future land use plan for the County.

| <b><u>Land Use</u></b>   |
|--|
| <ul style="list-style-type: none"><li>● Current Land Use</li><li>● Zoning Districts</li><li>● Future Zoning Buildout</li></ul> |



### 6.1.1 Current Land Use

An inventory of land uses by parcel reveals how the land in Stafford County is currently being used and is helpful in identifying areas that should be preserved and potential locations for future development. Parcel mapping data was obtained from a data layer in the County’s GIS with a large number of very specific land uses. These were simplified into broad categories for ease of discussion.

Table 6.1 Stafford County Land Use – 2010

| Land Use                            | Acres   | Percent |
|-------------------------------------|---------|---------|
| Rural Residential                   | 37,001  | 20.6%   |
| Suburban Residential                | 9,131   | 5.1%    |
| Urban Residential                   | 1,126   | 0.6%    |
| Commercial Retail                   | 2,042   | 1.2%    |
| Industrial and Manufacturing        | 437     | 0.3%    |
| Parks and Recreation                | 7,330   | 4.1%    |
| Public Facilities and Land          | 5,977   | 3.3%    |
| Transportation and Utilities        | 8,905   | 5.0%    |
| Under Construction/Land Development | 5,411   | 3.0%    |
| Mining and Extraction               | 796     | 0.4%    |
| Agriculture and Forestry            | 22,527  | 12.6%   |
| Military                            | 32,656  | 18.2%   |
| Vacant                              | 39,675  | 22.1%   |
| Water Features                      | 6,338   | 3.5%    |
| Total                               | 179,352 | 100.0%  |

Source: Stafford County Planning and Zoning Department and design based planning, inc.

Stafford County consists of 179,352 acres that have been classified into 14 general land use categories and a brief description of each category is provided:

- Vacant
- Rural Residential
- Suburban Residential
- Urban Residential
- Under Construction/Land Development
- Agriculture and Forestry
- Public Facilities and Land
- Commercial Retail
- Parks and Recreation
- Industrial and Manufacturing
- Transportation and Utilities
- Mining and Extraction
- Military
- Water Features

### Vacant Land

Vacant land is the largest land use category in Stafford County, accounting for approximately 22% (39,675 acres) of the County's land area. Vacant land is any land that is currently not being used and has not been set for the purpose of preserving open space. Large vacant areas are located throughout the County and have potential as development sites, open space buffers or recreational uses. Some parcels in the eastern central portion of the County are designated wetlands and should be protected from development.

### Rural Residential

Rural residential is the second largest land use category in Stafford County, accounting for 20.6% (37,001 acres) of the County's land area. The rural residential category includes single-family detached dwellings on lots at least 1 acre in size. This land use is dispersed throughout the rural areas of the County outside of the Urban Service Area. The largest concentration of this type of land use is in the northwest part of the County, south of the Quantico Marine Base.

### Suburban Residential

The Suburban Residential land use category includes single-family detached residential dwellings located within the Urban Services Area and is typically on ¼ to ½-acre sized lots. This land use accounts for 5.1% (9,131 acres) of the County and is located primarily in North Stafford, south of the Quantico Marine Base, and in the area north of the City of Fredericksburg.

### Military

The military category represents the land occupied by Quantico Marine Base in the northern section of the County. Quantico Marine Base occupies 18.2% (32,656 acres) of the County's land area.

### Agriculture and Forestry

Approximately 12.6% (22,527 acres) of the land area in Stafford County is classified as agricultural uses. This use is also dispersed throughout the County but larger parcels are located along King's Highway and Poplar Road and Hartwood Road.

### Public Facilities and Land

This category refers to those uses that provide services to residents such as health, education, religion and public safety. Land under public ownership but not yet developed is also included in this category. Approximately 3.3% (5,977 acres) of Stafford's land area is devoted to this use.

### Commercial Retail

Commercial uses include retail sales and services, auto sales and service, hotels, food and beverage establishments, financial institutions and offices. Land devoted to commercial use account for 1.2% (2,042 acres) of the County's land area. This land use is primarily located on Garrisonville and Warrenton Roads in the vicinity of I-95 and along Jefferson Davis Highway.

### Urban Residential

The urban residential category includes apartment complexes, townhouses, condominiums and the common areas that surround them. This land use accounts for less than 1% (1,126 acres) of the County's land area. This land use can be found near the I-95 corridor.

### Parks and Recreation

Recreation uses account for 4.1% (7,330 acres) of Stafford County's total acreage. The recreation category includes all public and private parks, marinas, golf courses and community centers in the County. Recreation sites vary in size and are located throughout the County.

### Industrial and Manufacturing

Industrial land uses includes manufacturing and warehousing facilities, truck terminals, salvage yards and quarries. These account for 0.3% (437 acres) of the County's land area and are primarily located along Warrenton Road and Jefferson Davis Highway.

### Under Construction/Land Development

This land use category identifies land that is under development and is in the process of being transformed, typically from a vacant or agricultural use to a more intense use. These areas cover 3.0% (5,411 acres) of the County.

### Transportation and Utilities

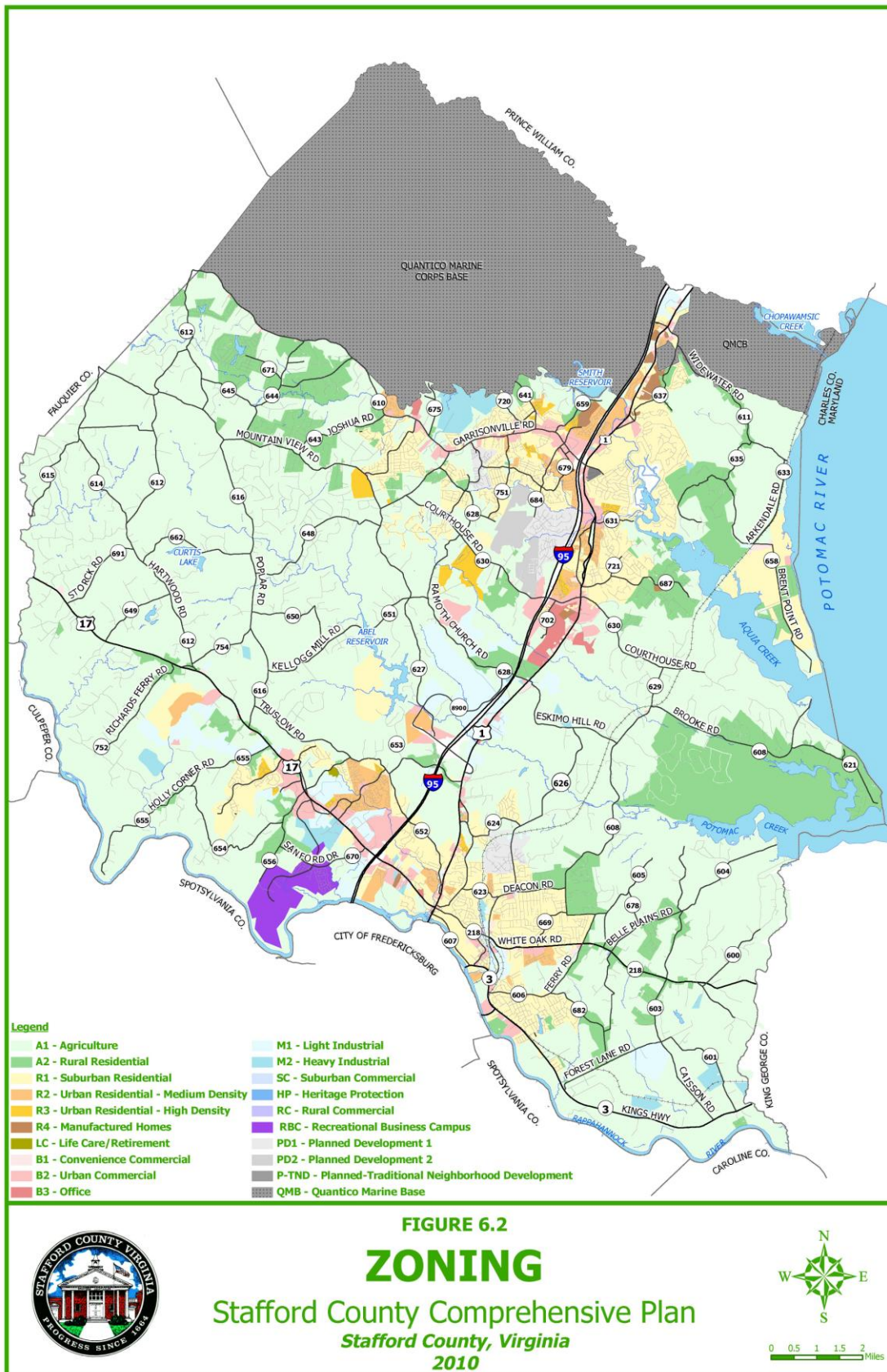
This land use category includes utilities and public works facilities that provide infrastructure support to residents. These uses include power lines, railroad lines, cell tower lots, commuter parking lots, airports, and right-of-ways. This land use accounts for 5.0% (8,905 acres) of the County's total acreage.

### Mining and Extraction

This land use category includes the location of surface mining operations, which covers 0.4% (796 acres) of the County. These areas are located on the north side of Garrisonville Road and along King's Highway.

## *6.1.2 Zoning Regulations*

Stafford County last recodified its Zoning Ordinance in 1994, and it routinely updates the Ordinance on a quarterly basis. The Zoning Ordinance establishes, among other things, permitted uses, minimum lot sizes, minimum front, side and rear setbacks for principal and accessory buildings, maximum building heights, maximum building and lot coverage, and maximum floor areas. The Zoning Ordinance is a critical tool for controlling the type, density, and design of development within the County. The Zoning Ordinance for Stafford County establishes 16 districts. The Ordinance contains provisions for the establishment of two types of planned development districts. In addition to these districts, there are eight overlay districts, which were created to protect resources and mitigate conflicts around certain facilities.



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The following table presents a breakdown of the zoning districts by area. The table was generated using the County’s geographic information system (GIS), which summarized the parcel areas based on assessment data. This accounted for the area in which “No Data” was available. The Quantico Marine Base (QMB) is not a zoning district, but an area over which the County has no land use control.

Table 6.2 Existing Zoning Districts, Stafford County, VA

|                                   | Zoning District                                | Acres   | Percent |       |
|-----------------------------------|--|---------|---------|-------|
| Rural                             | A1- Agriculture                                | 87,884  | 49.0%   | 57.2% |
|                                   | A2- Rural Residential                          | 14,680  | 8.2%    |       |
| Residential                       | R1- Suburban Residential                       | 14,391  | 8.0%    | 9.9%  |
|                                   | R2- Urban Residential – Medium Density         | 2,241   | 1.2%    |       |
|                                   | R3- Urban Residential - High Density           | 837     | 0.5%    |       |
|                                   | R4- Manufactured Home                          | 324     | 0.2%    |       |
|                                   | LC- Life Care/Retirement Community             | 22      | 0.0%    |       |
| Commercial                        | RC- Rural Commercial                           | 5       | 0.0%    | 2.3%  |
|                                   | SC-Suburban Commercial                         | 18      | 0.0%    |       |
|                                   | B1- Convenience Commercial                     | 303     | 0.2%    |       |
|                                   | B2- Urban Commercial                           | 3,180   | 1.8%    |       |
|                                   | B3- Office                                     | 477     | 0.3%    |       |
| Industrial                        | M1- Light Industrial                           | 3,980   | 2.2%    | 3.0%  |
|                                   | M2- Heavy Industrial                           | 1,372   | 0.8%    |       |
| Planned Development/<br>Mixed Use | PD1- Planned Development                       | 1,148   | 0.6%    | 1.6%  |
|                                   | PD2- Planned Development                       | 716     | 0.4%    |       |
|                                   | Planned – Traditional Neighborhood Development | 35      | 0.0%    |       |
|                                   | RBC- Recreational Business Campus              | 1,115   | 0.6%    |       |
| Other                             | HI- Heritage Interpretation                    | 0       | 0%      |       |
| Unzoned Land                      | Military/Federal Land                          | 33,056  | 18.4%   | 25.9% |
|                                   | Street Right-of-Way &                          | 7,230   | 4.0%    |       |
|                                   | Waterways                                      | 6,338   | 3.5%    |       |
| <b>TOTAL</b>                      |  | 179,352 | 100%    |       |

Source: Stafford County Real Estate Data

### Rural Districts

The County has two districts dedicated to rural development. These are the A-1 Agriculture District and A-2 Rural Residential District.

The **A-1** District allows for a greater number of uses, which are associated with agriculture and large lots, such as mulching facilities, sawmills, nurseries and slaughterhouses. The District occupies almost half (49%) of the County and is dominant in the western half and southeast portion of the County.

The **A-2** District is intended as a transition between agriculture and more intense development. Single-family homes and community facilities are permitted on lots of at least one acre. The largest A-2 area is located around

Brooke Road near Marlborough Point. Many of the A-2 areas exist as pockets within the A-1 District.

### Residential Districts

There are five residential districts in Stafford County, which combined, represent roughly 10% of the County. The districts vary in residential use density. Community and public facilities are permitted in all of the districts.

The **R-1** Suburban Residential District is intended for single-family homes with a density of 1.5 units per acre. R-1 Districts are concentrated just south of the Quantico Marine Base and just north of Fredericksburg. Some R-1 Districts are scattered within the Agriculture District.

The **R-2** Urban Residential District allows duplexes and townhouse developments with a density of 3.5 units per acre. Most R-2 Districts are adjacent to R-1 developments.

The **R-3** Urban Residential – High Density District allows the same uses as the R-2 District with a density of 7.0 units per acre. Overall, 0.5% of the county is designated as **R-3** and is primarily located near commercial areas south of Quantico Marine Base.

The **R-4** Manufactured Home District is reserved for manufactured home developments. They are located near the I-95 corridor north of Garrisonville Road.

The **LC** Life Care/Retirement Community District is intended to provide areas for the continuing care of the elderly, providing for transitional housing, progressing from independent units and culminating in nursing home care. Such districts are to be located only where approved water and sewerage are available and where transportation systems are adequate.

### Commercial Districts

Stafford County has six commercial districts. The districts vary in the mix of retail and office development as well as intensity. Overall, 2.3% of the County is designated for commercial use.

The **B-1** Convenience Commercial District is intended for small commercial development that serves the surrounding population. These districts are scattered throughout the County with concentrations found on White Oak Road and Jefferson Davis Highway in both central and northern Stafford County.

The **B-2** Urban Commercial District allows high-density retail sales and service developments with a regional or County-wide market area. These retail



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centers are located along Garrisonville Road, Courthouse Road and Warrenton Road near interchanges off I-95.

The **B-3** Office District is intended to provide an area for professional offices near retail areas. These areas are spotted throughout the County with the largest concentration just added in the Courthouse area.

The **SC** Suburban Commercial District also provides a location for small retail businesses that serve the immediate neighborhood. The difference between the SC and B-1 districts is that the SC District need not be located near a major transportation network and it provides for a greater open space ratio. There are three small areas that are designated as SC Districts in Stafford County.

The **RC** district allows commercial uses at major intersections that serve the nearby rural population. Only two parcels are designated as the RC District.

### Industrial Districts

Stafford County has two zoning designations for industrial uses. Together, they constitute 3.0% of the County's area.

The **M-1** Light Industrial District sets aside areas for certain business and industrial uses which are relatively free from offensive activities and are generally compatible with nearby residential uses. Industrial parks are encouraged within the M-1 District. The largest concentration of M-1 development is found in the center of the County around Jefferson Davis Highway. Other developments exist around Warrenton Road west of I-95, Cool Spring Road, Forest Lane Rd, and on Jefferson Davis Highway near the Quantico Marine Base.

The **M-2** Heavy Industrial District provides for the location of industrial uses that may not be compatible with residential uses due to potential nuisances or hazards. These districts are found in the southern section of the County, around Celebrate VA Parkway, and south of the Quantico Marine Base off of Garrisonville Road.

### Planned Developments/Mixed Use

There are two types of Planned Development Districts. They allow for the creation of innovative neo-traditional developments with a mix of commercial and residential use. They differ in the size of the overall development, residential and commercial densities, and open space ratios.

The **PD-1** Planned Development District allows for greater residential density on developments less than 500 acres. The P-1 District has been utilized in the Park Ridge, Austin Ridge, and Leeland Station communities.

The **PD-2** Planned Development District is for developments between 500 and 850 acres. PD-2 developments are allowed a greater commercial density. A PD-2 District has been designated for the proposed Embrey Mill development on Courthouse Road near I-95.

The **P-TND** Planned – Traditional Neighborhood Development provides for areas of the county which are suitable for an approach to land-use planning and urban design that promotes the development or redevelopment of pedestrian-friendly neighborhoods with a mix of uses, housing types and prices, lot sizes and density, architectural variety, a central civic building and use, a network of streets and alleys that may include on-street parallel parking, and defined development edges.

The **RBC** Recreational Business Campus District provides an area for professional offices, executive housing, and senior housing as well as other developments that will benefit from a natural campus-like setting with open space. One RBC development is located at the end of Celebrate VA Parkway.

#### Other Zoning Districts

Areas of the County include unique characteristics and uses that may not conform with typical development design standards that apply across the County.

The **HI** Heritage Interpretation District was established for the purpose of reserving areas in all regions of the county for interpretation of heritage sites, retaining the setting and feeling of the cultural landscape, permitting restoration, preservation, conservation, education, research and business activities related to the operation of a museum and other historic sites, providing heritage tourism opportunities, and promoting the preservation and enhancement of unique Stafford County cultural resources.

#### Overlay Districts

In addition to the base zoning districts, the Stafford County Zoning Ordinance contains eight overlay districts. The purposes of the districts vary from protecting historical and environmental resources, reducing conflicts between established facilities, and mitigating potential hazards.

Overlay districts add a variety of standards to the underlying districts. These standards could include use restrictions, preservation requirements, or stricter density regulations. The following is a list of the overlay districts used in Stafford County:

- AD Airport Impact - Provides an overlay zone in areas subject to intense and/or frequent emissions of noise and vibration from airports and

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prevents obstructions of airport zones which may result in an air navigation hazard

- CB Chesapeake Bay Preservation Area - Provides an overlay zone to protect the valuable resources of and related to the Chesapeake Bay in accordance with the Virginia Code and adopted plans
- FH Flood Hazard - Provides an overlay zone with limitations on development in areas likely to be inundated by the 100-year flood event, as defined by current flood insurance rate maps for Stafford County to protect life and property and to prevent or minimize flood damage
- HC Highway Corridor - Provides an overlay zone along developed and rapidly developing high traffic road facilities where appropriate special standards would address access and design needs
- HG Historic Gateway Corridor - Is intended to implement the goals of the Comprehensive Plan by protecting cultural resources by guiding new development along major entrance routes to the designated areas
- HR Historic Resources - Is intended to provide for the protection of historic resources in the County
- MZ Military Facility Impact - Is intended to provide an overlay zone to address the interaction between military facilities and surrounding land uses
- RP Reservoir Protection - Is intended to provide an overlay zone that requires best management practices and other protective measures in areas critical to the integrity of public water supplies, rivers, streams and other sensitive features

### Conditional Zoning

The Zoning Ordinance for Stafford County allows a developer to request a change in the zoning designation on a piece of property. In most zoning cases, voluntary proffers made by the applicant are included with the request. Proffers are intended to mitigate negative impacts of the land use proposal on the surrounding community. A proffer could be the construction of roads, provision of infrastructure, dedication of open space, or a cash contribution in lieu of the actual provision of an improvement. Generally, in order for a conditional zoning change to be approved, the proffer must be reasonably related to the requested zoning change and the zoning change must not adversely affect the character of the area in which it is located. The County Board of Supervisors is responsible for deciding zoning change requests following a public hearing and a recommendation of the Planning Commission on the request.

### 6.1.3 Future Build-out Under Existing Zoning

To assess the impact the current zoning regulations would have on future land development in the County, a build-out analysis was conducted. This assumes that all available land builds out to its maximum potential based on the maximum allowable densities.

**Table 6.3 Inside the Urban Services Area**

| ZONING DISTRICTS                 | EXISTING DWELLING UNITS | FUTURE DWELLING UNITS    |                           |               | TOTAL BUILDOUT (EXISTING PLUS FUTURE) | FUTURE COMMERCIAL SQUARE FOOTAGE |
|----------------------------------|-------------------------|--------------------------|---------------------------|---------------|---------------------------------------|----------------------------------|
|                                  |                         | IN APPROVED SUBDIVISIONS | BASED ON ZONING POTENTIAL | TOTAL         |                                       |                                  |
| AGRICULTURE                      | 1,028                   | 2,013                    | 1,922                     | 3,935         | 4,963                                 | 0                                |
| RURAL RESIDENTIAL                | 1,052                   | 6                        | 654                       | 660           | 1,712                                 | 0                                |
| CONVENIENCE COMMERCIAL           | 29                      | 0                        | 0                         | 0             | 29                                    | 3,803,715                        |
| URBAN COMMERCIAL                 | 112                     | 0                        | 0                         | 0             | 112                                   | 48,989,368                       |
| OFFICE                           | 16                      | 0                        | 0                         | 0             | 16                                    | 8,132,147                        |
| LIGHT INDUSTRIAL                 | 20                      | 0                        | 0                         | 0             | 20                                    | 35,616,141                       |
| HEAVY INDUSTRIAL                 | 2                       | 0                        | 0                         | 0             | 2                                     | 11,901,145                       |
| PLANNED DEVELOPMENT 1            | 1,905                   | 355                      | 1,196                     | 1,551         | 3,456                                 | 0                                |
| PLANNED DEVELOPMENT 2            | 0                       | 1,602                    | 0                         | 1,602         | 1,602                                 | 0                                |
| SUBURBAN RESIDENTIAL             | 16,544                  | 980                      | 5,408                     | 6,388         | 22,932                                | 0                                |
| URBAN RESIDENTIAL MEDIUM DENSITY | 7,469                   | 0                        | 1,348                     | 1,348         | 8,817                                 | 0                                |
| URBAN RESIDENTIAL HIGH DENSITY   | 3,219                   | 575                      | 0                         | 575           | 3,794                                 | 0                                |
| MANUFACTURED HOMES               | 1,399                   | 0                        | 396                       | 396           | 1,795                                 | 0                                |
| RECREATIONAL BUSINESS CAMPUS     | 25                      | 409                      | 848                       | 1,257         | 1,282                                 | 36,842,479                       |
| SUBURBAN COMMERCIAL              | 0                       | 0                        | 6                         | 6             | 6                                     | 38,727                           |
| <b>TOTAL</b>                     | <b>32,820</b>           | <b>5,940</b>             | <b>11,778</b>             | <b>17,718</b> | <b>50,538</b>                         | <b>145,323,722</b>               |

**Table 6.4 Rural Areas**

| ZONING DISTRICTS                  | EXISTING DWELLING UNITS | FUTURE DWELLING UNITS    |                           |               | TOTAL BUILDOUT (EXISTING PLUS FUTURE) | FUTURE COMMERCIAL SQUARE FOOTAGE |
|-----------------------------------|-------------------------|--------------------------|---------------------------|---------------|---------------------------------------|----------------------------------|
|                                   |                         | IN APPROVED SUBDIVISIONS | BASED ON ZONING POTENTIAL | TOTAL         |                                       |                                  |
| AGRICULTURE                       | 6,038                   | 1,423                    | 9,477                     | 10,900        | 16,938                                | 0                                |
| RURAL RESIDENTIAL                 | 3,580                   | 104                      | 1,817                     | 1,921         | 5,501                                 | 0                                |
| CONVENIENCE COMMERCIAL            | 7                       | 0                        | 0                         | 0             | 7                                     | 535,030                          |
| URBAN COMMERCIAL                  | 5                       | 0                        | 0                         | 0             | 5                                     | 696,481                          |
| OFFICE                            | 0                       | 0                        | 0                         | 0             | 0                                     | 522,203                          |
| LIGHT INDUSTRIAL                  | 3                       | 0                        | 0                         | 0             | 3                                     | 2,206,706                        |
| HEAVY INDUSTRIAL                  | 0                       | 0                        | 0                         | 0             | 0                                     | 0                                |
| SUBURBAN RESIDENTIAL              | 1,270                   | 225                      | 446                       | 671           | 1,941                                 | 0                                |
| URBAN RESIDENTIAL- MEDIUM DENSITY | 38                      | 0                        | 408                       | 408           | 446                                   | 0                                |
| URBAN RESIDENTIAL- HIGH DENSITY   | 168                     | 0                        | 58                        | 58            | 226                                   | 0                                |
| MANUFACTURED HOMES                | 12                      | 0                        | 81                        | 81            | 93                                    | 0                                |
| RECREATIONAL BUSINESS CAMPUS      | 0                       | 0                        | 1                         | 1             | 1                                     | 48,963                           |
| RURAL COMMERCIAL                  | 0                       | 0                        | 0                         | 0             | 0                                     | 130,885                          |
| SUBURBAN COMMERCIAL               | 1                       | 0                        | 0                         | 0             | 1                                     | 282,727                          |
| <b>TOTAL</b>                      | <b>11,122</b>           | <b>1,752</b>             | <b>12,288</b>             | <b>14,040</b> | <b>25,162</b>                         | <b>4,422,996</b>                 |

**Table 6.5 Summary**

|                                  |               |              |               |               |               |                    |
|----------------------------------|---------------|--------------|---------------|---------------|---------------|--------------------|
| <b>TOTAL IN GROWTH AREA</b>      | 32,820        | 5,940        | 11,778        | 17,718        | 50,538        | 145,323,722        |
| <b>TOTAL OUTSIDE GROWTH AREA</b> | 11,122        | 1,752        | 12,288        | 14,040        | 25,162        | 4,422,996          |
| <b>GRAND TOTAL</b>               | <b>43,942</b> | <b>7,692</b> | <b>24,066</b> | <b>31,758</b> | <b>75,700</b> | <b>149,746,718</b> |

### 6.1.4 Findings

- Stafford County consists of 174,291 acres
- The land use categories that accounts for the largest land areas in Stafford County are vacant land (20.8%), rural residential (20.4%), military (19%) and agriculture (13.6%)
- Stafford County’s Zoning Ordinance includes: 19 zoning districts, including 4 planned development/mixed use districts and eight overlay districts

## 6.2 Population

An understanding of current and expected future population allows the locality to adequately prepare for its potential impacts on land use and community resources. This section examines several characteristics of the population of Stafford County. Using data obtained from the US Census Bureau, Stafford County is compared to surrounding counties, the City of Fredericksburg, and the State as a whole, to get an understanding of its current characteristics and future role within the State.

Over the last five decades, as the population in Stafford County has grown, the character of the landscape has also changed. The once primarily rural County is being transformed through the development of suburban and urban centers. The challenge for the County is to accommodate growth while maintaining the quality of life residents have come to expect; a component of which is the availability of an adequate amount of open space.

### 6.2.1 Historical Trends

In 2000, the population in Stafford County was 51% higher (92,446) than it was in 1990 (61,236). During that same time period, all comparison areas experienced population increases, but only Spotsylvania County had a greater population increase (58%) than Stafford County. The population of Stafford County increased at a significantly faster rate than the State as a whole (14%).

Table 6.6 Population Change 1950-2000  
(Stafford County, VA and Comparison Areas)

|                               | 1950      | 1960      | 1970      | 1980      | 1990      | 2000      | Percent Change 1990-2000 |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------|
| <b>Stafford County</b>        | 11,902    | 16,876    | 24,587    | 40,470    | 61,236    | 92,446    | 51.0%                    |
| <b>Fauquier County</b>        | 21,248    | 24,066    | 26,375    | 35,889    | 48,741    | 55,139    | 13.1%                    |
| <b>King George County</b>     | 6,710     | 7,243     | 8,039     | 10,543    | 13,527    | 16,803    | 24.2%                    |
| <b>Prince William County</b>  | 22,612    | 50,164    | 111,102   | 144,703   | 215,686   | 280,813   | 30.2%                    |
| <b>Spotsylvania County</b>    | 11,920    | 13,819    | 16,424    | 34,435    | 57,403    | 90,395    | 57.5%                    |
| <b>City of Fredericksburg</b> | 12,158    | 13,639    | 14,450    | 15,322    | 19,027    | 19,279    | 1.3%                     |
| <b>State of Virginia</b>      | 3,318,680 | 3,966,949 | 4,648,494 | 5,346,818 | 6,187,358 | 7,078,515 | 14.4%                    |

Source: US Census Bureau and design based planning, inc.

As indicated in the table above, Stafford's population has steadily increased since 1950. However, the rate of increase has slowed somewhat since 1980. Between 1970 and 1980, Stafford's population increased by 65%. The rate of change in the population decreased to 51% between 1980 and 1990 and

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remained the same for the 1990 to 2000 period. Overall, the County has experienced a doubling of its population for every 20 year period since 1950.

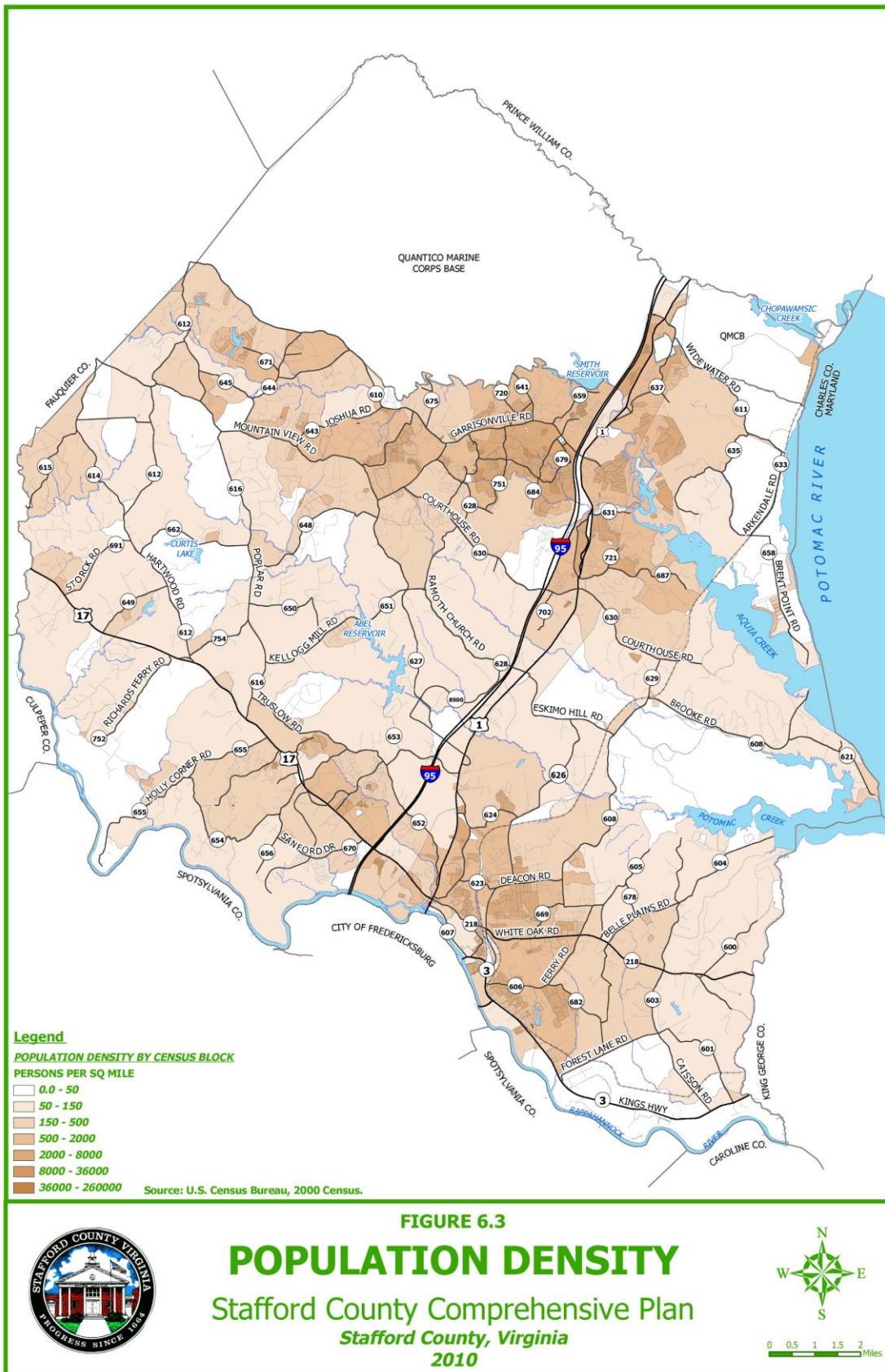
Table 6.7 Population Estimates and Projections  
Stafford County, VA and Comparison Areas

|                               | <b>2000<br/>Census</b> | <b>July 1, 2009<br/>Census Estimate</b> | <b>2010<br/>VEC<br/>Projection</b> | <b>2020<br/>VEC<br/>Projection</b> | <b>2030<br/>VEC<br/>Projection</b> | <b>Percent<br/>Change<br/>2000 to<br/>2030</b> |
|-------------------------------|------------------------|---|------------------------------------|------------------------------------|------------------------------------|--|
| <b>Stafford County</b>        | 92,446                 | 124,166                                 | 135,806                            | 176,710                            | 218,772                            | 136.6%   |
| <b>Fauquier County</b>        | 55,577                 | 68,010                                  | 72,685                             | 89,318                             | 107,168                            | 92.8%  |
| <b>King George County</b>     | 16,803                 | 23,557                                  | 23,580                             | 30,120                             | 37,393                             | 122.5%   |
| <b>Prince William County</b>  | 283,811                | 379,166                                 | 401,323                            | 515,235                            | 609,935                            | 114.9%   |
| <b>Spotsylvania County</b>    | 90,395                 | 120,977                                 | 134,163                            | 175,402                            | 217,797                            | 140.9%   |
| <b>City of Fredericksburg</b> | 19,279                 | 23,193                                  | 22,371                             | 25,116                             | 28,518                             | 47.9%  |
| <b>State of Virginia</b>      | 7,104,078              | 7,882,590                               | 8,010,342                          | 8,917,575                          | 9,825,288                          | 38.3%  |

Source: US Census Bureau and Virginia Employment Commission

According to population projection figures prepared by the Virginia Employment Commission, continued growth is expected for Stafford County's population between 2000 and 2030, but at a slower rate than was experienced during the previous two decades. Stafford's population was expected to grow by 47% between 2000 and 2010, by 30.1% between 2010 and 2020, and by 23.8% between 2020 and 2030. A similar pattern of continued growth was also projected at the state level, but at a slower rate than the County. The State's population was projected to grow by approximately 12.8% between 2000 and 2010, 11.3% between 2010 and 2020, and 10.2% between 2020 and 2030.

Although population continues to grow, the County has experienced a decline in the rate of increase in recent years. Based on the July 1, 2009 estimates, it is unlikely the County population will increase to 135,806 in 2010, as projected by the Virginia Employment Commission.





6.2.2 *Composition*

In 2000, Stafford County’s population was primarily white (80%, not including individuals of Hispanic origin) and there was an almost equal proportion of males and females. Among comparison areas, Fauquier County and Spotsylvania had less racially diverse populations (87% and 81% white, respectively), while Prince William County had the most racially diverse population (65% white). Although Stafford County was predominantly white in 2000, the percentage of non-whites increased between 1990 (11%) and 2000 (20%). Most comparison areas experienced a similar pattern of increased diversity. The table that follows summarizes major population characteristics in 2000.

Table 6.8 Population Characteristics – 2000  
Stafford County, VA and Comparison Areas

|                             | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|-----------------------------|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| <b>White*</b>               | 80.1%           | 87.1%           | 76.4%              | 64.6%                 | 81.2%               | 71.1%                  | 70.1%             |
| <b>Black*</b>               | 11.7%           | 8.2%            | 18.9%              | 18.5%                 | 11.8%               | 20.3%                  | 19.4%             |
| <b>Hispanic</b>             | 3.4%            | 2.1%            | 2.1%               | 9.7%                  | 2.6%                | 4.8%                   | 4.6%              |
| <b>Male:</b>                | 50.4%           | 49.2%           | 50.8%              | 49.9%                 | 49.3%               | 45.0%                  | 49.0%             |
| <b>Female:</b>              | 49.6%           | 50.8%           | 49.2%              | 50.1%                 | 50.7%               | 55.0%                  | 51.0%             |
| <b>Under 18 years</b>       | 31.5%           | 26.8%           | 27.7%              | 30.4%                 | 29.9%               | 17.7%                  | 24.5%             |
| <b>18 to 34 years</b>       | 21.3%           | 18.1%           | 21.7%              | 24.8%                 | 20.9%               | 38.3%                  | 24.1%             |
| <b>35 to 50 years</b>       | 28.1%           | 26.9%           | 25.8%              | 26.7%                 | 26.4%               | 18.4%                  | 24.7%             |
| <b>50 to 64 years</b>       | 13.2%           | 17.6%           | 15.2%              | 13.5%                 | 14.7%               | 12.6%                  | 15.5%             |
| <b>Over 65 years</b>        | 5.8%            | 10.6%           | 9.6%               | 4.6%                  | 8.1%                | 13.1%                  | 11.2%             |
| <b>Median Age</b>           | 33.1            | 37.8            | 35.1               | 31.9                  | 34.3                | 30.3                   | 35.7              |
| <b>High School Diploma</b>  | 51.5%           | 51.9%           | 52.8%              | 50.0%                 | 55.3%               | 45.6%                  | 46.4%             |
| <b>Associate Degree</b>     | 7.4%            | 5.6%            | 3.9%               | 7.3%                  | 5.7%                | 4.1%                   | 5.6%              |
| <b>Bachelor's degree</b>    | 18.8%           | 18.2%           | 15.6%              | 20.3%                 | 16.0%               | 17.9%                  | 17.9%             |
| <b>Post Graduate Degree</b> | 10.8%           | 8.8%            | 8.1%               | 11.2%                 | 6.8%                | 12.6%                  | 11.6%             |

Source: US Census and design based planning, inc.

\*Does not include individuals of Hispanic Origin

In 2000, 32% of the population in Stafford County was under the age of 18. This was a higher percentage than all comparison areas. At the other end of the spectrum, Stafford County had a lower percentage (6%) of residents over 65 years of age than all comparison areas except Prince William County (5%). The median age of residents in Stafford was 33.1 years, which was lower than most comparison areas including Spotsylvania County (34.3 years), the State (35.7 years) and Fauquier County (37.8 years). The percentage of the population in Stafford County that was 50 years of age or older increased from 16% in 1990 to 19% in 2000.

Stafford County residents, 25 years and older, had a higher level of educational attainment than most comparison areas in 2000. Thirty seven percent of residents had earned an associate degree or higher and 30% had a bachelor's degree or higher. Among comparison areas, only Prince William County had a higher percentage of residents with an associate degree or higher (39%).

### 6.2.3 Findings

- Stafford County's population has more than doubled over every 20 year period between 1950 and 2000, and by more than 50% between 1990 and 2000
- The Virginia Employment Commission projects that Stafford County's population will grow at more than three times the rate of the State as a whole between 2000 and 2030
- In 2000, the median age of residents in Stafford County was 33.1 years, which was lower than the State as a whole
- Stafford County residents had a higher level of educational attainment than most comparison areas in 2000

## 6.3 Housing

Housing conditions in Stafford County are evaluated to ensure that there is adequate housing for current and future residents of the County. This is accomplished through a review of the total number of housing units, total units in each structure, median age of the housing stock, housing occupancy and vacancy, number of building permits issued, value of housing and median contract rent.

### 6.3.1 Housing Availability

Stafford County had 31,405 housing units in 2000, 96% of which were occupied. Owners occupied more than 80% of units. Stafford's occupancy rate was higher than all comparison areas except Prince William County. Of the County's 4% vacant units, most were for sale (34%) or rent (24%). Between 1990 and 2000, the number of housing units in Stafford County increased by 53% (10,876 units) while the population increased by 51% (31,210 persons). All comparison areas also had increases in the number of housing units, but only Spotsylvania County had a higher rate of increase (63%) than Stafford County.

Table 6.9 Housing Characteristics – 2000  
Stafford County, VA and Comparison Areas

|                                      | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|--------------------------------------|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| <b>Total Housing Units</b>           | <b>31,405</b>   | <b>21,046</b>   | <b>6,820</b>       | <b>98,052</b>         | <b>33,329</b>       | <b>8,888</b>           | <b>2,904,192</b>  |
| <b>Occupied</b>                      | <b>96.1%</b>    | <b>94.3%</b>    | <b>89.3%</b>       | <b>96.4%</b>          | <b>93.9%</b>        | <b>91.2%</b>           | <b>92.9%</b>      |
| Owner occupied                       | 80.6%           | 76.2%           | 71.8%              | 71.7%                 | 82.2%               | 35.5%                  | 68.1%             |
| Renter occupied                      | 19.4%           | 23.8%           | 28.2%              | 28.3%                 | 17.8%               | 64.5%                  | 31.9%             |
| <b>Vacant</b>                        | <b>3.9%</b>     | <b>5.7%</b>     | <b>10.7%</b>       | <b>3.6%</b>           | <b>6.1%</b>         | <b>8.8%</b>            | <b>7.1%</b>       |
| For rent                             | 23.7%           | 13.8%           | 16.7%              | 26.6%                 | 22.9%               | 60.8%                  | 23.5%             |
| For sale only                        | 34.2%           | 20.3%           | 10.8%              | 34.9%                 | 24.2%               | 16.4%                  | 15.9%             |
| Rented or sold, not occupied         | 15.2%           | 7.6%            | 19.2%              | 8.6%                  | 10.0%               | 9.2%                   | 9.7%              |
| For seasonal, rec. or occasional use | 14.1%           | 33.1%           | 36.5%              | 9.8%                  | 29.6%               | 7.9%                   | 30.6%             |
| Other vacant                         | 12.7%           | 25.2%           | 16.7%              | 20.0%                 | 13.2%               | 5.7%                   | 20.3%             |
| <b>Average Household Size</b>        | <b>3.01</b>     | <b>2.75</b>     | <b>2.7</b>         | <b>2.94</b>           | <b>2.87</b>         | <b>2.09</b>            | <b>2.54</b>       |

Source: US Census and design based planning, inc.

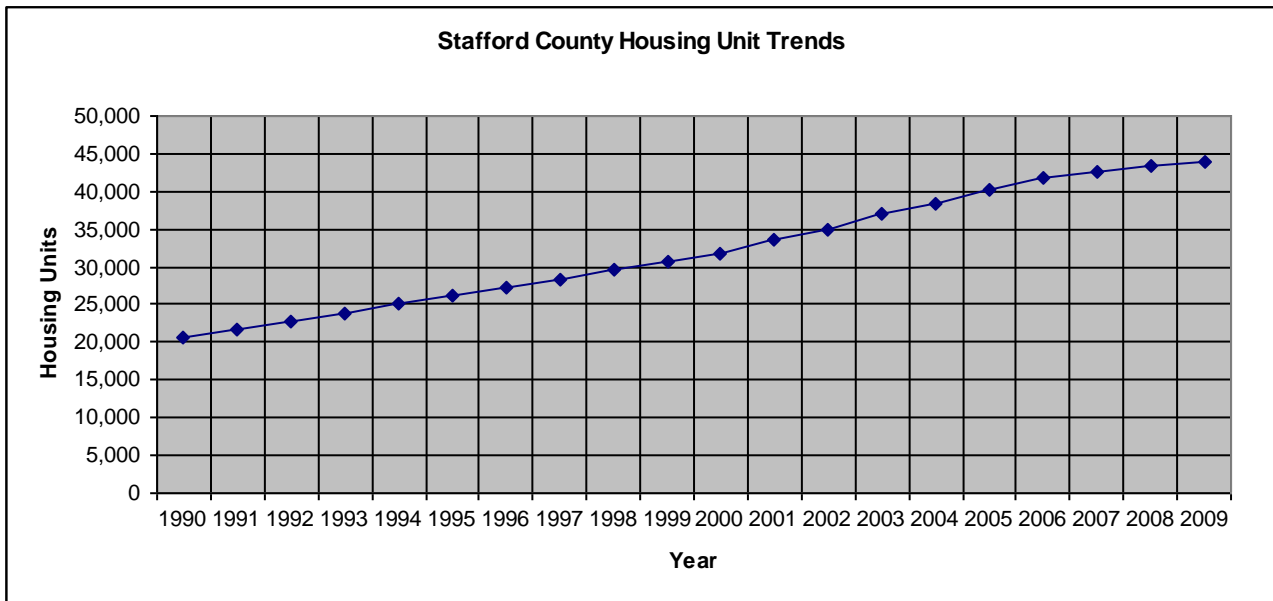
Over the last nineteen years, housing units in the County increased from 20,529 in 1990 to 43,838 in 2009. Over the ten year period from 1990 to 2000, the County experienced an annual increase of 1,129 housing units. During the last decade from 2000 to 2009, an annual increase of 1,202 housing units occurred. While the unit increase has been consistent from

decade to decade, the rate has slowed in recent years. From 2006 to 2009, an annual increase of 684 housing units occurred. The annual housing unit data is provided in Table 6.10 and the accompanying chart.

Table 6.10 Annual Housing Unit Trends (1990 – 2009)  
Stafford County VA

| Year | Housing Units | Year | Housing Units |
|------|---------------|------|---------------|
| 1990 | 20,529        | 2000 | 31,820        |
| 1991 | 21,658        | 2001 | 33,479        |
| 1992 | 22,787        | 2002 | 34,973        |
| 1993 | 23,916        | 2003 | 36,982        |
| 1994 | 25,045        | 2004 | 38,427        |
| 1995 | 26,175        | 2005 | 40,220        |
| 1996 | 27,304        | 2006 | 41,787        |
| 1997 | 28,433        | 2007 | 42,595        |
| 1998 | 29,562        | 2008 | 43,322        |
| 1999 | 30,691        | 2009 | 43,838        |

\* Values between 1990 and 2000 are based on a linear increase of 1,129 housing units per year between the actual decennial census counts. From 2000 to 2009, the data is based on building permit data.



A variety of housing is available in Stafford County, but the predominant housing type is the single-family detached dwelling. Single-family detached units accounted for 76% of all dwellings, followed by single-family attached at 11%. Among comparison areas only Fauquier County had a higher percentage of single-family units. The City of Fredericksburg had the lowest percentage of single-family units (49%), which was consistent with its urbanized, higher density setting.

## The People and the Place

The housing stock in Stafford County is relatively new. Over 40% of the homes in Stafford County were constructed between 1990 and 2000, 25% were constructed during the 1980s and 17% during the 1970s. Among comparison areas, only Spotsylvania had a similar construction pattern with 45% of homes constructed during the 1990s, 28% during the 1980s and 16% during the 1970s.

Table 6.11 Units in Structure – 2000  
Stafford County, VA and Comparison Areas

|                        | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|------------------------|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| 1 Unit - Detached      | 76.2%           | 85.1%           | 73.9%              | 53.9%                 | 79.0%               | 41.7%                  | 62.3%             |
| 1 Unit - Attached      | 11.3%           | 5.9%            | 3.8%               | 26.8%                 | 7.2%                | 7.4%                   | 9.6%              |
| 2 Units                | 0.5%            | 1.6%            | 1.5%               | 0.7%                  | 0.3%                | 4.6%                   | 2.1%              |
| 3 or 4 Units           | 1.4%            | 1.5%            | 2.7%               | 1.2%                  | 0.8%                | 4.6%                   | 3.3%              |
| 5 to 9 Units           | 2.4%            | 0.8%            | 3.4%               | 3.6%                  | 1.0%                | 10.5%                  | 5.0%              |
| 10 to 19 Units         | 2.8%            | 1.8%            | 1.3%               | 9.1%                  | 2.0%                | 20.9%                  | 5.3%              |
| 20 to 49 Units         | 0.5%            | 0.4%            | 0.3%               | 1.1%                  | 0.4%                | 3.7%                   | 1.7%              |
| 50 or more Units       | 0.3%            | 0.6%            | 0.1%               | 1.7%                  | 1.8%                | 6.0%                   | 4.2%              |
| Mobile Home            | 4.6%            | 2.1%            | 12.7%              | 1.8%                  | 7.4%                | 0.6%                   | 6.4%              |
| Boat, RV, Van, etc.    | 0.1%            | 0.1%            | 0.2%               | 0.1%                  | 0.1%                | 0.0%                   | 0.1%              |
| Median Year Home Built | 1987            | 1979            | 1979               | 1983                  | 1988                | 1968                   | 1975              |

Source: US Census and design based planning, inc.

Residential and commercial development is continuing in Stafford County. The table that follows indicates the number of new construction permits that were issued between 2000 and 2007. Residential construction permits have been issued for single-family, mobile home/agriculture, townhouse, duplex, multi-family and condominium dwellings. New residential development remained strong through 2005, but has since experienced a decline, consistent with the national economic slowdown.

Single family (55%) and multi-family dwelling units (28%) were the primary housing types being constructed. The number of permits that were issued each year varied, averaging to over 1,700 dwellings annually through 2007, and construction values have generally increased. In 2002, residential construction peaked with building permits being issued for 2,096 units. 2006 reflected the start of the housing and economic downturn with only 860 permits issued, compared to 1,641 the prior year.

Table 6.12 Permit Activity 2000-2009  
(In Millions of Dollars)

| <b>New Construction</b>           | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Residential                       | 1,970       | 1,581       | 2,096       | 1,398       | 1,981       | 1,641       | 860         | 758         | 413         | 516         |
| Residential<br>Construction Value | \$205       | \$227       | \$293       | \$243       | \$315       | \$375       | \$239       | \$188       | \$87        | \$114       |
| Commercial                        | 24          | 27          | 44          | 151         | 68          | 86          | 81          | 60          | 47          | 38          |
| Commercial<br>Construction Value  | \$15        | \$51        | \$15        | \$55        | \$45        | \$552       | \$96        | \$110       | \$51        | \$33        |
| Industrial                        | N/A         | 8           | 20          | 20          | 35          | 34          | 20          | 14          | 6           | 2           |
| Industrial<br>Construction Value  | N/A         | \$4.6       | \$7.8       | \$3.2       | \$15.2      | \$11.1      | \$6         | \$14        | \$0.75      | \$0.05      |

Source: Department of Public Works

According to the US Census Bureau, Stafford County had approximately 41,791 housing units in 2006. This represents a 33% increase from 2000 when that figure was 31,405 units. In 2005, according to the Stafford County Department of Economic Development, 810,000 sq. ft. of commercial and industrial space was added. As of April 2006, over 700,000 sq. ft. was under construction while an additional 2 million sq. ft. was undergoing site plan review.

### 6.3.2 Value and Rent

In 2000, the median value of a home in Stafford County was \$156,400, which was higher than all comparison areas except Fauquier County. The median monthly contract rent was \$707, which was higher than all comparison areas except Prince William County (\$755). Renters spent more of their income on housing than homeowners in 2000. This was true in all comparison areas.

Table 6.13 Housing Value and Median Rent – 2000  
Stafford County, VA and Comparison Areas

|  | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|--|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| Less than \$50,000   | 0.5%            | 0.8%            | 2.2%               | 0.5%                  | 1.1%                | 3.1%                   | 6.1%              |
| \$50,000 to \$99,999   | 11.8%           | 11.2%           | 28.1%              | 11.9%                 | 23.6%               | 27.8%                  | 30.6%             |
| \$100,000 to \$124,999   | 15.2%           | 11.8%           | 21.3%              | 18.8%                 | 22.5%               | 14.6%                  | 13.1%             |
| \$125,000 to \$149,999   | 17.9%           | 17.8%           | 18.1%              | 19.1%                 | 19.6%               | 10.3%                  | 11.6%             |
| \$150,000 to \$174,999   | 18.2%           | 16.6%           | 10.3%              | 12.8%                 | 11.8%               | 12.5%                  | 8.8%              |
| \$175,000 to \$199,999   | 14.7%           | 10.8%           | 6.3%               | 9.7%                  | 7.3%                | 8.9%                   | 6.7%              |
| \$200,000 to \$299,999   | 17.8%           | 22.2%           | 9.9%               | 21.9%                 | 10.5%               | 14.6%                  | 13.9%             |
| \$300,000 to \$399,999   | 2.7%            | 4.6%            | 2.6%               | 3.9%                  | 2.0%                | 3.3%                   | 5.0%              |
| \$400,000 to \$499,999   | 0.5%            | 2.5%            | 0.7%               | 1.0%                  | 0.7%                | 3.3%                   | 2.1%              |
| \$500,000 or more  | 0.8%            | 1.7%            | 0.5%               | 0.4%                  | 0.9%                | 1.5%                   | 2.1%              |
| Median value   | \$156,400       | \$162,700       | \$123,200          | \$149,600             | \$128,500           | \$135,800              | \$125,400         |
| Homeowners who Spent over 30% of Household Income on Housing in 1999 | 20.8%           | 20.2%           | 17.8%              | 22.7%                 | 21.7%               | 22.2%                  | 20.3%             |
| Median Contract Rent   | \$707           | \$594           | \$527              | \$755                 | \$679               | \$583                  | \$550             |
| Renters who Spent Over 30% of Household Income on Housing in 1999    | 31.8%           | 31.2%           | 20.6%              | 32.2%                 | 33.9%               | 41.3%                  | 33.9%             |

Source: US Census and design based planning, inc.

According to the US Department of Housing and Urban Development, housing is generally considered affordable if costs do not exceed 30% of household annual income. In 2000, Stafford County had a higher median home value and median contract rent than most comparison areas. In 1999, 32% of renters and 21% of home owners in Stafford County spent 30% or more of their income on housing; a decrease from 1989 when those figures were 38% and 28%, respectively. In 1999, a lower percentage of residents in Stafford spent over 30% of their income on housing than Spotsylvania County, Prince William County, the City of Fredericksburg, and the State as a whole.

### Recent Real Estate Trends

To assess real estate trends in recent years, home sales data from Metropolitan Regional Information Systems, Inc. was reviewed. Home sales data was derived from public records provided by County offices.

As indicated in the table that follows, average sale price and home sales volume peaked between 2005 and 2006, after which a severe drop occurred. From 2005 to 2007, home sales volume was cut in half, decreasing from 2,962 units to 1,473 units. Since 2006, average sales prices have seen a decline from \$395,473 to \$244,769 in 2009.

Table 6.14 Home Sales (2004-2009)  
Stafford County, VA

| Year | Total Sold | Average Sale Price | Median Sale Price |
|------|------------|--------------------|-------------------|
| 2009 | 1,835      | \$244,769          | \$229,000         |
| 2008 | 1,614      | \$294,951          | \$272,950         |
| 2007 | 1473       | \$375,959          | \$360,000         |
| 2006 | 2032       | \$395,473          | \$380,000         |
| 2005 | 2962       | \$388,836          | \$379,000         |
| 2004 | 2861       | \$303,613          | \$290,000         |

Source: Metropolitan Regional Information System's Inc. – MLS Resale Data

### 6.3.3 Findings

- Over 96% of housing units in Stafford County were occupied in 2000 and 81% were owner-occupied
- Between 1990 and 2000, the number of housing units grew at a slightly faster rate than the population
- In 2000, most dwellings in Stafford County were single-family detached units
- In 2000, over 40% of Stafford's housing stock had been constructed between 1990 and 2000
- Significant residential and commercial development occurred between 2000 and 2005
- The amount of new residential development has declined since 2005
- In 2000, the median value of homes in Stafford was higher than all comparison areas
- In 2000, renters in all comparison areas spent a higher percentage of their income on housing than homeowners
- Housing was generally affordable in the County in 1999; almost 70% of residents in Stafford spent less than 30% of their income on housing
- Housing values peaked in 2006 with an average home sale price of \$395,473.



## 6.4 Economy

The economy of Stafford County is evaluated through an examination of characteristics such as labor force, industries of employment, occupations of residents and their income levels. Employment characteristics reveal which industries are important to the economic viability of the locality. The income characteristics of residents are an indicator of the County's financial stability and its ability to pay for governmental services. Multiple income characteristics are usually examined because no one statistic accurately demonstrates the economic character of an area.

### 6.4.1 Labor Force

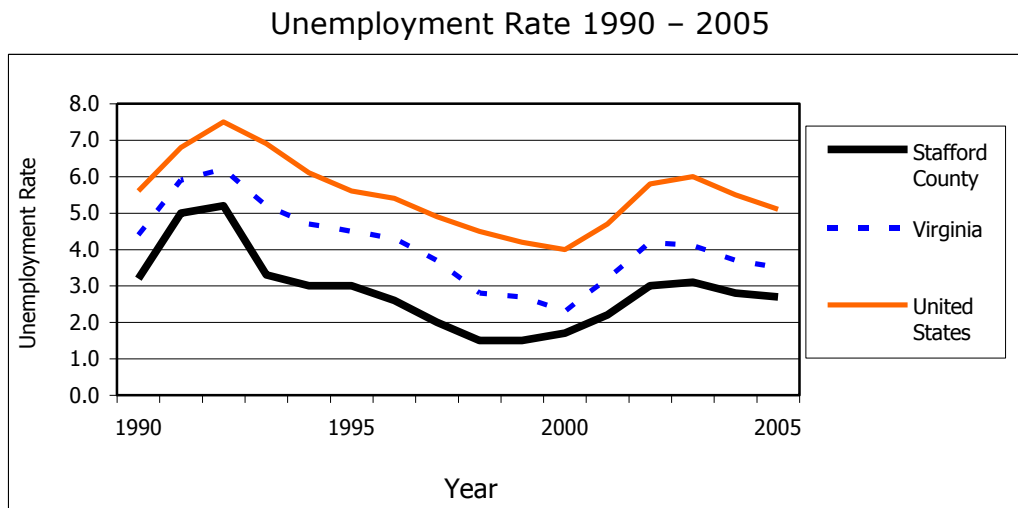
In 2000, Stafford County had a higher percentage (76%) of its residents 16 years of age or older in the labor force than all comparison areas except Prince William County. The size of the labor force provides an indication of the availability of workers in the community for businesses seeking to relocate into the area.

Table 6.15 Labor Force Characteristics – 2000  
Stafford County, VA and Comparison Areas

|                                   | <b>Stafford County</b> | <b>Fauquier County</b> | <b>King George County</b> | <b>Prince William County</b> | <b>Spotsylvania County</b> | <b>City of Fredericksburg</b> | <b>State of Virginia</b> |
|-----------------------------------|------------------------|------------------------|---------------------------|------------------------------|----------------------------|-------------------------------|--------------------------|
| Total                             | 66,359                 | 42,007                 | 12,632                    | 204,002                      | 66,138                     | 16,157                        | 5,529,980                |
| In labor Force                    | 50,424                 | 29,446                 | 8,723                     | 157,254                      | 47,747                     | 10,906                        | 3,694,663                |
| Unemployed                        | 1,387                  | 745                    | 345                       | 4,460                        | 1,501                      | 1,035                         | 151,125                  |
| Percent in Labor Force            | 76.0%                  | 70.1%                  | 69.1%                     | 77.1%                        | 72.2%                      | 67.5%                         | 66.8%                    |
| Percent in Labor Force Unemployed | 2.8%                   | 2.5%                   | 4.0%                      | 2.8%                         | 3.1%                       | 9.5%                          | 4.1%                     |

Source: US Bureau of Census and design based planning, inc.

The unemployment rate is an indicator of the level of employment in the area. The graph that follows shows that between 1990 and 2005, Stafford County has consistently had a lower unemployment rate than both the State and Nation as a whole. Stafford County's unemployment rate has been 3% or less since 1994.



Source: US Department of Labor – Local Area Unemployment Statistics – 2005

6.4.2 At-Place Employment

In 2000, the primary employment sector in Stafford County was public administration (16%). Stafford County had a higher percentage of jobs in this employment sector than all comparison communities except King George County (21%). Other important employment sectors for Stafford County were retail trade (11%), construction (10%), and health care and social assistance (9%). The primary employment sectors within the State as a whole were retail trade (11%), manufacturing (11%), and health care and social assistance (10%).

Table 6.16 Industries of Employment – 2000  
Stafford County, VA and Comparison Areas

|  | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|--|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| Agriculture, forestry, fishing and hunting, and mining:  | 0.3%            | 4.0%            | 2.0%               | 0.3%                  | 0.7%                | 0.3%                   | 1.3%              |
| Construction   | 10.0%           | 11.5%           | 10.3%              | 8.9%                  | 9.6%                | 6.4%                   | 7.3%              |
| Manufacturing  | 4.6%            | 6.3%            | 6.9%               | 4.7%                  | 5.7%                | 4.8%                   | 11.3%             |
| Wholesale trade  | 2.7%            | 3.4%            | 2.5%               | 2.2%                  | 3.8%                | 3.1%                   | 2.7%              |
| Retail trade   | 11.3%           | 11.1%           | 11.7%              | 12.0%                 | 13.1%               | 13.2%                  | 11.4%             |
| Transportation and warehousing                           | 4.2%            | 4.1%            | 3.8%               | 4.7%                  | 4.8%                | 2.1%                   | 3.8%              |
| Utilities  | 0.8%            | 0.8%            | 1.4%               | 0.8%                  | 1.9%                | 0.5%                   | 0.8%              |
| Information  | 3.5%            | 5.4%            | 1.9%               | 5.1%                  | 2.6%                | 2.7%                   | 3.8%              |
| Finance and insurance                                    | 5.0%            | 4.4%            | 3.4%               | 3.7%                  | 7.0%                | 7.2%                   | 4.8%              |
| Real estate and rental and leasing                       | 1.9%            | 2.5%            | 2.3%               | 1.9%                  | 1.5%                | 1.9%                   | 1.8%              |
| Professional, scientific, and technical services         | 8.5%            | 9.6%            | 9.6%               | 11.3%                 | 6.9%                | 8.7%                   | 8.3%              |
| Management of companies and enterprises                  | 0.0%            | 0.0%            | 0.1%               | 0.0%                  | 0.0%                | 0.0%                   | 0.0%              |
| Administrative and support and waste management services | 3.2%            | 2.9%            | 3.2%               | 3.9%                  | 3.0%                | 3.5%                   | 3.3%              |
| Educational services                                     | 8.1%            | 7.7%            | 5.3%               | 6.9%                  | 7.7%                | 12.6%                  | 8.6%              |
| Health care and social assistance                        | 8.6%            | 8.2%            | 6.4%               | 8.6%                  | 7.9%                | 9.2%                   | 9.7%              |
| Arts, entertainment, and recreation                      | 1.6%            | 2.0%            | 0.8%               | 1.3%                  | 1.4%                | 2.4%                   | 1.5%              |
| Accommodation and food services                          | 4.7%            | 3.4%            | 3.8%               | 4.9%                  | 5.6%                | 8.7%                   | 5.7%              |
| Other services (except public administration)            | 5.3%            | 5.1%            | 3.5%               | 5.4%                  | 5.0%                | 4.2%                   | 5.4%              |
| Public administration                                    | 15.5%           | 7.6%            | 21.3%              | 13.2%                 | 11.8%               | 8.4%                   | 8.3%              |

Source: US Census and design based planning, inc.

The highest paying employment sectors in 2004 were management of companies and enterprises (\$82,539), utilities (\$73,040), and finance and insurance (\$73,010), based on national average salaries generated by the US

Department of Commerce, Bureau of Economic Analysis. The lowest paying industries of employment were accommodation and food services (\$19,934), agriculture, forestry, fishing and hunting (\$26,371) and retail trade (\$28,216). Employment sectors important to Stafford County had the following average salaries: public administration \$46,941; retail trade \$28,216; construction \$41,945; and health care and social assistance \$40,328.

### Occupations of Stafford County Residents

In 2000, the predominant occupation types for Stafford County residents, regardless of their work location, were professional and related occupations (24%), management, business and financial occupations (17%) and office and administrative support (15%). A similar pattern was noted among comparison areas.

Table 6.17 Occupations – 2000  
Stafford County, VA and Comparison Areas

|  | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|--|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| Management, business, and financial operations occupations | 16.9%           | 18.5%           | 10.8%              | 18.0%                 | 14.7%               | 11.7%                  | 15.5%             |
| Professional and related occupations                       | 24.1%           | 21.0%           | 27.2%              | 23.2%                 | 20.2%               | 25.6%                  | 22.7%             |
| Healthcare support occupations                             | 1.1%            | 1.0%            | 1.4%               | 1.1%                  | 1.2%                | 1.5%                   | 1.6%              |
| Protective service occupations                             | 3.9%            | 2.2%            | 2.4%               | 3.4%                  | 3.1%                | 2.5%                   | 2.1%              |
| Food preparation and serving related occupations           | 3.6%            | 3.1%            | 3.6%               | 3.5%                  | 4.1%                | 6.7%                   | 4.3%              |
| Building and grounds cleaning and maintenance occupations  | 2.0%            | 3.1%            | 3.1%               | 2.4%                  | 2.6%                | 3.8%                   | 3.0%              |
| Personal care and service occupations                      | 2.7%            | 3.5%            | 1.9%               | 3.0%                  | 2.4%                | 3.0%                   | 2.7%              |
| Sales and related occupations                              | 10.3%           | 10.6%           | 9.2%               | 10.2%                 | 11.6%               | 12.8%                  | 10.5%             |
| Office and administrative support occupations              | 15.4%           | 14.8%           | 15.2%              | 17.5%                 | 15.9%               | 14.0%                  | 14.9%             |
| Farming, fishing, and forestry occupations                 | 0.1%            | 1.3%            | 0.9%               | 0.1%                  | 0.2%                | 0.1%                   | 0.5%              |
| Construction and extraction occupations                    | 7.1%            | 7.8%            | 7.3%               | 6.1%                  | 6.7%                | 5.8%                   | 5.8%              |
| Installation, maintenance, and repair occupations          | 4.6%            | 4.7%            | 4.1%               | 4.1%                  | 5.2%                | 3.0%                   | 3.9%              |
| Production occupations                                     | 3.0%            | 3.6%            | 5.3%               | 3.0%                  | 5.0%                | 4.3%                   | 7.0%              |
| Transportation and material moving occupations             | 5.0%            | 4.7%            | 7.8%               | 4.2%                  | 7.2%                | 5.2%                   | 5.5%              |

Source: US Census and design based planning, inc

6.4.3 Resident Income

Per capita and median household incomes are two measures of a community’s wealth. Per capita income better reflects the wealth of the community while median household income better reflects the distribution of income within the community. Per capita income is determined by dividing the total income of residents by the population. The median household income is the level at which the number of households with higher incomes is equal to those with less.

In 1999, Stafford County had a median household income of \$66,809 and a per capita income of \$24,762. Among comparison areas, Stafford County had the highest median income but Fauquier County (\$28,757) and Prince William County (\$25,641) had higher per capita incomes. Stafford County had the lowest poverty rate (3.5%) among all comparison areas and the City of Fredericksburg had the highest (15.5%) in 1999.

Table 6.18 Income Characteristics – 1999  
Stafford County, VA and Comparison Areas

| Household Income                       | Stafford County | Fauquier County | King George County | Prince William County | Spotsylvania County | City of Fredericksburg | State of Virginia |
|--|-----------------|-----------------|--------------------|-----------------------|---------------------|------------------------|-------------------|
| Less than \$25,000                     | 10.5%           | 14.5%           | 19.3%              | 10.0%                 | 14.7%               | 34.4%                  | 24.6%             |
| \$25,000 to \$49,999                   | 22.2%           | 23.5%           | 30.9%              | 23.6%                 | 26.7%               | 31.4%                  | 28.6%             |
| \$50,000 to \$74,999                   | 25.7%           | 23.5%           | 22.6%              | 24.6%                 | 26.4%               | 17.1%                  | 20.3%             |
| \$75,000 to \$99,999                   | 20.7%           | 14.6%           | 15.3%              | 18.2%                 | 17.1%               | 7.0%                   | 11.4%             |
| \$100,000 to \$149,999                 | 15.5%           | 15.2%           | 8.5%               | 17.0%                 | 11.4%               | 5.6%                   | 9.4%              |
| \$150,000 to \$199,999                 | 3.4%            | 4.2%            | 2.0%               | 4.4%                  | 2.2%                | 2.3%                   | 3.0%              |
| \$200,000 or more                      | 2.0%            | 4.4%            | 1.5%               | 2.2%                  | 1.6%                | 2.2%                   | 2.7%              |
| <b>Median Household Income in 1999</b> | \$66,809        | \$61,999        | \$49,882           | \$65,960              | \$57,525            | \$34,585               | \$46,677          |
| <b>Per Capita Income in 1999</b>       | \$24,762        | \$28,757        | \$21,562           | \$25,641              | \$22,536            | \$21,527               | \$23,975          |
| <b>Percent Below Poverty</b>           | 3.5%            | 5.4%            | 5.6%               | 4.4%                  | 4.7%                | 15.5%                  | 9.6%              |

Source: US Census Bureau and design based planning, inc.

According to the US Census Bureau, Stafford County’s median household income in 2003 was \$75,456 compared to \$50,028 within the State as a whole.

#### 6.4.4 Business Activity

The number of businesses in Stafford County grew by 38% between 2000 and 2005, from 1,394 to 1,928, according to statistics provided by the Stafford County Department of Economic Development. Between March 2000 and March 2005, 6,336 new jobs were created, a 27% increase. During the same time period, the State's rate of new job creation was 2% annually compared to the County's rate of 5%.

Table 6.19 Major Private Sector Employers - 2005  
Stafford County, VA

| Firm                                     | Type                             | Number of Employees |
|--|----------------------------------|---------------------|
| Anteon Corporation                       | Government Technology Services   | 91                  |
| Applied Ordnance Technology              | Defense Engineering Support      | 120                 |
| BAE Systems                              | Weapon Systems                   | 200                 |
| Battelle                                 | Research & Development           | 130                 |
| Coca Cola Bottling Company               | Sales and Distribution           | 110                 |
| Dominion Virginia Power                  | Electricity                      | 152                 |
| Federal Express & Federal Express Ground | Delivery Service                 | 95                  |
| Fredericksburg Auto Auction              | Dealer Auction                   | 175FT/400 PT        |
| GEICO Insurance                          | Regional Headquarters            | 3,900               |
| Hilldrup United Moving and Storage       | United Van Lines                 | 200                 |
| Intuit, Inc.                             | Computer Services                | 625                 |
| Lifecare                                 | Medical Transports               | 250                 |
| McLane Mid-Atlantic                      | Retail Distribution              | 850                 |
| MTC Services Corporation                 | Defense Research & Development   | 170                 |
| Northrop Grumman                         | Information Technology/Logistics | 300                 |

Source: Stafford County Economic Development

#### 6.4.5 Quantico Marine Corps Base

The Quantico Marine Corps Base is home to the Marine Corps Combat Development Command and the Presidential Helicopter Squadron. Quantico occupies 32,753 acres in Stafford County. Over 6,000 Marines are stationed at the base and most live with their families in the surrounding area. 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 2011 as a result of actions Congress took during its most recent round of Base Realignment and Closure (BRAC) activities.

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.

### 6.4.6 *Agriculture*

Although agriculture's economic role has been diminished in the County, it is still a defining characteristic of the area. According to the 2007 USDA Census of Agriculture, the most recent year for which information was available, Stafford County had 233 farms in operation that occupied 19,816 acres of land. The average farm size was 85 acres and the market value of production was \$2,798,000. Each of these statistics showed an increase between 1997 and 2002. In comparison with the last census in 2002, the number of farms in operation decreased from 236, the number of acres being farmed decreased from 26,128, the average farm size decreased from 111 acres and the market value of production saw a slight increase from \$2,485,000.

### 6.4.7 *Comprehensive Economic Strategic Plan*

The Stafford Department of Economic Development and Tourism engaged a consultant in 2006 to assist in drafting the Comprehensive Economic Development Plan. The purpose of the Plan is four-fold:

- Assist the County in attracting new businesses and industries to aid in community growth
- Develop employment opportunities in Stafford for County residents
- Diversify the tax base
- Enhance Stafford's quality of life.

The Plan included 51 recommendations that are sustainable because they promote consistent and long-term growth, and strategic, because they are designed to reach the County's long-term objectives. Recommendations were organized into the following economic areas:

- Marketing
- Interdepartmental Cooperation
- Community Communication
- Tourism
- Development Sites
- Business Retention Efforts
- Business Recruitment Efforts
- Process

The Plan includes a review of existing economic development efforts, a review of current economic conditions and an assessment of the forces that shape the economy of Stafford now. These include an assessment of the large – and growing – impact of the military on Stafford from Quantico Marine Corps Base and also from Fort A.P. Hill in Caroline County, and Dahlgren. Additionally, the

Plan recognizes defense contracting among private sector players as an important and growing influence on Stafford County. An equally important and growing sector is relocation of Federal employees as new buildings meeting post-9/11 building standards are constructed farther and farther from Washington, D.C.

An analysis of the potential private sector development efforts found Stafford should focus on development of the wholesale trade and transportation, and warehouse industries. Distribution center locations are central to a company's overall success as distribution center costs can be as much as 60 percent of a company's total distribution expense. Stafford's location could be strategic for companies including those currently located in Northern Virginia. The Plan acknowledges companies are moving out of the northeast because of delays caused by traffic jams. However, it does not note the traffic problems associated with I-95 in Stafford.

The Plan's analysis of compensation finds that workers in Stafford are generally compensated at a lower rate than workers in Virginia and the nation as a whole. Stafford workers commute from the County to higher-paying jobs elsewhere to support lifestyles they earn with median incomes 43 percent higher than the State median in 2000 and 59 percent higher than that of the Nation.

High growth employment sectors in 2000 to 2003 developing within Stafford according to a shift-share analysis executed for the Plan include professional, scientific and technical services and administration, support, waste management and remediation services. Other growth areas include construction, wholesale and retail trade, transportation and warehousing, educational services and arts, entertainment and recreation. Manufacturing suffered jobs losses, as did management of companies and enterprises, although that sector's employment base is relatively small to begin with.

The shift-share and cluster analysis found the following industries "of note", showing potential for employment growth:

- Finance and Insurance
- Professional Business or Technology Firms
- Wholesale Trade
- Construction
- Arts Entertainment and Recreation (although tempered by its lower-paying job status)

Four opportunity sites are identified by the Plan: 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. The area is now the focus of concentrated high-quality growth.



Similarly, the Courthouse area, which is the nerve center of Stafford County but never developed as a downtown, is on the verge of explosive growth. This is evident with the hospital development, as well as continued expansion of the County's headquarters including the new Public Safety Building and Fire and Rescue Station under development. Both the Economic Development Plan and the public input for this Comprehensive Plan identified the Courthouse area as a location where local residents would like to see higher density, pedestrian-friendly growth.

### 6.4.8 Findings

- Stafford County has had a significantly lower unemployment rate than the State and the Nation for over a decade
- In 2000, the primary employment sector for residents of Stafford County was education, health and social services
- The most common occupation type for County residents in 2000 was professional and related occupations at 24% of the workforce
- Stafford County had the highest median income and lowest poverty rate among comparison areas in 1999
- Between 2000 and 2005, the number of businesses grew by 38% and new jobs increased by 27% in Stafford County
- Job creation occurred at a faster rate in Stafford County than the State as a whole from 2000 to 2005
- The County's annual revenues and expenditures have grown in line with its population
- The County's Comprehensive Economic Development Plan identified a series of 51 recommendations aimed at increasing the County's economic competitiveness, increasing employment opportunities and diversifying the local economy
- Boswell's Corner, the Courthouse area, Historic Falmouth, and the Southern Gateway are special planning areas



## 6.5 Historic and Cultural Resources

### 6.5.1 A Brief History of Stafford County

Stafford County was established in 1664 and originally encompassed most of northern Virginia, including the areas which later became the Counties of Arlington, Fairfax and Prince William and the City of Alexandria.

Stafford County's prehistory is documented with fossil remains of small sea creatures that can be found along the rivers and tributaries. Artifacts identified through archaeological study tell us that prehistoric man occupied Stafford County from the Paleo-Indian Period (ca. 10,000-8,000 B.C.) through the Archaic Period (ca. 8,000-500 B.C.), during which people lived in seasonal, nomadic groups, and the Woodland Period (ca. 500 B.C.- A.D.1600), which is characterized by the establishment of permanent settlements and an emphasis on agricultural practices.

In 1608, John Smith mapped the major rivers, tributaries, and Native American settlements of the Chesapeake Bay area, including substantial portions of Stafford County. Powhatan, chief of the Potowomeks, and his daughter Pocahontas, were associated with these settlements, which included the large village of Potowomek, located at what is now Marlborough Point.

Stafford County has strong connections to events that shaped our nation's history. Rich arable land and early colonial industries, such as iron manufacturing and quarrying of sandstone and granite, attracted important families, such as the Brents, Carters, Masons, Fitzhughs, Mercers, and Washingtons. During the Revolutionary War, James Hunter's Iron Works contributed significantly to earning our freedom from British rule by supplying weapons and implements to the Continental Army and Navy.



Falmouth, founded on the north side of the Rappahannock River, was a prominent port town throughout the 18<sup>th</sup> century and the first quarter of the 19<sup>th</sup> century. It was the terminus for goods, including tobacco and flour, transported east from Warrenton and shipped to England in exchange for a variety of products. Enslaved Africans were also shipped to Falmouth where slave auctions were held.



Like other port towns of the colonial period, Falmouth attracted Scottish entrepreneurs, such as Basil and Samuel Gordon. The Gordons established a thriving marketing industry. The town also supported a number of water mills that flourished mostly due to the transition from tobacco cultivation to grain.

Stafford County residents rallied to defend the country during the War of 1812 by establishing the 45<sup>th</sup> Virginia Militia Regiment, which defended both Stafford and Westmoreland Counties. British troops rampaged through areas of the County en route to Washington, D.C.

In the first half of the 19<sup>th</sup> century, Stafford County experienced the rise of the railroad. In 1834, the Richmond, Fredericksburg and Potomac Railroad opened its first segment, connecting Fredericksburg with Richmond. Then in 1842, the railway was extended north to Aquia Landing and eventually to Washington, D.C.

Situated halfway between the Union and Confederate capitals, Stafford County became a crossroads of military activity during the Civil War. The federal forces arrived en masse in the latter part of 1862. During the Fredericksburg and Chancellorsville campaigns, November 1862 through June 1863, Stafford County was occupied by more than 100,000 troops. The effect of the Federal Army's presence on the Stafford County landscape and economy was devastating. The army denuded the County of its trees and fences, agricultural fields were trampled and neglected, and foraging troops

## The People and the Place

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“liberated” food and other essentials from the civilian population. Four years of warfare left Stafford County barren and ravaged. The effects of the Civil War remained visible on the landscape into the 20<sup>th</sup> century.



After the Civil War, Stafford County struggled to regain its former economic stability. The agricultural practices of Stafford at this time were characterized by a transition from grain crops to dairying and market gardening. Large family farms were still present, but several were subdivided—many producing only enough to sustain the immediate family and their livestock. This period also saw the rise of the fishing industry in Stafford County.

From the early 20<sup>th</sup> century through the end of World War II, Stafford County witnessed growth with the construction of U.S. Highway 1, expansion of Quantico Marine Corps Base to the north, and establishment of Fort A. P. Hill to the south and Dahlgren Naval Base to the east. With the rapid expansion of the Washington, D. C. metropolitan area and the construction of the Federal Interstate Highway System (I-95) in the late 1960s, Stafford County witnessed the creation of many suburban residential communities and commercial developments.

Stafford’s long agricultural heritage is now being offset by an increasing emphasis on commercial enterprise. Stafford is now faced with issues of growth, conservation of natural and heritage resources, and maintaining a sense of community and place.

### 6.5.2 *Known Heritage Resources*

Stafford County's heritage resources are identified and evaluated through several mechanisms, including the National Register of Historic Places Program, the Virginia Landmarks Register Program, the Stafford County Historic Resource Overlay District designation, the National Historic Landmarks Program, and the Stafford County Cultural Resource Inventory designation.

The National Register of Historic Places, which is administered by the National Park Service, is the nation's official list of cultural resources worthy of preservation. Stafford County currently has 14 listings in the National Register of Historic Places, but several other properties have been determined eligible for this prestigious listing.



#### **Aquia Episcopal Church, 1751-1755**

Listed on the National Register and the Virginia Landmarks Register, and designated as a Stafford County Historic Resource Overlay District and a National Historic Landmark, Aquia Episcopal Church is one of Stafford County's most significant historic properties.

The Virginia Landmarks Register, administered by the Virginia Department of Historic Places, is the state's official list of properties that are significant to Virginia's history. There are currently 15 Stafford County resources listed in the Virginia Landmarks Register.

The Stafford County Board of Supervisors designates historic places as Stafford County Historic Resource Overlay Districts by ordinance. Properties included within historic overlays must have public value and warrant conservation and preservation. There are now 23 Stafford County Historic Resource Overlay Districts.

The National Historic Landmark Program designates nationally significant historic places that possess exceptional value or quality in illustrating or interpreting the heritage of the United States. Today, fewer than 2,500 historic places in the United States bear this distinction. While there are many

important historic places in the United States, only a small number qualify for the National Historic Landmark Program. Three Stafford County sites—Belmont, Ferry Farm, and the Aquia Episcopal Church—have been designated as National Historic Landmarks.

### 6.5.3 Stafford County Cultural Resource Inventory

As a Certified Local Government, Stafford County is required to periodically update and maintain an inventory of known cultural resources. The Department of Planning & Zoning maintains the Stafford County Cultural Resource Inventory. As of May 1, 2008, over 1,500 resources were included in the inventory. Resources include historic buildings, archaeological sites, and over 430 family and community cemeteries.

### 6.5.4 Significant Cultural Resources

The table below lists some of Stafford County’s most significant cultural resources. Most are currently listed in the National Register of Historic Places or Virginia Landmarks Register or designated as a National Historic Landmark or Stafford County Historic Resource Overlay District. Properties recorded with no distinction have been determined eligible for the National Register of Historic Places. As more intensive survey continues in the County, additional resources may be determined worthy of listing.

Table 6.20 Significant Heritage Resources;  
Stafford County, VA

| Property  | Location                       | National Register | Virginia Landmark | Stafford County Historic Resource Overlay District | National Historic Landmark | Eligible for National Register but not Currently Listed |
|---|--------------------------------|-------------------|-------------------|--|----------------------------|---|
| Accokeek Furnace Site   | Address Restricted             | X                 | X                 | X  |                            |   |
| Aquia Episcopal Church  | 3938 Jefferson Davis Highway   | X                 | X                 | X  | X                          |   |
| Belmont (Gari Melcher Home)   | 224 Washington Street          | X                 | X                 | X  | X                          |   |
| Bloomington House Site & Adie Cemetery  | Patowomack Park                |                   |                   |  |                            | X   |
| Aquia Landing<br>Aquia Landing Battlefield  | Aquia Creek & Potomac River    |                   |                   |  |                            | X   |
| Redoubt #2 (Brockman’s Fort or Fort No Name)  | 15 Old Fort Road               | X                 | X                 | X  |                            |   |
| Brent Cemetery  | Address Restricted             |                   |                   | X  |                            | X   |
| Carlton   | 501 Melchers Drive             | X                 | X                 | X  |                            |   |
| Chatham (within Fredericksburg-Spotsylvania National Military Park)   | 120 Chatham Lane               | X                 | X                 |  |                            |   |
| Clearview   | 22 Strawberry Lane             | X                 | X                 | X  |                            |   |
| Civil War fortifications (4), encampments (2), corduroy road, 18 <sup>th</sup> -19 <sup>th</sup> century quarries (2), sandstone bridge abutments & roadbed (Old Potomac Church Road) | Rappahannock Regional Landfill |                   |                   |  |                            | X   |
| Clifton Chapel  | 60 Clifton Chapel Lane         |                   |                   |  |                            | X   |
| Crucifix Monument   | 3140 Jefferson Davis Highway   |                   |                   | X  |                            | X   |

| Property  | Location   | National Register | Virginia Landmark | Stafford County Historic Resource Overlay District | National Historic Landmark | Eligible for National Register but not Currently Listed |
|---|--|-------------------|-------------------|--|----------------------------|---|
| Ebenezer Methodist Church   | 168 Onville Road                                     |                   |                   | X  |                            | X   |
| Falmouth Historic District  | Hwy 1 & Hwy 17                                       | X                 | X                 | X  |                            |   |
| Ferry Farm  | 240 Kings Highway                                    | X                 | X                 | X  | X                          |   |
| Fort McLean   | End of Courthouse Road. 40-56B                       |                   |                   | X  |                            | X   |
| Government Island   | Aquia Creek & Austin Run                             | X                 | X                 | X  |                            |   |
| H.H. Poole High School (Rowser Building)  | 1739 Jefferson Davis Highway                         |                   |                   |  |                            | X   |
| Hartwood Manor  | 335 Hartwood Road                                    |                   |                   | X  |                            | X   |
| Hartwood Presbyterian Church  | 50 Hartwood Road                                     | X                 | X                 | X  |                            |   |
| Hunter's Iron Works   | 138 Blaisdell Lane                                   | X                 | X                 |  |                            |   |
| Irvin House   | 1791 Warrenton Road                                  |                   |                   |  |                            | X   |
| Little Whim   | 375 White Oak Road                                   |                   |                   | X  |                            | X   |
| Long Branch Mill Sites  | Long Branch down to Poplar Rd, West Stafford         |                   |                   |  |                            | X   |
| Marlborough Point Site (Town of Marlborough Archaeological Site)                                | Marlborough Point                                    | X                 | X                 | X  |                            |   |
| Moncure Conway House  | 305 King Street                                      | X                 | X                 | X  |                            |   |
| Mud March, Union 5 <sup>th</sup> Corps Advancement along River Road, Battle of Chancellorsville | Stafford & Spotsylvania Counties                     |                   | X                 |  |                            | X   |
| Norman-Towson Cemetery  | Quarry Road  |                   |                   |  |                            | X   |
| Potomac Church Site   | 1090 Brooke Road                                     | X                 | X                 |  |                            |   |
| Potomac Creek Site (Potowomek Indian Village)   | Address Restricted                                   | X                 | X                 |  |                            |   |
| Rappahannock River Historic Overlay District  | see historic overlay map                             |                   |                   | X  |                            | X   |
| Richland  | 945 Widewater Road                                   |                   |                   |  |                            | X   |
| Robertson-Towson House Site & Quarry  | Austin Ridge Subdivision, adjacent to community pool |                   |                   |  |                            | X   |
| Sherwood Forest   | 971 Kings Highway 59-71D, 59-71.                     |                   |                   |  |                            | X   |
| Smith-Forbes House  | 58 Westebe Lane                                      |                   |                   | X  |                            | X   |
| Stafford County Courthouse  | 2119 Jefferson Davis Highway                         |                   |                   | X  |                            |   |
| Stafford County High School (Stafford School Board Offices)                                     | 31 Stafford Avenue                                   |                   |                   |  |                            | X   |
| Thompson House  | 122 Cambridge Street                                 |                   |                   | X  |                            | X   |
| White Oak Museum (White Oak Elementary School)  | 985 White Oak Road                                   |                   |                   | X  |                            | X   |
| White Oak Primitive Baptist Church  | 8 Caisson Road                                       | X                 | X                 | X  |                            |   |

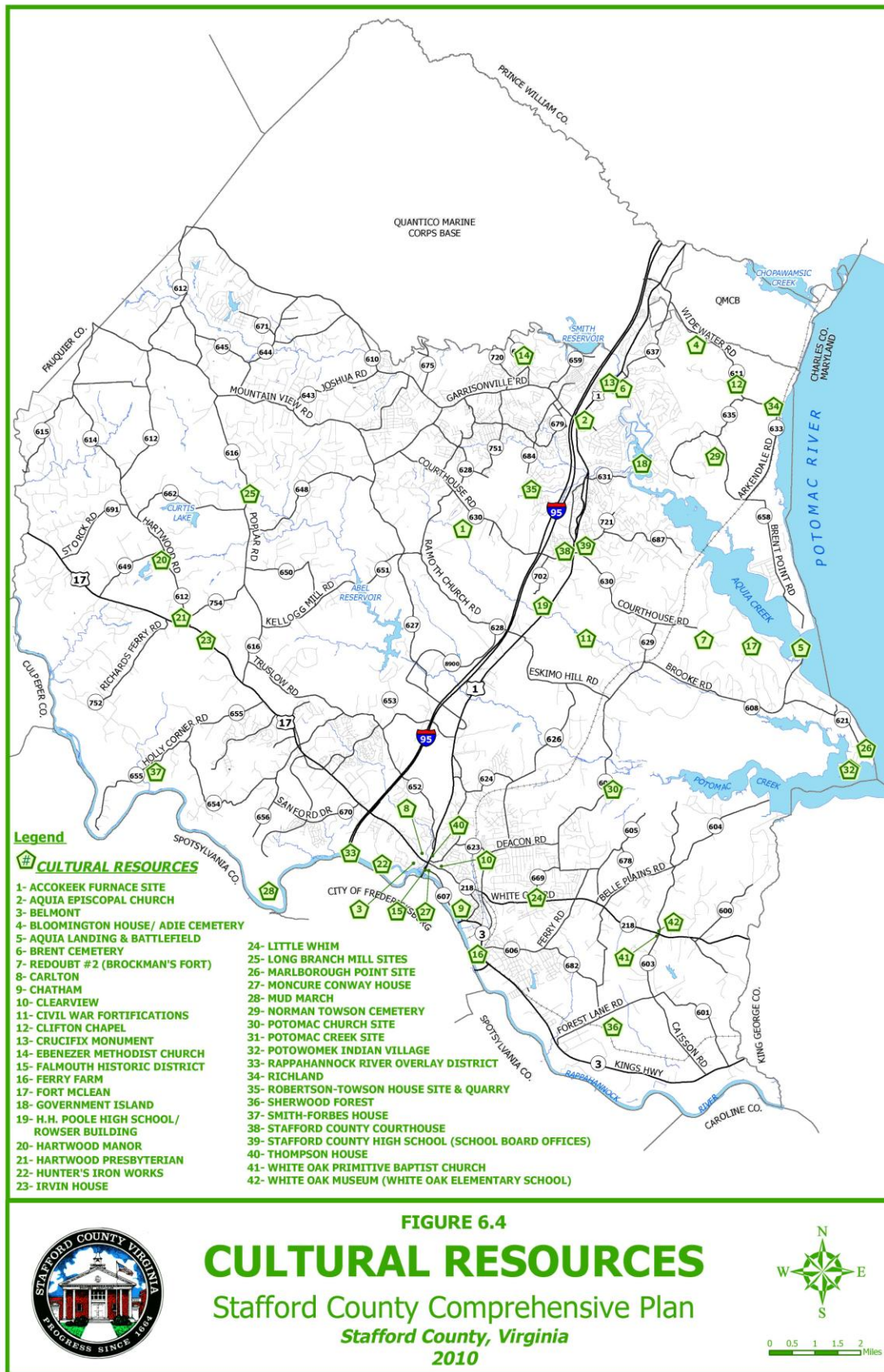
Source: Stafford County Department of Planning &amp; Zoning

\* A State Owned Resource



### 6.5.5 Findings

- A large number of historic and cultural resources are located in Stafford County
- The Cultural Resources Management Plan uses the land development process to identify and protect cultural resources
- Procedures for identification and protection of historic and cultural resources are recommended but not mandatory; the County's adoption of the Cemetery ordinance codifies these procedures for cemeteries. Adoption of a Historic Preservation Ordinance would further strengthen the protection of historic and cultural resources.



## 6.6 Community Facilities

The ability to provide adequate services help to shape a community and make it a desirable place to live. These services include public safety, education and cultural amenities, and waste management. This section explores the services that are provided in Stafford County. Several maps in this section identify the location of community services in the County.

**Community Facilities**

- Schools
- Law Enforcement
- Correctional Facilities
- Fire and Rescue
- Libraries
- Hospitals
- Waste Management

### 6.6.1 Public Schools

As Stafford County’s population has steadily increased, so too has its student enrollment figures. The average daily membership (ADM) for Stafford County Public Schools was 9,761 students in 1982, and has since climbed to 25,852 students for the 2009-10 school year. As of March 31, 2010, the Stafford School District had 11,324 elementary school students, 6,309 middle school students and 9,016 high school students. Although the rate of school enrollment increase has slowed within the last four years, the School Board projects that enrollments will continue to increase through 2015-16 to 27,917 students.

Currently the County operates 30 schools (17 elementary schools, 8 middle schools and 5 high schools). The table below provides basic data on each school and a map identifies their location in the County.

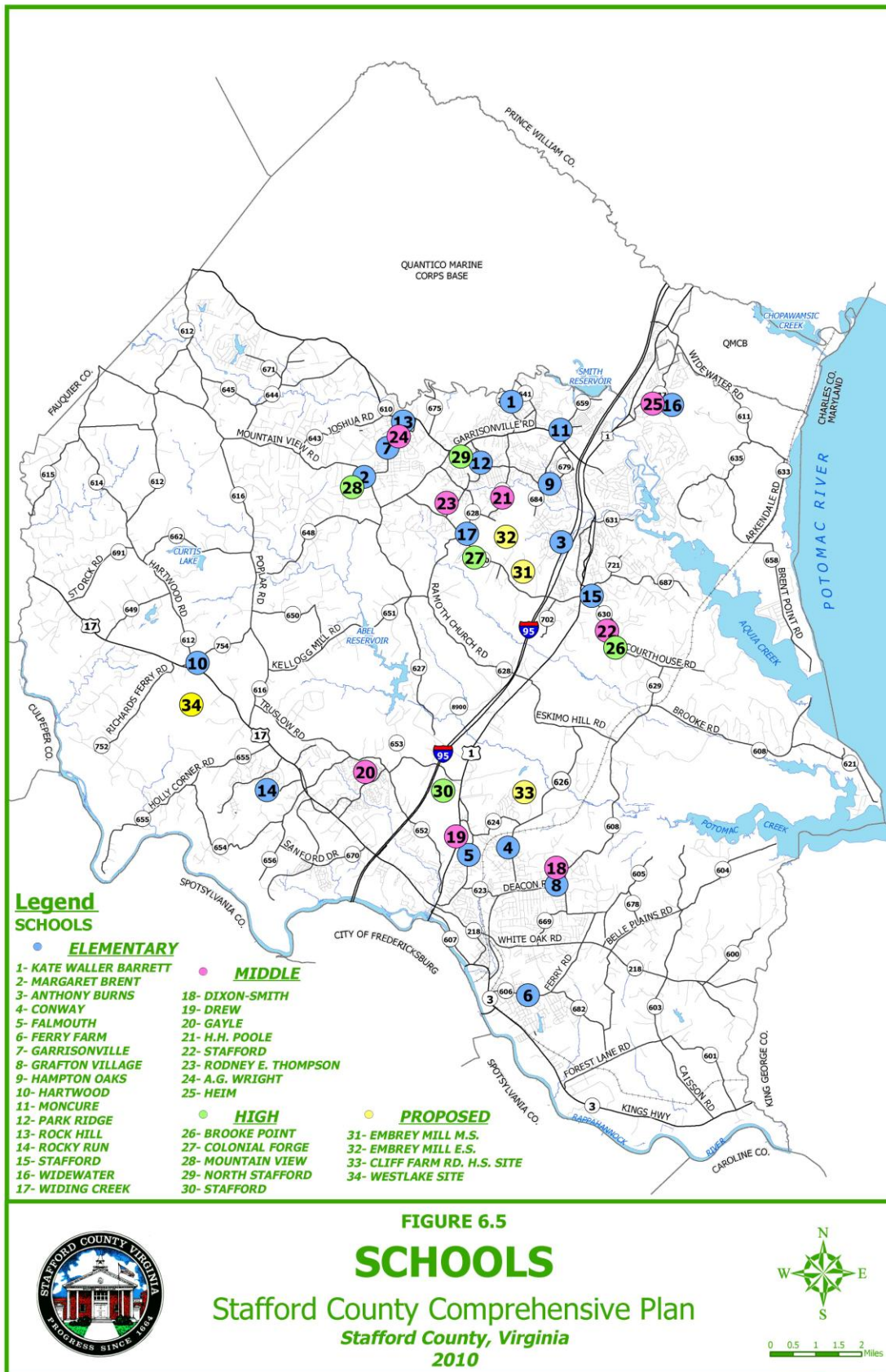
Table 6.21 Stafford County Public Schools

| School                                    | Location               | Average Daily Membership 2009-2010 | Operational Capacity | Construction Date                  |
|---|------------------------|------------------------------------|----------------------|------------------------------------|
| <b>Elementary Schools (Pre-K-Grade 5)</b> |                        |                                    |                      |                                    |
| Kate Waller Barrett                       | 150 Duffey Dr.         | 707                                | 950                  | 2002                               |
| Margaret Brent                            | 2125 Mountain View Rd. | 772                                | 950                  | 2004                               |
| Anthony Burns                             | 60 Gallery Rd.         | 756                                | 950                  | 2006                               |
| Conway                                    | 105 Primmer House Rd.  | 821                                | 950                  | 2006                               |
| Falmouth                                  | 1000 Forbes St.        | 556                                | 794                  | 1967; Addition -1997               |
| Ferry Farm                                | 20 Pendleton Rd.       | 539                                | 732                  | 1957; Additions - 1963, 1989, 1992 |
| Garrisonville                             | 100 Wood Dr.           | 548                                | 768                  | 1981; Addition- 1999               |

| School                             | Location                  | Average Daily Membership 2009-2010 | Operational Capacity | Construction Date                     |
|------------------------------------|---------------------------|------------------------------------|----------------------|---------------------------------------|
| Grafton Village                    | 501 Deacon Rd.            | 594                                | 754                  | 1967; Additions - 1977, 1996          |
| Hampton Oaks                       | 107 Northampton Blvd.     | 723                                | 950                  | 1992; Addition - 1996                 |
| Hartwood                           | 14 Shackelford's Well Rd. | 604                                | 649                  | 1963; Additions - 1966, 1989, 1993    |
| Anne E. Moncure                    | 75 Moncure Ln.            | 667                                | 754                  | 1966; Additions - 1973, 1997          |
| Park Ridge                         | 2000 Parkway Blvd.        | 644                                | 843                  | 1990; Addition - 1994                 |
| Rock Hill                          | 50 Wood Dr.               | 586                                | 843                  | 1989; Addition - 1994                 |
| Rocky Run                          | 95 Reservoir Rd.          | 854                                | 950                  | 2000                                  |
| Stafford                           | 1349 Courthouse Rd.       | 605                                | 794                  | 1968; Addition - 1996                 |
| Widewater                          | 101 Den Rich Rd.          | 627                                | 843                  | 1988; Addition - 1995                 |
| Winding Creek                      | 475 Winding Creek Rd.     | 721                                | 925                  | 1997                                  |
| <b>Middle Schools (Grades 6-8)</b> |                           |                                    |                      |                                       |
| Dixon-Smith                        | 503 Deacon Road           | 905                                | 1,100                | 2006                                  |
| Edward E. Drew                     | 501 Cambridge St.         | 423                                | 800                  | 1951; Additions - 1957, 1990 and 1998 |
| T. Benton Gayle                    | 100 Panther Drive         | 882                                | 1,100                | 2002                                  |
| Shirley C. Heim                    | 320 Telegraph Road        | 783                                | 1,100                | 2008                                  |
| H. H. Poole                        | 800 Eustace Rd.           | 913                                | 1,100                | 1995; Addition - 1998                 |
| Stafford Middle                    | 101 Spartan Dr.           | 511                                | 1,100                | 1991                                  |
| Rodney E. Thompson                 | 75 Walpole St.            | 1084                               | 1,100                | 2000                                  |
| A. G. Wright                       | 100 Wood Dr.              | 808                                | 920                  | 1981; Addition - 1999                 |
| <b>High Schools (Grades 9-12)</b>  |                           |                                    |                      |                                       |
| Brooke Point                       | 1700 Courthouse Rd.       | 1,631                              | 1,800                | 1993                                  |
| Colonial Forge                     | 550 Courthouse Rd.        | <b>2,018</b>                       | 1,800                | 1999                                  |
| Mountain View                      | 2135 Mountain View Rd.    | <b>1,842</b>                       | 1,800                | 2005                                  |
| North Stafford                     | 839 Garrisonville Rd.     | 1,667                              | 1,925                | 1981; Addition - 2003                 |
| Stafford                           | 33 Stafford Indian Ln.    | <b>1,858</b>                       | 1,800                | 1975; AIMIE Bldg -1981                |

Source: Stafford County Public Schools as of 6/10;

Enrollment figures in **bold** exceed operational capacity



In order to appropriately serve its growing student population, Stafford County has made a significant investment in public school facilities. Since 1986, the County has constructed 10 elementary schools, five middle schools and three high schools. The County has also replaced a middle school, and made additions and upgrades to all three levels of schools. Two new facilities opened for the 2006-07 school year: Anthony Burns Elementary School and Dixon-Smith Middle School. One facility opened for the 2008-09 school year: Shirley Heim Middle School.

The Stafford County Public Schools Capital Improvement Program (CIP) for fiscal years 2011 to 2016 includes construction of a replacement high school and a Career and Technical Facility, renovations at 5 elementary schools, expanded support facilities, and site improvements to existing facilities.

### Adult Education

Stafford County Public Schools also provide adult education courses at several middle and high school locations during the Spring and Fall. Courses are offered in the evenings and are generally 10 weeks in length. These low-cost courses cover topics such as computer concepts, home gardening, automotive maintenance, culinary basics, AutoCAD, wardrobe maintenance, home horticulture, and basic home repair and maintenance.

### *6.6.2 Law Enforcement*

The Stafford County Sheriff's Office provides countywide law enforcement services. Supplemental services are also provided to the Counties of Spotsylvania, Prince William, Fauquier, and King George and the City of Fredericksburg with whom the County has mutual aid agreements. The Sheriff's Office has a total of 221 employees that includes 148 sworn officers, 6 animal control personnel, 30 civilian personnel, and 37 emergency communication center personnel.

During 2005, the emergency communications center received 143,410 calls, of which 51% (73,390 calls) were calls for service to which an officer responded. Officers made 8,429 arrests in 2005. In 2004, a total of 150,011 calls were received and 73,390 of those (49%) were calls for service. Between 2004 and 2005, the total number of calls received decreased by 4.4% but the number of calls for service increased by 3.9%. Between 2000 and 2005, the number of total calls received increased by 6.4% and calls for service increased by 12.6%.

The Sheriff's Office headquarters are in the new Public Safety Building located on Courthouse Road adjacent to the Administration Complex. Two satellite buildings are rented to house Narcotic investigations, Policy & Strategic Planning, Professional Standards, and Crime Prevention. The Sheriff's Office occupies about 40,000 sq. ft of the public safety building, housing the Sheriff's operation, Emergency Communications, and Emergency Management

Services. This new facility is expected to meet the facility needs of the Sheriff's Office for a 20- to 25-year life period.

### 6.6.3 *Correctional Facilities*

The Rappahannock Regional Jail, located at 1745 Jefferson Davis Highway, serves the adult corrections needs of the Counties of Stafford, Spotsylvania, and King George, and the City of Fredericksburg. A new 264,000 square foot, state-of-the-art corrections facility was opened in June 2000 which has a 662-bed capacity that can expand to 1,200. The jail authority has applied for permission for this expansion.

The Rappahannock Juvenile Detention Center is an 80-bed, 59,000-square-foot facility located at 275 Wyche Road that opened in December 2000. The facility provides pre-dispositional and post-dispositional juvenile detention housing.

The Stafford Correctional Unit #21 located on Eskimo Hill Road is operated by the Commonwealth of Virginia and houses male inmates.

### 6.6.4 *Fire and Rescue*

The Fire and Rescue Department serves the entire County and is headquartered at the new Public Safety Building on Courthouse Road. The Department was established in 2005 as an "all hazards" agency that provides fire, rescue, basic and advanced life support emergency medical service, ambulance transportation and environmental hazard (Haz-Mat) response and mitigation. Other responsibilities of the Department include emergency management, explosive ordnance disposal, building plan review and fire code enforcement, fire and environmental crime investigation, and public education and preparedness. Mutual aid agreements exist with the Counties of Fauquier, King George, Prince William and Spotsylvania, as well as the Quantico Marine Base. In 2005, fire and rescue personnel responded to 19,651 emergency response calls; an increase of 5% from 2002 when the Department responded to 18,706 emergency calls.

The Fire and Rescue Department has a workforce of 60 career officers and 300 volunteers that operate from 14 fire and rescue stations, which are organized into three battalions. Each battalion includes 5 stations. Battalion 1 serves the northern portion of the County, Battalion 2 serves central Stafford, and Battalion 3 serves south Stafford. Seven stations are combined fire and rescue facilities; the remaining eight are stand alone fire or rescue stations. New facilities are designed and built as combination stations. Fire and Rescue Station 2, the newest station near the Courthouse, serves as a replacement station combining Fire 2 and Rescue 1 under one roof. The table that follows lists the stations and their locations.

Table 6.22 Fire and Rescue Stations, Stafford County, VA

| Station                            | Location               |
|------------------------------------|------------------------|
| Fire-Rescue Co. 1 – Falmouth       | 250 Butler Rd.         |
| Fire-Rescue Co. 3 – Widewater      | 749 Widewater Rd.      |
| Fire-Rescue Co. 5 – Brooke         | 222 Andrew Chapel Rd.  |
| Fire-Rescue Co. 6 – Hartwood       | 67 Hartwood Church Rd. |
| Fire-Rescue 9 – Aquia Harbour      | 1001 Washington Dr.    |
| Fire-Rescue Co. 10 – Potomac Hills | 729 Widewater Rd.      |
| Fire-Rescue Co. 12 - Berea         | Sebring Way            |
| Fire Co. 2 – Stafford              | 305 Jason Mooney Drive |
| Fire Co. 4 – Mountain View         | 924 Kellogg Mill Rd.   |
| Fire Co. 7 – White Oak             | 12 Newton Rd.          |
| Fire Co. 8 – Rock Hill             | 2133 Garrisonville Rd. |
| Rescue 1 – Stafford                | 305 Jason Mooney Drive |
| Rescue 4 – Mountain View           | 1268 Mountain View Rd. |
| Rescue 7 – White Oak               | 535 White Oak Rd.      |
| Rescue 8 – Rock Hill               | 1565 Garrisonville Rd. |

Source: Stafford County Fire and Rescue Department

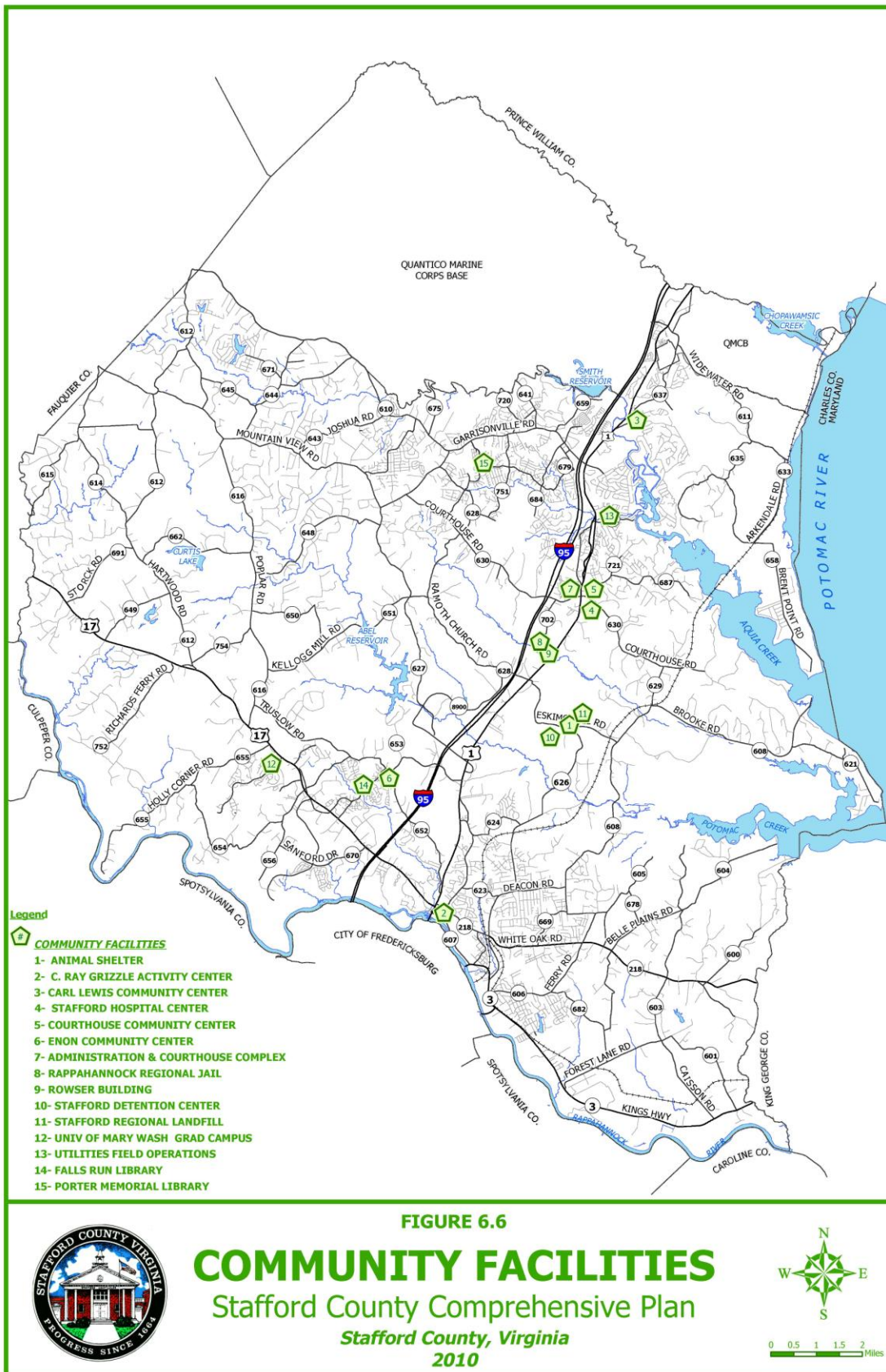
The Capital Improvements Program for fiscal years 2009 - 2013 identifies the need for two additional fire and rescue facilities: North County and Airport, as well as construction of a Fire and Rescue Training Center.

### 6.6.5 Hospitals

Stafford Hospital Center, the first hospital in Stafford County, opened in 2009 on a 70-acre site on the southeast side of U.S. 1 and Courthouse Road. The hospital is designed to hold up to 100 beds. The site presently includes one medical office building. The facility is operated by MediCorp, the parent company of Mary Washington Hospital.

The next closest facilities are Mary Washington Hospital about 9 miles from central Stafford in the City of Fredericksburg and Potomac Hospital about 16 miles from central Stafford in Woodbridge, VA.





### 6.6.6 Libraries

The John Musante Porter Branch of the Central Rappahannock Regional Library system is the only Library within the County and is located at 2001 Parkway Boulevard. The Central Rappahannock Regional Library system consists of seven different branches in the City of Fredericksburg and in Spotsylvania, Stafford, and Westmoreland counties.

The Porter Branch of the Central Rappahannock Regional Library is housed in a 23,000 square foot building that was constructed in 1992. This branch is open daily and houses a collection of 124,672 items. Other features include:

- Public access computers (15) with internet service
- An 80-seat theater that can be partitioned to make two smaller rooms and a 20-seat meeting room
- The Porter Book Club (meets monthly)
- The Atrium that features monthly art exhibits of local artists' works

In 2005, the Porter Branch had over 729,000 library visits and circulated over 2.8 million items.

A second library is under construction. The Falls Run Branch of the library system located at the intersection of Lyons Boulevard and Plantation Drive in the England Run North Community is scheduled to open in the fall of 2010.

### 6.6.7 Solid Waste

The Rappahannock Regional Solid Waste Management Board operates the landfill in Stafford County. Residents may deposit household garbage at no charge. Commercial refuse haulers serving residents have to pay to use the landfill. The landfill accepts newspaper, aluminum cans, glass, plastic, cardboard, steel can, oil and office paper for recycling. The landfill is located on 700 acres of land. The County is currently working with the Virginia Department of Environmental Quality to permit an 80-acre area for the landfill for future expansion – an estimated 40-year extension to the life of the facility. The landfill has other sections that could also accommodate the County's growing needs for solid waste disposal.

### 6.6.8 Virginia Cooperative Extension

Using a combination of paid and volunteer staff, the Virginia Cooperative Extension (VCE) provides research-based information to County residents in the fields of agriculture/horticulture, 4-H youth development, food, nutrition and health, and family and consumer sciences. Educational programs in Agriculture and Natural Resources programs help to sustain the profitability of agriculture and forestry production, while protecting and enhancing the quality of land and water resources. The Food, Nutrition and Health Program and the Smart Choices Nutrition Education Program improve the quality of life of residents by encouraging appropriate and safe food choices and improving

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health literacy. Through the 4-H program, youth aged 5-19 receive hands-on learning experiences and develop leadership skills.

During the 2005 Fiscal Year, the VCE served over 15,000 residents through contacts, volunteer opportunities, club membership and program participation. VCE volunteers donated over 5,500 hours, which represented a dollar value gained from volunteer service of \$109,241.

### 6.6.9 *Rappahannock Area Community Services*

The Rappahannock Area Community Services Board (RACSB) is a regional government agency that provides comprehensive services to individuals with mental health, mental retardation and substance abuse problems in Planning District 16 (including Stafford and Spotsylvania Counties). Established in 1970, the agency is managed by a board of 15-volunteer members who are appointed by member jurisdiction's local governing bodies. Two RACSB service sites are located in Stafford County: the Stafford Clinic and the Leeland Road Group Home.

### 6.6.10 *Findings*

- Significant investment has been made in the construction and maintenance of educational facilities to accommodate Stafford County's growing school population and additional facilities and improvements are planned
- The new Public Safety Building that houses the Sheriff's Office and Fire and Rescue Department should meet these agencies' needs over the next 20 to 25 year period.
- State of the art facilities for the Rappahannock Regional Jail and the Rappahannock Juvenile Detention Center were constructed in 2000
- Stafford County's Fire and Rescue Department is staffed by 60 career officers and approximately 300 volunteers
- A 100-bed hospital opened in 2009 near the Courthouse
- The John Musante Porter Library, which serves Stafford County, had over 729,000 library visits and circulated over 2.8 million items in 2005

## 6.7 Infrastructure

Adequate access to water, sewage disposal and electric and gas utilities is generally considered essential to the health and well being of residents. This section presents a discussion of infrastructure facilities that are available in Stafford County. A map is included to identify infrastructure locations in the County.

### 6.7.1 *Water and Sewer*

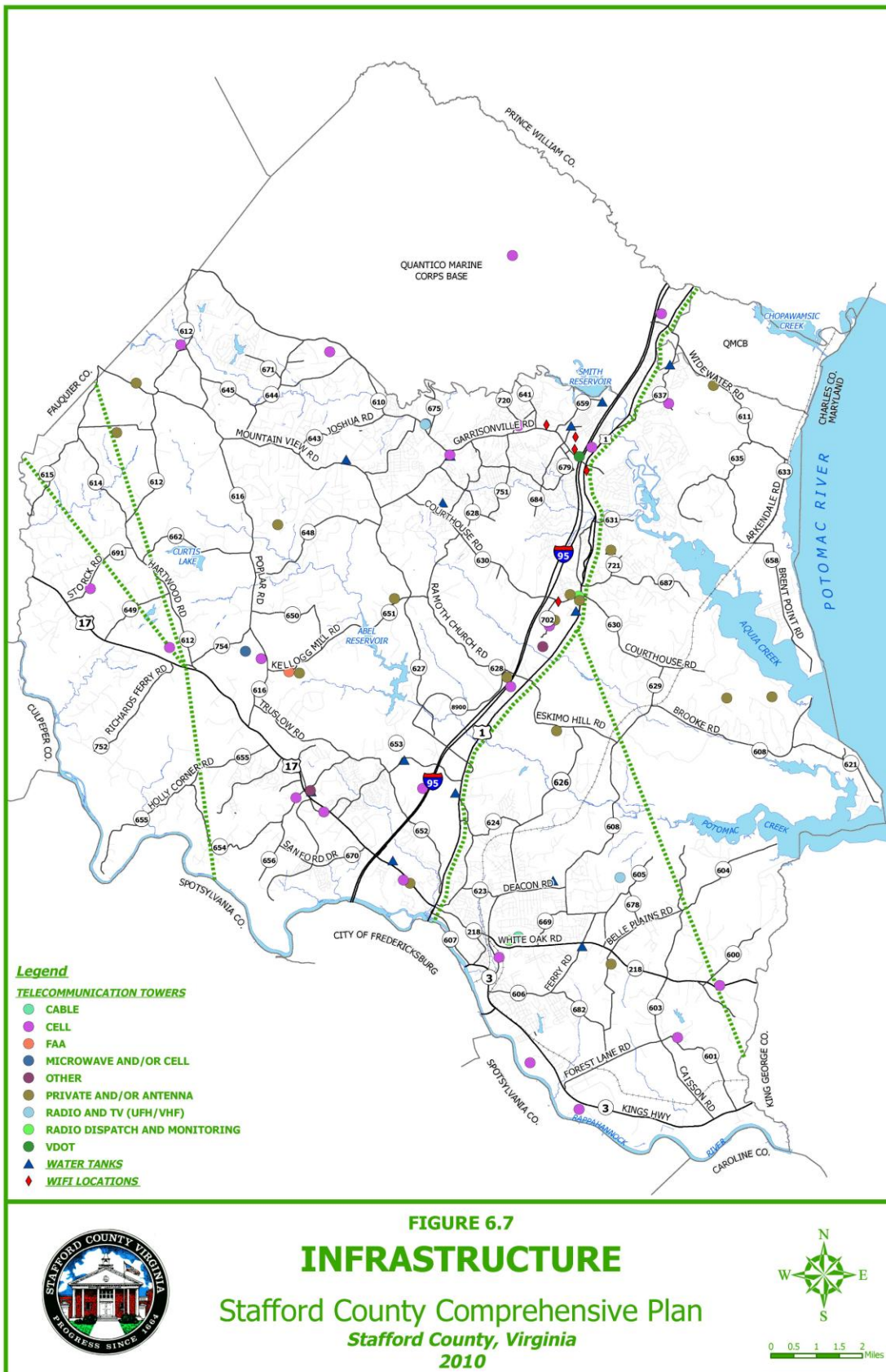
The Stafford County Department of Utilities (DOU), under the direction of the County Board of Supervisors, has provided public water and sewer services to many Stafford County residents for over two decades. During that time, the service area population and demand for services have more than quadrupled and continues to grow. The public utility customer base is currently increasing at an annual rate of 5%. The DOU provides services to over 25,000 residential customers and more than 700 non-residential customers. It operates as an enterprise fund that is separate from the County's General Fund and is funded solely by the revenues received from its customers.

#### **Infrastructure**

- Water and Sewer
- Stormwater Management
- Natural Gas
- Electric
- Telecommunications & Cable

Not all residents have access to public water and sewer services. The County only provides public water and sewer to the Urban Services Area (USA), which is the portion of the County that has been designated for residential, commercial and industrial development. The designation of USAs, which limit the location of sewer line expansion, serves to limit residential densities in rural areas. Outside the USAs, approximately 10,000 dwellings use private wells and septic tanks to meet their water and sewage disposal needs.

Public drinking water is obtained from two surface water reservoirs (Abel Lake and Smith Lake) and a third is under construction (Rocky Pen Run). Abel Lake Reservoir is located in central Stafford and Smith Lake Reservoir is located in North Stafford. The combined safe yield of these two reservoirs is about 13.8 million gallons a day (mgd). The County's annual average daily demand is 9.7 mgd and the peak 90-day average is 11.6 mgd.



Water treatment occurs at the Smith Lake Water Treatment Facility and the Abel Lake Water Treatment Facility. The Smith Lake facility supplies water to the northern region of Stafford, while Abel Lake supplies the southern region. The maximum daily capacity for the two facilities is 20 mgd. After treatment, the water from both facilities meets or exceeds Virginia Department of Health and the Federal Safe Drinking Water Act Amendments of 1986 standards. The DOU system also stores approximately 15.8 million gallons of water in two ground storage tanks, two standpipes and 10 elevated tanks. The system also includes five primary pumping stations, and six standby pumping stations.

Sewage treatment is provided at Little Falls Run Wastewater Treatment Facility and Aquia Wastewater Treatment Facility. They have permitted capacities of 4 mgd and 6.5 mgd, respectively. The Little Falls facility is located in the southeast part of the County and the Aquia facility is in the north. The wastewater collection and transmission system consists of approximately 383 miles of gravity sewers, 82 pump stations, and 53 miles of associated sewer force mains.

Several initiatives are planned, including the construction of the Rocky Pen Run Reservoir and Treatment Facility project, which has an estimated cost of \$77 million and a 2013 completion date. When completed, the Rocky Pen Run Reservoir will have a safe yield of 13.1 mgd. The new water treatment facility will be designed to have a capacity of 5-10 mgd by 2013. With the addition of these resources, the County anticipates being able to meet the needs of its residents in the USA to the year 2050.

### *6.7.2 Stormwater Management*

Stormwater Management is a mechanism for controlling water from rain or snowmelt that flows over the land surface and is not absorbed into the ground and urban and industrial stormwater that is discharged through conveyances, such as separate storm sewers, ditches, channels or other conveyances. The purpose of stormwater management is the mitigation of the adverse effects that land use changes and increased impervious land cover have on flooding and the aquatic environment. Adverse effects include downstream erosion, water quality degradation, and water channel flooding.

Stafford County's Stormwater Management Ordinance (Chapter 21.5 of the County Code) establishes minimum stormwater management requirements. All land development projects must comply with the requirements of this ordinance. Both the Stormwater Management Ordinance and the Zoning and Subdivision Ordinances encourage the use of Low Impact Development (LID). LID is an innovative stormwater management approach whose goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate and detain runoff close to its source.

Stafford County's stormwater infrastructure consists of more than 650 stormwater management facilities that fall into in the following general

## The People and the Place

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categories: ponds; miscellaneous; manufactured/underground; infiltration trench; and filtration. Roughly 60% of the stormwater BMPs being used in the County are a type of pond. Overall, about 40% of the County's BMPs were classified as being in "Good" condition, 30% in "Fair" condition, and 15% in "Poor" condition. The condition of 15% of the BMPs was unknown because they could not be located or accessed.<sup>1</sup> Most facilities are under private or community association ownership. The County requires Maintenance Agreements to be recorded in the County's land records.

### 6.7.3 *Natural Gas*

Residents, businesses and industries in Stafford County are provided natural gas service by Columbia Gas of Virginia, a member of the Columbia Energy Group Company. Columbia Gas of Virginia is the third largest distributor of natural gas in the State. A major natural gas pipeline bisects the County.

### 6.7.4 *Electric*

Three companies provide electric power in Stafford County: Dominion Virginia Power; Rappahannock Electric Cooperative; and Northern Virginia Electric Cooperative.

Major high voltage power lines bisect the County, generally from north to south; one through the eastern half of the County and one through the west. Other undeveloped easements exist as well. Figure 6.8 identifies the location of major power and gas transmission lines.

Dominion Virginia Power is constructing a 230 kv underground power transmission line on an existing 300 foot easement from Aquia Harbor through several north Stafford neighborhoods to Mountain View Road north of Shelton Shop Road. Initially they proposed aboveground lines. Residents and the County were vocal in their opposition to the proposal. In the Spring of 2008, the State Corporation Commission ruled that the power lines would need to be buried.

### 6.7.5 *Telecommunications*

Residents and businesses in Stafford County have access to an array of telecommunications services including high-speed Internet access, cable and wireless services. Several major national and international phone carriers provide local and long distance service. Unfortunately, access to these services is not universal. Certain areas of the County have limited access to the various technologies.

To accommodate the needs of the telecommunications industry while protecting the public safety and welfare of its residents and the character and

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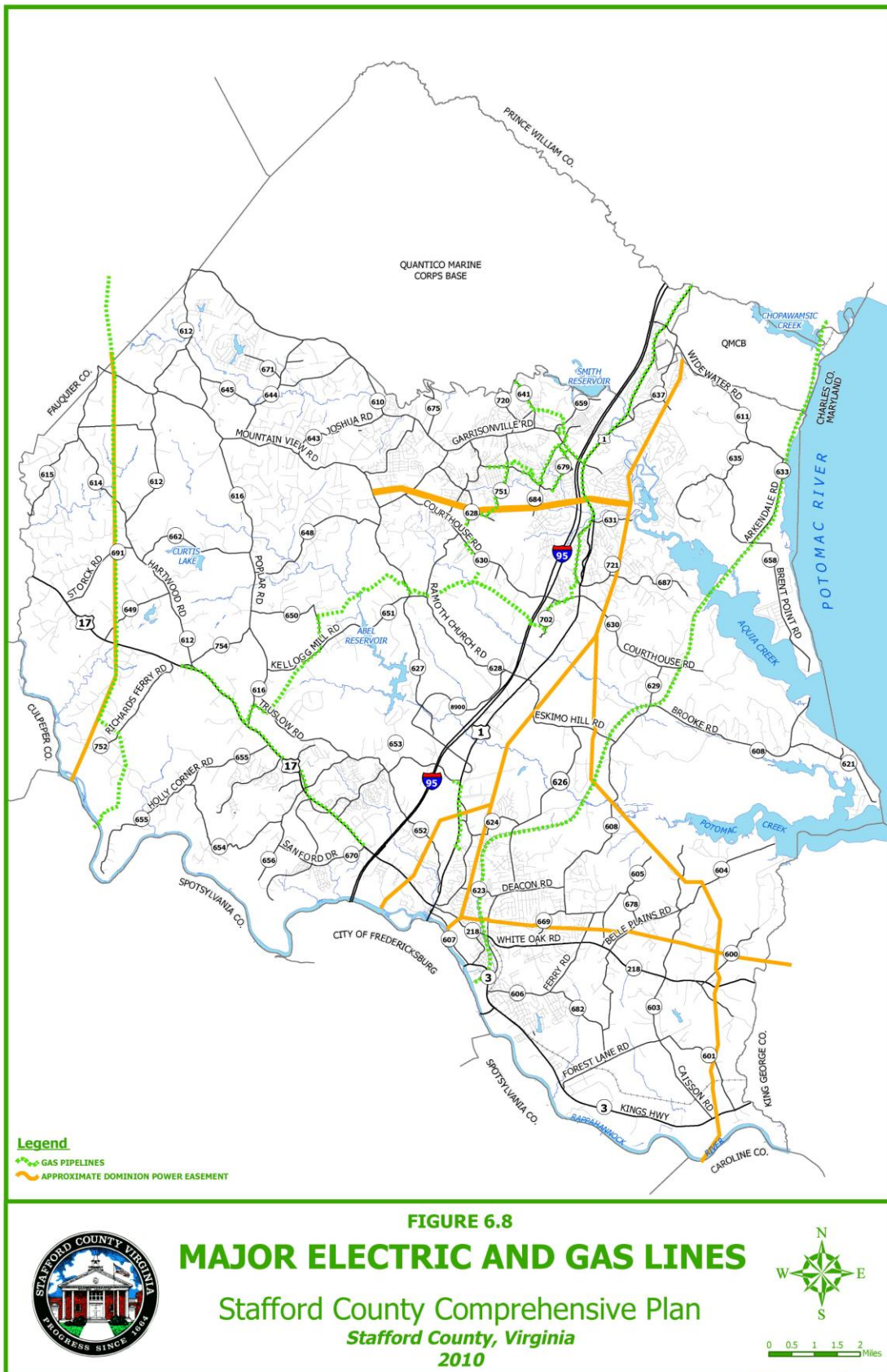
<sup>1</sup> U.S. Army Corps of Engineers, Baltimore District. Stafford County, Virginia Stormwater Infrastructure and Watershed Management Study, July 2005.

aesthetics of the community, Stafford County encourages the co-location of new telecommunications facilities on existing structures. This reduces the need for the construction of new towers. When this is not possible, the preferred locations for new towers are within Virginia Department of Transportation rights-of-way near interchanges along I-95, within the existing right-of-way for overhead power lines, within the railroad right-of-way adjacent to industrial or agricultural districts, or on industrial, commercial and public lands that are suitably buffered from residential areas.

#### 6.7.6 Findings

- The Rocky Pen Run Reservoir and Treatment Facility is expected to be constructed by 2013 and these additional facilities are projected to meet the water needs of Stafford County residents until 2050
- 650 stormwater management facilities control surface runoff throughout the County
- The newest Dominion Virginia Power line located through north Stafford will be constructed underground
- Utilities and an array of telecommunications services are available in Stafford County but certain areas of the County still have limited access to these services







## 6.8 Parks and Recreation

Parks and Recreation amenities in the County are provided and managed by numerous entities. The County Department of Parks and Recreation maintains eighteen facilities countywide that offer sports, recreation and cultural activities for all ages. Curtis Park, Aquia Landing, Willowmere Park, Fritter Park, Duff McDuff Green Park, and Smith Lake Park are the largest facilities, providing the greatest variety of recreational opportunities. Smaller, more specialized facilities are located throughout the County. The County charges a user fee for the use of some facilities, and at some sites, charges more for non-Stafford residents. An 18-hole golf course, The Gauntlet, operated by Golf Course Specialists, Inc., is located at Curtis Park. Private organizations provide recreation facilities to their members. In addition to County facilities, the Fredericksburg and Spotsylvania National Military Park is located at Chatham Manor on River Road. Figure 6.9 shows the location of parks and recreation resources in the County.

In November 2009, County voters approved a bond referendum for \$29 million in General Obligation Bonds for park and recreation improvements and acquisitions. The specific facilities in the referendum include:

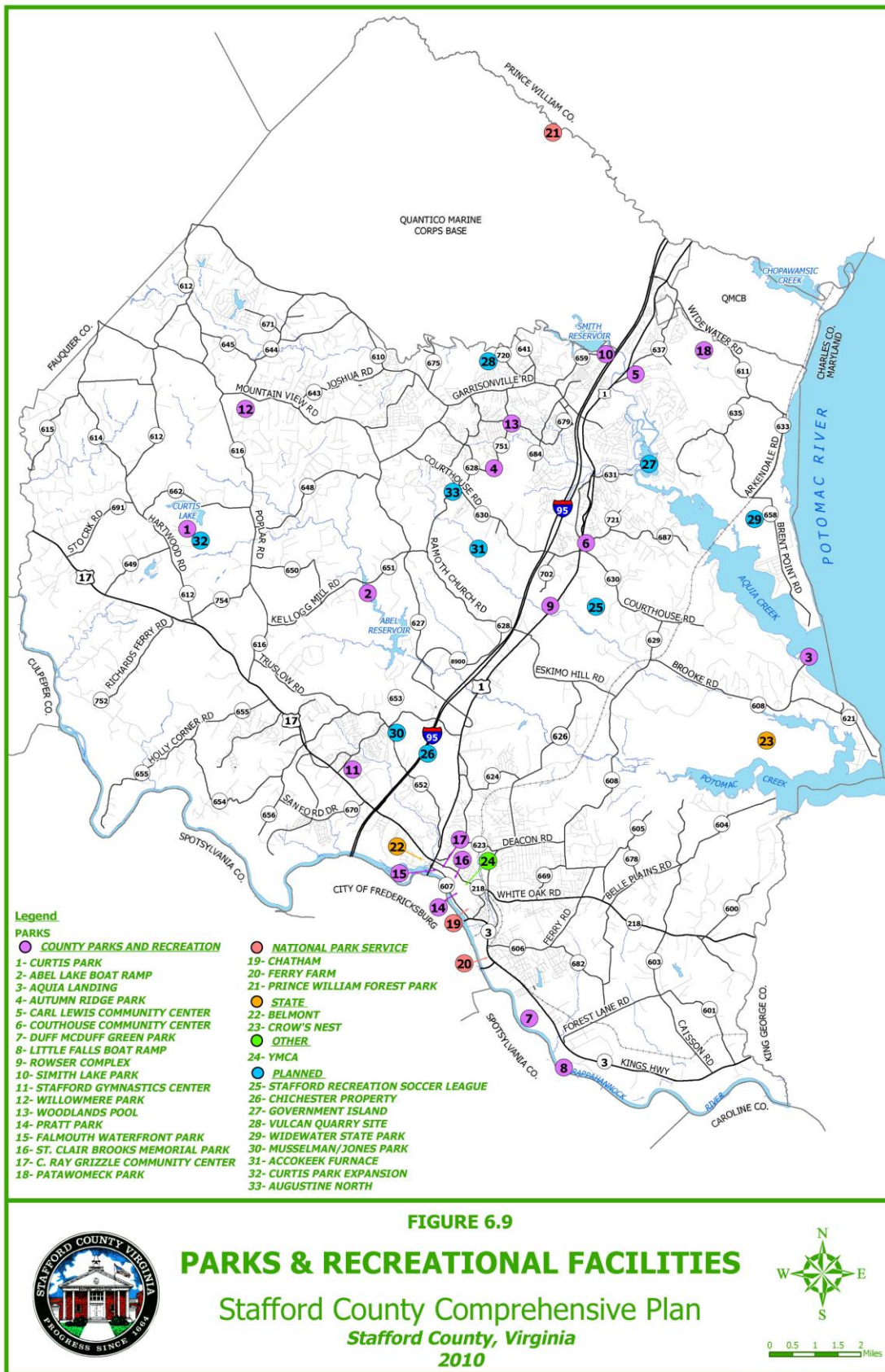
- Development of three (3) new park facilities
- Development of three (3) new trail systems
- Renovations at several parks
- Land acquisition for future parks

Bond referendums have been approved in the past for parks. In November, 1993, County voters approved a bond referendum for \$3.8 million in General Obligation Bonds for park facilities. The County issued the bonds during fiscal year 1995. Plans included the design and construction at Willowmere Park, Duff McDuff Green Park, and Woodlands Pool, and the design of Smith Lake Park. Development of these parks has greatly enhanced the array of facilities available within the County. In November, 2002, voters approved another bond referendum for \$11 million for additional park facilities.

**Table 6.23: Facilities Managed by the Department of Parks and Recreation**

|                            |  |                                 |                               |  |                          |
|----------------------------|--|---------------------------------|-------------------------------|--|--------------------------|
| <u>Abel Lake Reservoir</u> |  | <u>Curtis Park</u>              |                               | <u>Rowser Complex</u>                  |                          |
| 1                          | Boat Ramp                                      | 1                               | Boat Ramp                     |  | Restrooms                |
|                            |  | 1                               | Fishing Pier                  | 1                                      | Kitchen                  |
|                            |  | 1                               | 18-Hole Golf Course           | 1                                      | Meeting Room             |
|                            | <u>Aguia Landing</u>                           | 10                              | Mile Hiking Trails            | 1                                      | Soccer Field             |
| ¼                          | Linear Beach                                   | 5                               | Mile Jogging Trails           | 1                                      | Little League Field      |
| 15                         | Mile Bikeway                                   | 1                               | Swimming Pool                 | 1                                      | Gymnasium                |
| 1                          | Picnic Tables                                  | 100                             | Picnic Tables                 |  |                          |
| 1                          | Open Play Area                                 | 1                               | Playground                    | <u>Smith Lake Park</u>                 |                          |
| 1                          | Concession Building                            | 6                               | Tennis Courts                 | 1                                      | Open Play Area           |
| 3                          | Restroom Facilities                            | 2                               | Volleyball Courts             | 1                                      | Tot Lot / Playground     |
| 2                          | Picnic Shelters                                | 1                               | Amphitheater                  | 3                                      | Soccer Fields            |
|                            |  | 1                               | Softball Field                | 3                                      | Baseball/Softball Fields |
|                            | <u>Autumn Ridge Park</u>                       | 1                               | Multipurpose Field            | 2                                      | Restrooms                |
| 1                          | Soccer Field                                   | 8                               | Picnic Shelters               | 35                                     | Parking Spaces           |
| 1                          | Baseball Field                                 |                                 | Restrooms                     |  |                          |
| 1                          | Picnic Shelter                                 |                                 |                               | <u>Stafford Gymnastics Center</u>      |                          |
| 1                          | Tot Lot  |                                 |                               | 1                                      | Gymnasium                |
| 1                          | Basketball Court                               | <u>Duff McDuff Green Park</u>   |                               |  | Restrooms                |
|                            |  |                                 | Scenic River Overlook         |  |                          |
|                            |  | 1                               | Open Play Area                |  |                          |
|                            |  | 2                               | Soccer Fields                 | <u>Willowmere Park</u>                 |                          |
|                            | <u>Carl Lewis Field and Community Building</u> | 3                               | Baseball/Softball             | 3                                      | Soccer Fields            |
| 2                          | Little League Fields                           | 2                               | Restrooms                     | 3                                      | Baseball Fields          |
| 1                          | Soccer Field                                   | 25                              | Parking Spaces                | 1                                      | Restrooms/               |
| 1                          | Meeting Room                                   | 2                               | Miles Hiking Trails           |  | Concession Bldg          |
| 1                          | Kitchen  | 4                               | Picnic Shelters               | 2                                      | Picnic Shelters          |
|                            | Restrooms                                      |                                 |                               | 2                                      | Miles Walking Trail      |
|                            |  |                                 |                               | 1                                      | Open Play Area           |
|                            |  | <u>Falmouth Waterfront Park</u> |                               |  |                          |
|                            |  |                                 | Beach                         |  |                          |
|                            |  | 1                               | Restroom Facility             | <u>Woodlands Pool</u>                  |                          |
|                            | <u>Courthouse Community Center</u>             |                                 |                               | 1                                      | Indoor/Outdoor Pool      |
| 1                          | Gymnasium                                      |                                 |                               | 1                                      | Bath House               |
|                            | Restrooms                                      |                                 | <u>Little Falls Boat Ramp</u> |  |                          |
|                            |  |                                 | Boat Ramp                     |  |                          |
|                            |  |                                 |                               | <u>Patawomack Park</u>                 |                          |
|                            | <u>St. Clair Brooks Memorial Park</u>          |                                 | <u>John L. Pratt Park</u>     |  |                          |
| 5                          | Miles of Hiking Trail                          | 0.35                            | Miles of Hiking Trail         |  |                          |
| 1                          | Playgrounds                                    | 2                               | Playgrounds                   |  |                          |
| 4                          | Basketball Courts                              | 2                               | Tennis Courts                 |  |                          |
| 1                          | Lighted Baseball Field                         | 2                               | Basketball Courts             |  |                          |
| 1                          | Lighted Little League Field                    | 2                               | Picnic Shelters               |  |                          |
| 1                          | Lighted Softball Field                         | 1                               | Restroom Facilities           |  |                          |
| 1                          | Multipurpose Field                             |                                 |                               | <u>C. Ray Grizzle Community Center</u> |                          |
| 3                          | Picnic Shelters                                |                                 |                               |  |                          |
| 1                          | Restroom Facilities                            |                                 |                               |  |                          |

Source: Stafford County Department of Parks and Recreation



### School Maintained Recreation Facilities

The County School Board maintains the playfields and other facilities at the County schools. Although these facilities were developed and primarily intended for the use of students, some of the fields, gymnasiums, and other facilities are available for public use. The County Parks and Recreation Department coordinates recreational programs in several sports which take place on School Board property.

Table 6.24 School Board Owned Recreational Facilities

| School                                 | Recreational Facilities  |
|--|--|
| <b>Elementary Schools (PK-Grade 5)</b> |  |
| Anthony Burns                          | 1 Playground   |
| Conway                                 | 1 Playground, 1 Basketball Court   |
| Falmouth                               | 2 baseball fields, 2 playgrounds, 1 soccer field, 2 basketball courts  |
| Ferry Farm                             | 1 playground, 1 little league field, 1 soccer field  |
| Garrisonville                          | 1-1/4 mile fitness trail, 2 playgrounds, 2 soccer fields, 1 little league field, 1 gymnasium   |
| Grafton Village                        | 1 playground, 1 soccer field   |
| Hampton Oaks                           | 1 Playground, 1 soccer field   |
| Hartwood                               | 1 playground, 2 softball fields, 1 football field, 2 basketball courts   |
| Kate Waller Barrett                    | 1 playground   |
| Margaret Brent                         | 1 playground   |
| Anne E. Moncure                        | 1 playground, 1 little league field  |
| Park Ridge                             | 1 playground, 1 soccer field 1 baseball field  |
| Rockhill                               | 1 playground   |
| Rocky Run                              | 1 soccer/softball field  |
| Stafford                               | 1 baseball field, 1 practice field, 2 soccer fields  |
| Widewater                              | 1 little league field, 2 soccer fields, 1 practice field   |
| Winding Creek Elementary               | 1 playground, 1 softball/soccer field  |
| <b>Middle Schools (Grades 6-8)</b>     |  |
| Dixon-Smith                            | 1 gymnasium, 1 football field, 1 softball field, 1 soccer field, 4 tennis courts, ¼ mile track, auxiliary gym  |
| Edward E. Drew                         | 1/4mile track, 1 softball field, 1 football field, 4 tennis courts, 1 gymnasium, 1 indoor basketball court, 1 soccer field   |
| T. Benton Gayle                        | 1/4miletrack, 2 baseball/softball fields, 1 football field, 2 soccer fields, 1 gymnasium   |
| H. H. Poole                            | 1 softball field, 1 baseball field, 1 football field, 2 soccer fields, 1 open field, ¼ mile track, 1 gymnasium   |
| Rodney Thompson                        | 1 gymnasium, 1 auxiliary gym, 1 football field, 4 multi-purpose fields, ¼ mile track   |
| Stafford                               | 1 baseball field, 1 dual purpose field, 1 practice field, 1 playground, ¼ mile track, 1 indoor basketball court, 1 gymnasium   |
| A. G. Wright                           | 1 softball fields, 1 football fields   |
| <b>High Schools (Grades 9-12)</b>      |  |
| Brooke Point                           | 2 baseball fields, 1 softball field, 1 gymnasium, 1 football field, 2 soccer fields, 2 practice fields, ¼ mile track   |
| Colonial Forge                         | 1 gymnasium, 6 lighted multi-purpose fields, 1 lighted baseball field, 1lighted softball field, 3 softball/baseball fields, 5 soccer/field hockey fields, 6 tennis courts, 1 auxiliary gym |
| Mountain View                          | 1 gymnasium, 1 lighted multi-purpose field, 1 lighted softball field, 1 baseball field, 5 soccer/field hockey fields, 6 tennis courts, 1 auxiliary gym                                     |
| North Stafford                         | 2-mile hiking trail, 1 baseball field, 1 softball field, 1 lighted multi-purpose field, 6 tennis courts, 2 practice fields, 1 gymnasium, ¼ mile track                                      |
| Stafford                               | 2-mile fitness trail, ¼ mile track, 1 lighted baseball field, 1 softball field, 1 lighted dual purpose field, 6 tennis courts, 1 gymnasium   |

Source: Stafford County Parks and Recreation Department

### 6.8.1 *National Parks*

#### Chatham Manor

Chatham Manor is the Fredericksburg and Spotsylvania National Military Park headquarters located at 120 Chatham Lane overlooking Fredericksburg. Chatham Manor is a former hospital for Union soldiers during the Civil War.

### 6.8.2 *Other Recreational Facilities and Organizations*

In addition to the recreation facilities that are owned and operated by Stafford County or the Stafford County School Board, there are other recreational resources that are available to residents. These include local creeks and rivers, hunting acreage on the Quantico Marine Base, various golf courses and marinas, recreation centers, and community swimming pools. Private organizations such as the American Legion, Girl Scouts of America and YMCA maintain private facilities. In addition, youth sports are organized by private organizations such as the Stafford Baseball League, Stafford Area Soccer Association, and the Stafford Youth Football Coaches Association.

### 6.8.3 *Future Park Facilities*

Stafford County has realized the importance of developing new parks as its population grows and the needs of its residents change. There are properties that the County has acquired or is pursuing in order to actively transform them into viable public parks. They include:

- Chichester Property,
- Crows Nest,
- Government Island,
- Musselman/Jones Property,
- proffered site on the Vulcan Quarry property.

In addition, there are properties owned by other entities that are proposed for park development or preservation of natural resources. These include:

- Stafford Recreational Soccer League property on Courthouse Road,
- Widewater State Park, and
- City of Fredericksburg owned riparian land along the Rappahannock River.

Stafford County is a fast growing community. There is a need for more parks in order to meet the population demands. Acquiring new park land is difficult but important to meet the changing recreational and athletic needs of county residents. The cost of property in Stafford County is increasing rapidly. Buying large (i.e. 100-200+ acres) parcels may be no longer financially feasible. It is recommended that smaller parcels be purchased (between 20-50 acres). These parcels should be designed as neighborhood parks that pedestrians can readily access without having to drive to the facility. The parcels should be located in the northern and southern ends of the County, but it is essential that they be close to Interstate 95 so residents can access them easily.

### 6.8.4 *Potomac Heritage National Scenic Trail*

In December 2006, the National Park Service designated three trails in Stafford as part of the Potomac Heritage National Scenic Trail. The Potomac National Scenic Trail is a 425-mile corridor between the Chesapeake Bay and the Allegheny Highlands. The National Park Service administers, designates and coordinates the trail and local jurisdictions manage their sections of the trail. The selected trails are expected to help boost tourism in the County, since they will be included in National Park Service literature and maps and promoted through the Service's website. The Stafford trails are:

- Government Island Trail – 1.5 miles in length on Government Island highlighting historic quarries, building foundation, roadbed and canal; stone quarried here was used to construct some of the nation's most prominent buildings, including the White House and US Capitol Building. The Trail will be completed in 2010.
- Belmont-Ferry Farm Trail – When it is finished, the Trail will connect Belmont to Chatham and Ferry Farm as well as the Historic Port of Falmouth and the Moncure Conway House which is designated in the National Underground Railroad Network to Freedom. The first 1.5 miles of trail were completed in 1998. There are 3.5 miles yet to be developed. That should happen in the next several years.
- Aquia Creek Water Trail – This trail, which is yet to be developed, will celebrate the unique Civil War history of the creek as well as the transportation history of Aquia Landing.

### 6.8.5 *Parks Analysis*

Area guidelines are used to determine the number of acres of recreational and park lands that are needed by a locality. The 2002 Virginia Outdoors Plan provides an area guideline for recreation and park sites in Virginia of 10 acres per 1,000 people in the population. This figure represents a minimum acreage that should be provided whenever possible. County-wide, the 10 acres per 1,000 population model is used.

Virginia's state guideline for parkland is 10 acres per 1,000 of population. However, Stafford's Parks and Recreation Commission has adopted a standard of twice this level, or 20 acres per 1,000 residents. Based upon this standard, Stafford should have approximately 2,360 acres of recreation and park space. Residents currently have access to 1,610 acres of County-owned and operated parkland. While this figure meets the needs of the existing population under the Virginia standard, it does not meet the Stafford standard. Additionally, the population is growing rapidly and additional park space will be needed in the near future.



**6.8.6 Findings**

- Stafford residents have access to a wide variety of recreation facilities, both publicly and privately owned and operated
- Additional parkland will be required to meet the needs of Stafford's growing population
- There are eighteen County-owned recreational facilities within Stafford County
- Stafford County Board of Education's recreation facilities are also available to be used for community recreational programs
- The Parks and Recreation Department is currently updating its Comprehensive Countywide Facilities Master Plan which will address infrastructure concerns at existing facilities and create a maintenance plan to assure their continued use
- A number of potential future parks and recreation facilities have been identified
- Several private and nonprofit organizations also sponsor sports programs for youths in Stafford County

## 6.9 Natural Resources

Stafford County is characterized by a rolling landscape cut by winding streams and creeks. Bordered to the east by the Potomac River and to the south by the Rappahannock River, surface water is a significant natural feature in the County. In addition, the County's forestlands provide habitat for many different wildlife species. This natural environment provides a desirable place to live, for wildlife and residents.

The County's continued population growth and intense development pressures are threatening the natural resources. Development has caused increases in impervious surfaces, loss of forestlands, open space and farmland and increased transportation pressures. These development factors lead to increases in runoff, decreases in groundwater recharge, increases in carbon dioxide releases, displacement of wildlife and non-point source pollution.

The following section provides a basic understanding of what natural resources exist in the County and how they fit together to form the overall natural environment. This information can help guide efforts to maintain the air and water quality, preserve wildlife habitats and minimize the risk of natural hazards. A map on page 6-68 shows the County's natural resources and another on page 6-72 shows the watersheds.

### 6.9.1 Land Resources

#### Topography

The topography details the different elevations and describes the overall shape of the land. This information is relevant to understanding the flow of water across the land and determining appropriate land uses.

The topography of Stafford County generally consists of rolling hills with most slopes occurring at the County's rivers, streams and creeks. The elevation ranges from sea level to about 450 feet with higher elevations towards the western part of the County. The County's highest elevation is located at the northern tip of the County.

#### Geology

The geology of Stafford County describes earth's composition below the surface of the land. Knowledge of the geological makeup of the County is important to understanding how development will affect the land.

The geology of the County includes two physiographic provinces, the Piedmont province and the Coastal Plain province. These provinces are landform regions that have similar terrain and have been shaped by a common geological history. Figure 6.13 identifies the location of the geologic zones.

The Piedmont province is located in the western portion of the County, generally west of Interstate 95. This province has a generally rolling terrain

## The People and the Place

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that consists of bedrock that is made up of hard igneous and metamorphic rock. In the eastern portion of the County is the Coastal Plain, a terraced landscape consisting of unconsolidated sediments that are relatively soft compared to the igneous and metamorphic rock of the Piedmont province. These two provinces are separated by the Fall Line, a low east-facing cliff that extends from New Jersey to the Carolinas.

Several mining operations are present in the County, including sand and gravel, generally in the southeastern part of the County and a type of granite material in the northwestern portion of the County. Figure 6.14A identifies the location and type of mineral resources in the County. Figure 6.14B is the legend associated with the map that describes the resources. The data is from the Virginia Department of Mines, Minerals, and Energy.

### Soils

A familiarity with the soil composition is necessary to determine the suitability of various land uses such as farming, construction or septic systems. The compatibility with different land uses depends on several different soil characteristics including drainage and erodibility. Within Stafford County, there are 126 classifications of soil from the National Cooperative Soil Survey of the National Resource Conservation Service (NRCS), each with varying characteristics. The following soil information, gathered from the NRCS, gives a general review of the soil properties in the County as well as the compatible land uses with the County's soil.

The drainage of the soils depends on the percolation capacity of the soil, the topography of the land and the proximity to surface and groundwater discharge. It is important to look at soil drainage because it affects the transport of pollutants and the ability for plants to grow. If a soil drains rapidly, precipitation or irrigation water transports water-soluble pollutants through the soil, potentially affecting the quality of groundwater. Soils that are not drained well may become saturated making it difficult for plants to survive because the roots don't get enough oxygen. The NRCS data shows that though the majority of the County, 64%, is well drained, 12% of the land area of the County is classified as very poorly drained. The majority of this poorly drained area is located just west of the Interstate 95 as it travels through the northern portion of the County.



Table 6.25 Soil Drainage Capacity

| Capacity                     | Acres   | Percent |
|------------------------------|---------|---------|
| Somewhat Excessively Drained | 3,689   | 2.0%    |
| Well Drained                 | 115,928 | 63.8%   |
| Moderately Well Drained      | 21,304  | 11.7%   |
| Somewhat Poorly Drained      | 3,981   | 2.2%    |
| Poorly Drained               | 22,058  | 12.1%   |
| Very Poorly Drained          | 1,340   | 0.7%    |
| Not Rated                    | 13,380  | 7.4%    |

Source: National Cooperative Soil Survey,  
National Resource Conservation Service,  
United States Department of Agriculture &  
design based planning, inc.

Erosion is the transport of soil by wind or water. Susceptibility of a type of soil to erosion is based on the composition of the soil as well as the slope and the vegetative cover of the land. Soil erosion can cause a loss of topsoil and create ruts and gullies in the land. Erosion also causes problems with the transport of materials, polluting downstream waters, clogging creeks, streams and other bodies of water as well as clogging drainage ditches.

Over  $\frac{3}{4}$  of the County is either highly erodible or potentially highly erodible. This figure shows that soil erosion is a significant issue in the County and should be considered as development occurs.

Table 6.26 Soil Erodibility

| Erodibility                 | Acres  | Percent |
|-----------------------------|--------|---------|
| Not Highly Erodible Land    | 28,508 | 15.7%   |
| Potentially Highly Erodible | 73,049 | 40.2%   |
| Highly Erodible Land        | 69,865 | 38.5%   |
| Not Rated                   | 10,259 | 5.6%    |

Source: National Cooperative Soil Survey,  
National Resource Conservation Service,  
United States Department of Agriculture  
& design based planning, inc.

In addition to the soil characteristics, the following information from the NRCS provides what percentage of the County is suitable for dwellings, farming or septic systems. Land use suitability for dwellings, farming and septic systems are all determined by the NRCS based on a number of factors that affect these land uses. For example, suitability for septic systems is based on several factors including flooding, bedrock depth, slope, saturated hydraulic conductivity and other measures compiled for an overall measure of whether or not the area is suitable for traditional septic systems. The figures show that nearly all of the land is limited in some way; this causes potential competition for suitable lands.

Only a small portion of the County, 11%, is classified as not limited suitability for dwellings with basement. In addition, most of the County's soil is either somewhat limited or very limited for septic system suitability. Furthermore, east of the Fall Line most of the soil is very limited for septic system suitability. This area east of the Fall Line is also where there is little prime farmland.

Because the County has such a limited amount of land suitable for septic systems, an alternative type of septic system is being utilized to deal with land with this limitation. This alternative septic system uses a two-step process rather than the traditional one-step process.

Table 6.27 Land Use Suitability

| <b>Suitability for Dwellings (with basement)</b>  | <b>Acres</b> | <b>Percent</b> |
|---|--------------|----------------|
| Not Limited                                       | 20,668       | 11.4%          |
| Somewhat Limited                                  | 65,277       | 35.9%          |
| Very limited                                      | 82,356       | 45.3%          |
| Not Rated   | 13,380       | 7.4%           |
| <b>Farming Soils</b>                              | <b>Acres</b> | <b>Percent</b> |
| Areas of Prime Farmland                           | 34,788       | 19.1%          |
| Farmland of Statewide Importance                  | 50,141       | 27.6%          |
| Prime Farmland if Drained                         | 2,308        | 1.3%           |
| Not Prime Farmland                                | 94,444       | 52.0%          |
| <b>Suitability for Traditional Septic Systems</b> | <b>Acres</b> | <b>Percent</b> |
| Somewhat Limited                                  | 53,347       | 29.4%          |
| Very Limited                                      | 100,496      | 55.3%          |
| Not Rated   | 27,838       | 15.3%          |

Source: National Cooperative Soil Survey,  
National Resource Conservation Service,  
United States Department of Agriculture &  
design based planning, inc.

Another soil characteristic in the County is the acidity of the soils. The range for the median pH level is 4.3 to 6.8 showing that the soil is generally acidic. This is an important factor in development because the excavation of acidic soil can cause acidic levels in streams to rise, disturbing the stream ecosystem, as a result of runoff from the acidic soils entering the stream. Also, in highly acidic soils, vegetation is not able to grow and utility lines corrode.

The most important precaution for acidic soils is the knowledge that they exist in an area. This can be accomplished by testing for acidic soils before development occurs. Testing the soil can help prevent environmental disasters such as that of the County's airport where highly acidic soil that was excavated from the site was spread as fill for the site, preventing vegetation growth and damaging the local stream. Although the soil that is below the earth's surface a distance that doesn't reach full acidity until it is excavated, a sulfur test can be conducted to predict the acidity of the covered soil. This

knowledge can prevent the excavation and spread of acidic soils, benefiting both the environment and developers.

### 6.9.2 *Water Resources*

#### Watersheds

A watershed is an area of land where water drains downhill to a body of water. A watershed may include several sub-watersheds that drain into a larger watershed. In Stafford there are numerous sub-watersheds of both the Potomac River and Rappahannock River.

The Stafford County, Virginia Rappahannock Tributaries Watershed Planning Study found that “runoff from impervious cover and agricultural cover is the primary determinants of water quality in the tributaries (of the Rappahannock), and consequently, the primary parameters through which to address watershed management actions.” As a rapidly developing County, the Watershed Planning Study shows that the most pertinent watershed issue is the increasing amounts of impervious surfaces. Impervious surfaces are impermeable surfaces that include rooftops, parking lots, driveways, sidewalks, roads and other surfaces that prevent water infiltration and groundwater recharge. Also, instead of allowing precipitation to penetrate into the ground, impervious surfaces cause runoff to travel across the land collecting sediments, nutrients and toxics that are carried to streams and creeks of the watershed.





Table 6.28 Stafford Watershed System

| ID# | Major Water Shed | Minor Water Shed  | Acres  |
|-----|------------------|-------------------|--------|
| 2   | Chopawamsic      |                   | 12,903 |
| 3   | Aquia            | Beaverdam         | 11,066 |
| 4   | Aquia            |                   | 34,846 |
| 5   | Potomac River    | Potomac River     | 171    |
| 6   | Widewater        |                   | 2,656  |
| 7   | Widewater        | Tank              | 821    |
| 8   | Rappahannock     | Alcotti Run       | 4,560  |
| 9   | Rappahannock     | Deep Run          | 2,586  |
| 10  | Potomac Creek    | Potomac Run       | 6,719  |
| 11  | Widewater        | Potomac River     | 748    |
| 12  | Aquia            | Whitsons Run      | 1,493  |
| 13  | Aquia            | Austin Run        | 5,239  |
| 14  | Accokeek         |                   | 14,539 |
| 15  | Potomac Creek    | Long Branch       | 9,595  |
| 16  | Potomac River    | Potomac River     | 1,911  |
| 17  | Rappahannock     | Richland Run      | 3,979  |
| 18  | Potomac Creek    |                   | 20,547 |
| 19  | Rappahannock     | Rappahannock      | 15,922 |
| 20  | Rappahannock     | Horsepen Run      | 4,920  |
| 21  | Rappahannock     | Falls Run         | 4,209  |
| 22  | Rappahannock     | Rocky Pen Run     | 3,444  |
| 23  | Accokeek         | Potomac River     | 390    |
| 24  | Rappahannock     | Claiborne Run     | 4,242  |
| 25  | Potomac Creek    | Beaver Dam Run    | 2,036  |
| 26  | Potomac Creek    | Black Swamp Creek | 852    |
| 27  | Rappahannock     | White Oak Run     | 5,238  |
| 28  | Rappahannock     | Little Falls Run  | 3,662  |

Source: Stafford County and design based planning, inc.

The level of stream impact relates to the percent of impervious cover in the watershed. An area with between 0 to 10% of watershed impervious area relates to low stream impact, an area between 10 to 25% of watershed impervious area relates to moderate stream impact, and an area 25% and higher of watershed impervious area relates to high stream impact. (EPA Center for Watershed Protection, 2005) Therefore, the protection of watersheds is essential to the preservation of water quality.

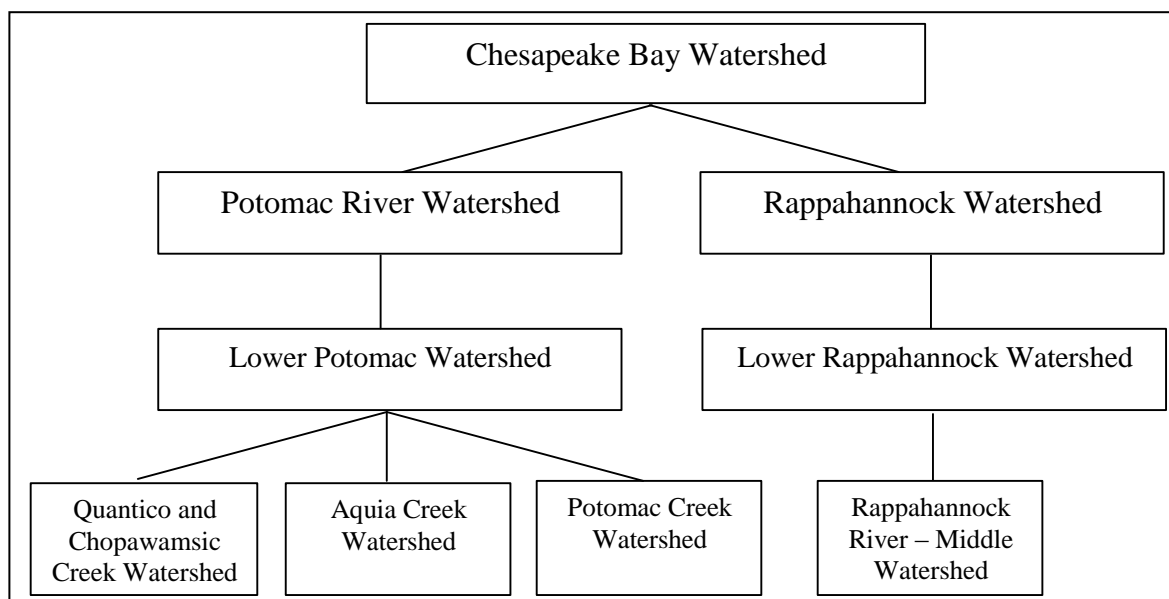
The sub-watersheds of the Potomac River, which consist of 70% of the land area in Stafford, are part of a much larger watershed that stretches across Maryland, Pennsylvania, Virginia and West Virginia covering about 14,679 square miles.

The range of undisturbed land in the County's sub-watersheds of the Lower Potomac River Watershed was reported in the County's Wildlife Habitat Protection Plan, published in 2000 and based upon 1995 data. The Plan stated that less than 50% of the Aquia Creek Watershed is undisturbed, less than 50% of the Accokeek Creek Watershed is undisturbed, 50 to 70% of the Potomac Creek Watershed is undisturbed and 70% of the Widewater Creek/Chopawamsic Creek Watershed (sub-watersheds of the Quantico and Chopawamsic Creeks Watershed) is undisturbed. Though the Widewater Creek/Chopawamsic Creek Watershed is the watershed with the greatest amount of undisturbed land, this is also where the Quantico Marine Corps Combat Development Command is located.

The sub-watersheds of the Rappahannock River are part of a larger watershed that crosses the southwestern edge of the County. The Rappahannock Watershed is much smaller than the Potomac River Watershed and is entirely in the State of Virginia traveling from the Blue Ridge Mountains to the Chesapeake Bay. The Watershed covers 2,715 square miles of land. According to the Chesapeake Bay Program, there is only one sub-watershed of the Rappahannock River in Stafford County, the Rappahannock River - Middle Watershed, which is part of the Lower Rappahannock Watershed. Sub-watersheds of the Rappahannock River - Middle Watershed include Horsepen Run, Alcott Run, Falls Run, Richland Run, Claiborne Run, England Run, Rocky Pen Run, Little Falls Run, White Oak Run and Muddy Creek.

Both the Potomac and the Rappahannock River Watersheds are part of the Chesapeake Bay Watershed, an expansive watershed that travels through six states. The watershed drains into the Chesapeake Bay, the largest estuary in the Country supporting 3,600 species of fish, animals and plants. The Chesapeake Bay Watershed is made up of eight sub-watersheds, with two of these sub-watersheds, the Potomac River Watershed and the Rappahannock Watershed, within Stafford County. The chart in Table 6.29 includes a hierarchy of the watersheds of the County.

Table 6.29 Major Watersheds Stafford County, VA



Source: Watershed Profiles, Chesapeake Bay Program (<http://www.chesapeakebay.net/>)

As part of the Chesapeake Bay Watershed, the County’s water impacts have repercussions to the water quality of the Chesapeake Bay. In 1988, the State of Virginia enacted the Chesapeake Bay Preservation Act to help improve the quality of the water in the Bay. Stafford County is included in the Chesapeake Bay Preservation Areas of the Act in which local governments are required to adopt programs “requiring the use of effective conservation planning and pollution prevention practices when using and developing environmentally sensitive lands.” The main goal of the Chesapeake Bay Preservation Act is to reduce nonpoint source pollution.

Nonpoint source pollution is a major threat to waterways. The source of this type of pollution is mainly stormwater runoff from a multitude of common urban, suburban and rural sites. The problem is that the runoff from these areas contains toxics, pathogens, nutrients and sediments that contaminate the water. This type of pollution is especially difficult to deal with because it comes from so many different sources, requiring the need for sound land use planning throughout the watershed.

Impacts from non-point sources of pollution include phosphorus pollution from fertilizers used by farmers and residents, e.coli contamination from poor agricultural practice and low pH levels when soils with low acidity are exposed during development.

### 6.9.3 Floodplain

A floodplain is an area that is susceptible to full and partial water inundation. Floodplains provide natural flood and erosion control, protect the water quality, offer areas for groundwater recharge and serve as a fish and wildlife habitat. Increased development in a floodplain can cause more severe natural disasters.

Within Stafford County, 12% of the land (20,918 acres) is in a 100-year flood hazard area. According to the Federal Emergency Management Agency (FEMA), the 100-year flood is the flood elevation that has a 1% chance of a flood being equaled or exceeded each year. The County regulates development activities in the flood way, the flood fringe and the 100-year floodplain to minimize natural hazards and development impacts. In addition, Stafford County entered the National Flood Insurance Program, a program of the FEMA. By actively protecting the floodplain, Stafford County is able to provide residents the ability to purchase flood insurance through the FEMA program that is administered by the United State Department of Housing and Urban Development. Residents within the 100-year floodplain are required to have flood insurance. This requirement applies to a just over 1,000 residential structures located within the County's 100-year floodplain.

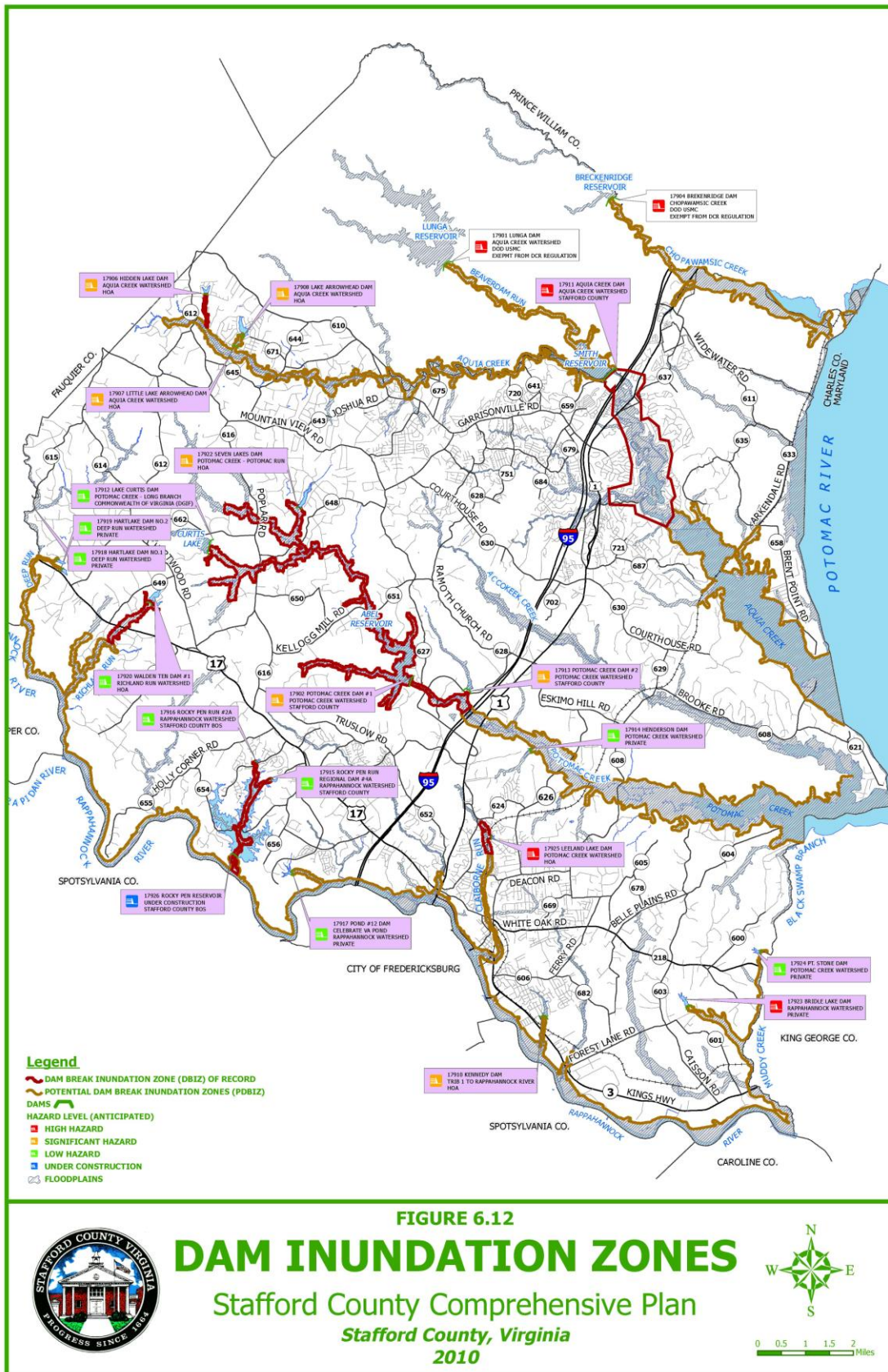
### 6.9.4 Dam Inundation Zones

A dam is a man-made structure, across or outside of a watercourse, used or to be used to retain or store waters or other material. The term includes (i) all dams that are 25 feet or greater in height and impound more than 15 acre-foot of water, and (ii) all dams that are six feet or greater in height and impound more than 50 acre-foot of water. A Dam Break Inundation Zone is the area downstream of a dam likely to be inundated or otherwise directly affected because of a dam failure. Any proposal to encroach the Dam Break Inundation Zone shall meet the requirements set forth in Sections 10.1-606.2 and 10.1-606.3 of the Code of Virginia.

There are 22 listed dams in Stafford County, of which 20 are subject to Department of Virginia Conservation and Recreation (DCR) regulations. Two dams located on the Quantico Marine Base are federally owned and not subject to DCR regulation. The list of dams is provided in Table 6.29 and the location of these dams and potential impact areas are identified in Figure 6.12.

Table 6.30 Regulated Dams in Stafford County

| <b>No.</b> | <b>DCR Dam No.</b> | <b>Name of Dam</b>                 | <b>Hazard Potential Classification</b> |
|------------|--------------------|------------------------------------|--|
| 1          | 17901              | Lunga Dam                          | High                                   |
| 2          | 17902              | Potomac Creek Dam #1               | Significant                            |
| 3          | 17904              | Breckinridge Dam                   | High                                   |
| 4          | 17906              | Hidden Lake Dam                    | Significant                            |
| 5          | 17907              | Little Lake Arrowhead Dam          | Significant                            |
| 6          | 17908              | Lake Arrowhead Dam                 | Significant                            |
| 7          | 17910              | Kennedy Dam                        | Significant                            |
| 8          | 17911              | Aquia Creek Dam                    | High                                   |
| 9          | 17912              | Lake Curtis Dam                    | Low                                    |
| 10         | 17913              | Potomac Creek Dam #2               | Significant                            |
| 11         | 17914              | Henderson Dam                      | Low                                    |
| 12         | 17915              | Rocky Pen Run Regional Pond #4 Dam | Low                                    |
| 13         | 17916              | Rocky Pen Run #2A Dam              | Low                                    |
| 14         | 17917              | Celebrate VA Pond #12 Dam          | Low                                    |
| 15         | 17918              | Hartlake #1 Dam                    | Significant                            |
| 16         | 17919              | Hartland #2 Dam                    | Significant                            |
| 17         | 17920              | Walden Ten # 1 Dam                 | Low                                    |
| 18         | 17922              | Seven Lakes Dam                    | Significant                            |
| 19         | 17923              | Bridle Lake Dam                    | High                                   |
| 20         | 17924              | Pt. Stone Dam                      | Low                                    |
| 21         | 17925              | Leeland Lake Dam                   | High                                   |
| 22         | 17926              | Rocky Pen Run Reservoir Dam        | High                                   |



### 6.9.5 *Wetlands*

According to the U.S. Army Corps of Engineers wetlands are “those areas that are inundated or saturated by surface or ground water 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, wet meadows and similar areas.” Wetlands provide important water quality controls by filtering pollutants, providing flood control and providing flood and sediment control. Wetlands also provide wildlife habitats.

The County has 17,450 acres of wetlands, about 10% of the County’s land area. Both tidal and non-tidal wetlands are located within the County. The County’s tidal wetlands are affected by the ebb and flow of the tide of the Atlantic Ocean by way of the Chesapeake Bay. The non-tidal wetlands occur inland along streams, lakes and ponds.

### 6.9.6 *Groundwater*

Groundwater is an available natural resource serving the County. The groundwater is recharged through the percolation of water through soil or through aquifer recharge areas. The quality and quantity of groundwater in Stafford County relate specifically to the two physiographic provinces. In the Piedmont province the groundwater supply relies on fractures in the bedrock. This source of groundwater is generally protected from surface impacts of pollution and runoff. Yet, a major issue for this source of groundwater is deep pumping and drought.

In the Coastal Plain province the groundwater supply relies on precipitation recharge and permeability of sands and gravels for storage. The groundwater of the Coastal Plain province is not as impacted by deep pumping and drought as in the Piedmont province, yet surface impacts such as pollution and runoff are a much greater threat in this area. The pollution of groundwater is especially harmful because, while surface water can somewhat be treated, once the groundwater is polluted it cannot be treated.

An important part of the County’s groundwater sources is the Coastal Plain Aquifer Recharge Area, which is also known as the Fall Zone. In this area the layers that make up the Coastal Plain aquifers slope upward to intersect the surface and the majority of the groundwater recharge occurs. The Aquifer Recharge Area, which is generally located along Interstate 95, is particularly at risk of contamination from surface impacts such as pollution and runoff as well as a decrease in recharge from increases in impervious surfaces. Also located over the Aquifer Recharge Area is the designated County Growth Area. This presents a major environmental issue because, while the purpose of the Growth Area is to condense growth and minimize the impacts of development on the land and the community, the location over the Aquifer Recharge Area

clusters growth and land cover over an area that should be preserved for the protection of groundwater.

The County's Groundwater Protection Plan provides recommendations of well protection prioritization such as protecting wells far removed from the water system while making wells in proximity to the water system less of a priority. The Plan also emphasizes the need to protect the groundwater recharge from pollution.

Potential mitigation tools the Plan mentions include identifying existing sources of potential pollution and ensuring that essential spill prevention and cleanup measures are in place as well as applying an overlay zoning district to ensure site plans for new development incorporate adequate pollution prevention measures. These measures have not yet been adopted by the County.

### *6.9.7 Forest and Wildlife Resources*

#### Forestland

In addition to being an important natural resource, the forestland of Stafford County is an essential part of protecting the environmental quality of the whole community. The forestland provides a habitat, nesting ground and food source for the area's wildlife. Forestland also provides an area for water recharge, prevents runoff and soil erosion and filters pollution, playing a prime role in the prosperity of Stafford's natural environment. An economic benefit from the forestland is the renewable resource it provides. The County forests harvest deciduous hardwoods, mixed soft woods and pine.

The majority of the County's forested lands are located on private lands. According to Stafford County's Wildlife Habitat Protection Plan using a 1985 report entitled "The Forest Resources of Stafford County", it is estimated that from 1985 to 2000 the County has lost 20,200 acres of forestland. The Wildlife Habitat Protection Plan also states that in 2000 the County was estimated to have 100,000 acres of forestland, 21,876 of which is located in Quantico Marine Corps Combat Development Command's boundaries. In just two years, from 1999 to 2001 the County lost about 1,400 acres of forested lands as a result of development. With the County's continued development, the current amount of forestland is likely to be substantially lower than the 100,000 acres estimate of the 2000 Wildlife Habitat Protection Plan.

#### Wildlife Habitat

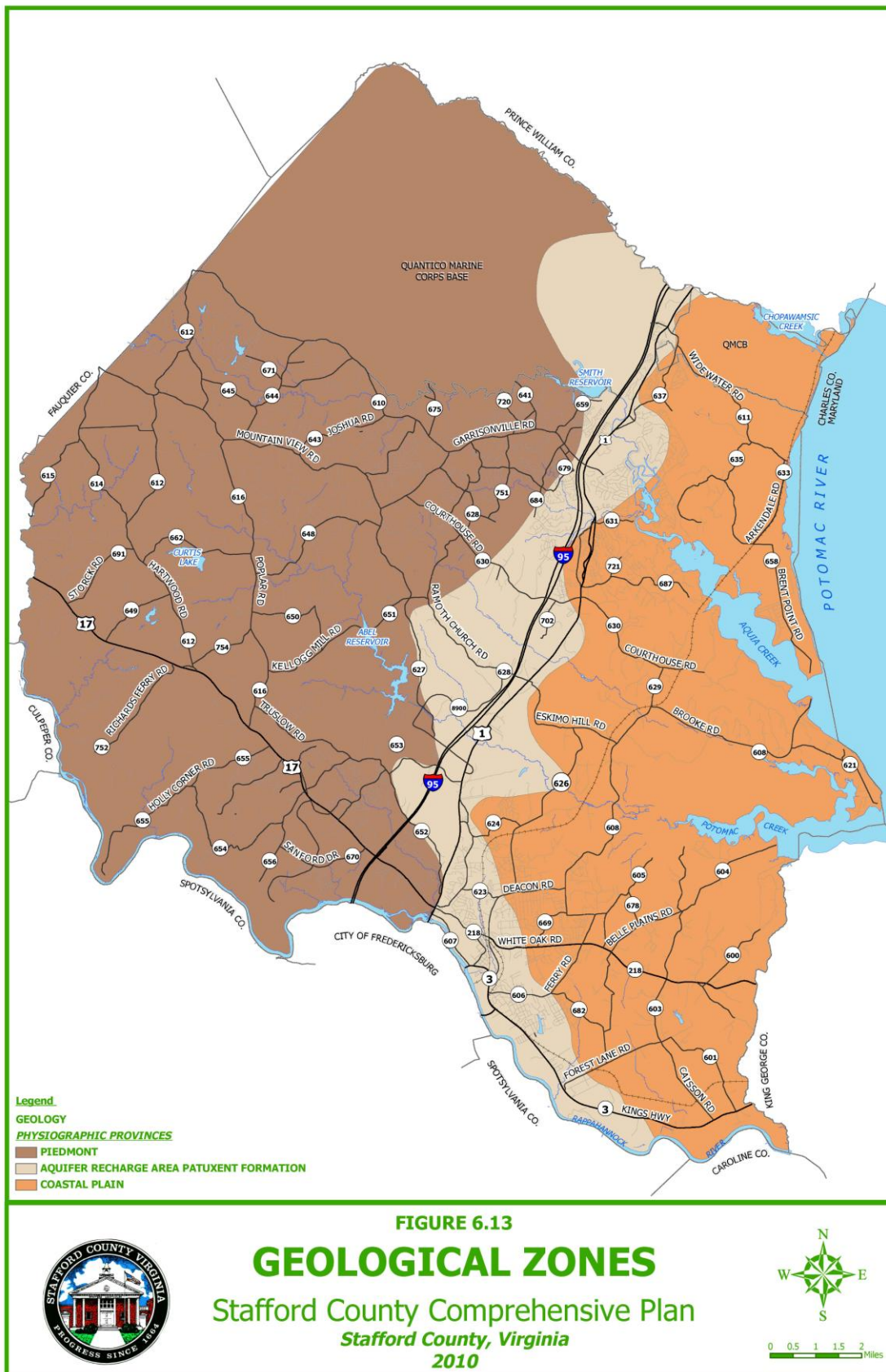
Within Stafford County, the Virginia Department of Game and Inland Fisheries identifies about 242 wildlife species. The wildlife is dispersed throughout the community finding shelter in different habitats of the County. Of the County's wildlife species, 101 are listed as wetland species, 26 are listed as beach species, 90 are listed as riparian area species, 108 are listed as water species and 80 are listed as urban area species (some species are listed in more than one area). The County is also home to a number of Federal and State listed endangered species.



In order to maintain the wildlife habitat the County needs to maintain the overall quality of natural resources. A successful wildlife habitat means protection of forestlands and water quality which means maintaining quality soils, floodplains, wetlands, etc. Overall protecting the wildlife habitat means minimizing impacts of development.

### *6.9.8 Findings*



- Stafford County consists of a rolling landscape with slopes along the County's waterways
- The County is made of two geological provinces, the hard bedrock of the Piedmont province and the soft sediments of the Coastal Plain, which are separated by the Fall Line that crosses the County generally along Interstate 95
- Stafford County is a Chesapeake Bay Preservation Area, meaning that the County must adopt programs that protect the quality of water through land use regulations
- 12% of the County's land area is located in a 100-year flood hazard area
- 10% of the County's land area is a tidal or non-tidal wetland
- The County has a substantial amount of groundwater resources east of Interstate 95, but this area is very susceptible to contamination. West of Interstate 95 the groundwater sources are less abundant, but are not as susceptible to contamination
- The Coastal Plain Aquifer Recharge Area, located along Interstate 95, is where most of the County's groundwater recharge occurs and where the groundwater is most susceptible to pollution
- The County's Growth Area is located over the Coastal Plain Aquifer Recharge Area
- From 1985 to 2000 the County lost 20,000 acres of forestlands
- The County has 242 wildlife species that depend on the natural resources










# GEOLOGY AND MINERAL RESOURCES OF STAFFORD COUNTY, VIRGINIA

## Mineral Resources



















-  Active Mine (permit #)
-  Mineral Occurrence (commodity)

## Key












-  City or Town
-  Interstate
-  Primary roadway
-  Railway
-  water

## Geology (see expanded explanation)

### Piedmont

-  my - mylonite
-  PMf - Falmouth Intrusive Suite
-  Sf - Falls Run Granite Gneiss
-  Oq - Quantico Formation, slate and schist
-  Oqq - Quantico Formation, micaceous quartzite
-  OCgg - Goldvein pluton
-  OCpg - plagioclase tonalite
-  OCu - metasedimentary rocks, undivided
-  OCp - phyllite
-  Cl - Lunga Reservoir Formation, metadiamictite
-  OCTj - trondhjemite
-  Ccv - Chopawamsic Formation
-  Cta - Ta River Metamorphic Suite
-  Cg - amphibole metagabbro
-  CZg - Garrisonville Mafic Complex, amphibolite, etc.
-  CZh - Holly Corner Gneiss
-  dgn - quartz diorite gneiss
-  Ymd - porphyroblastic garnet-biotite gneiss

### Coastal Plain

-  al - alluvium (Holocene)
-  Qt - Tabb Formation
-  Qsh - Shirley Formation
-  Qcc - Charles City Formation
-  QTW - Windsor Formation
-  Tb1 - Bacons Castle Formation
-  Tc - Chesapeake Group
-  psg - sand and gravel (Pliocene)
-  msg - sand and gravel (Miocene)
-  Tl - Lower Tertiary deposits
-  Kp - Potomac Formation

## Data Sources:

Geology: Virginia Division of Mineral Resources (DMR), 2003, Publication 174, Digital Representation of the 1993 Geologic Map of Virginia, scale 1:500,000.

Active Mine Locations: Virginia Division of Mineral Mining, scale 1:24,000.

Mineral Occurrences: DGMR Mineral Resources of Virginia database, scale 1:24,000.

Virginia Department of Mines, Minerals, and Energy  
Division of Geology and Mineral Resources  
Charlottesville, VA  
06 October 2008

Figure 6.14B – Mineral Resources Legend

## 6.10 Transportation

The movement of people and goods around a community is determined by the effectiveness of its transportation network. To assess the existing transportation network in Stafford County and identify areas of deficiency, the following elements were examined: roads; bus service; rail service; air service; and bicycle and pedestrian circulation. Figure 6.15 on the following page shows the existing transportation network and street classifications. Figure 6.16 shows other transportation facilities in the County.

### 6.10.1 Road Network

#### Interstates

Interstate 95 passes through Stafford County. I-95 is a major north-south corridor along the east coast which stretches from New England to Florida. More regionally, I-95 provides access to Washington, DC and the state capital of Richmond. I-95 can be accessed at four interchanges in the County located at Garrisonville Road, Courthouse Road, Centreport Parkway and Warrenton Road.

#### US Routes

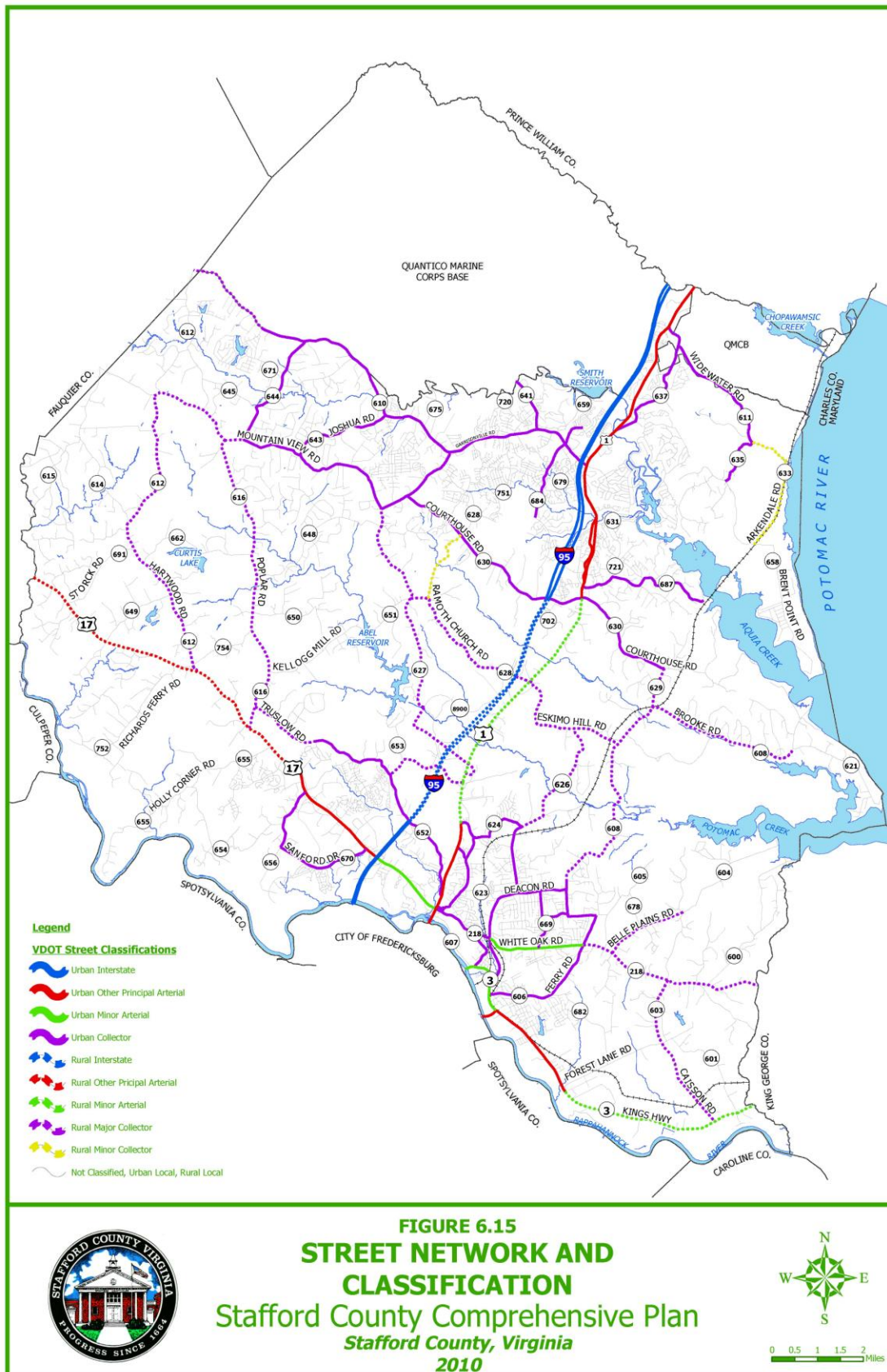
Jefferson Davis Highway / Cambridge Street (US-1) is a major north-south arterial which runs parallel to I-95 through the center of the County. Warrenton Road is a major east-west arterial that runs along the southwest boundary of the County north of Jefferson Davis Highway. Warrenton Road joins Jefferson Davis Highway / Cambridge Street as it exits the County into Fredericksburg.

#### Major State Routes

There are several state routes in Stafford County that provide connections to other counties, as well as function as arterials within the County. Kings Highway travels along the southern boundary of the County from just outside of the Falmouth area to King George County. The Butler Road / White Oak Road corridor is another east-west connection between Falmouth and King George County. Garrisonville Road is an east-west corridor along the northern boundary of the County that provides access between the interstate and Fauquier County.

#### Remaining Road Network

The remaining road network is made up of roads serving as collectors, and local roads in subdivisions. Collector roads often connect a number of local roads to arterials and help to form the major road network. These roads are primarily narrow roads and as traffic volumes increase, they often experience safety and traffic capacity problems.



### *6.10.2 Roadway Jurisdiction*

The Virginia Department of Transportation (VDOT) has the primary responsibility for maintaining all public roads in Stafford County. The County works with VDOT to identify necessary road improvements.

### *6.10.3 Traffic Volume*

Based on 2009 road counts from VDOT, I-95 carries between 136,000 and 147,000 vehicles daily through Stafford County. Jefferson Davis Highway carries between 13,000 and 29,000 vehicles on an average day. Depending on the section, Warrenton Road carries between 18,000 and 40,000 vehicles daily. Near the I-95 interchange, Garrisonville Road moves as many as 52,000 vehicles each day. Courthouse Road carries as many as 16,000 vehicles per day near the I-95 interchange. Near Shelton Shop Road, Courthouse Road carries 10,000 vehicles per day.

### *6.10.4 Traffic Safety*

Traffic accident records are kept by the Stafford County Sheriff's Office. Each accident is recorded using a Global Positioning System (GPS) to identify its location. When these points are plotted on a map, areas where there are high frequencies of accidents can be recognized.

#### Roadway Management and Improvement

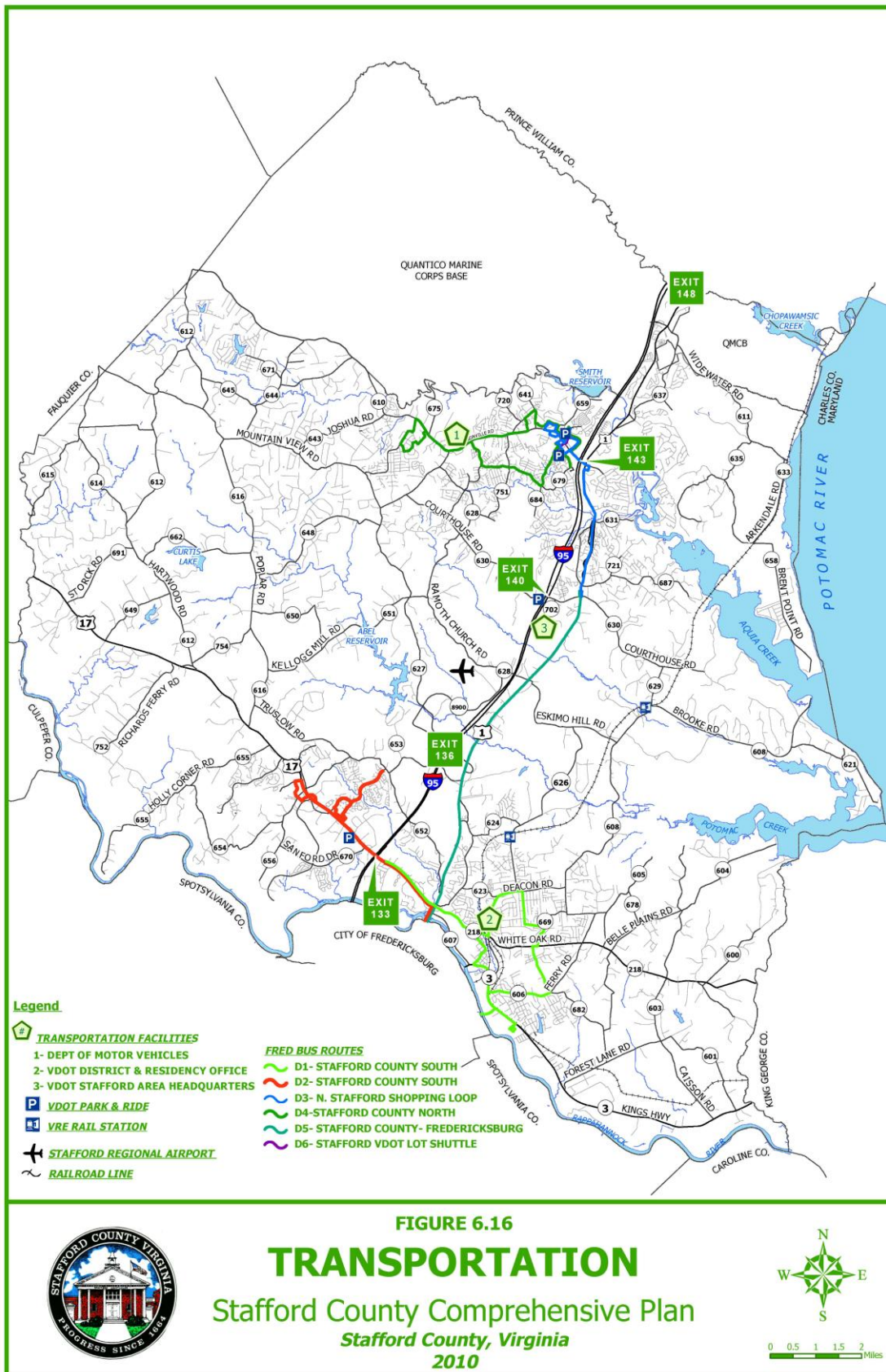
Stafford County actively coordinates with VDOT to promote access management for development. The County also works with FAMPO, our local Metropolitan Planning Organization, and the state to identify funding opportunities for transportation improvements. Stafford County seeks to work with new developers to reduce impacts to the roadway network and through proffers and impact fees to help off-set the cost of new development.

### *6.10.5 Bus Service*

The FREDericksburg Regional Transit (FRED) provides bus service to Stafford, Fredericksburg, and the surrounding area. Connections to Washington, D.C. are by private commuter bus.

### *6.10.6 Rail Service*

The Virginia Railway Express (VRE) operates two rail lines that carry commuters to Washington, D.C. The Fredericksburg Line extends from Fredericksburg to Washington, serving Stafford County. The Fredericksburg Line has two stops in Stafford County at Leeland Road and at Brooke Road. Commuters can also access the VRE at Fredericksburg and Quantico, just outside of the County. Park & Ride facilities are located at all of the stations.





### 6.10.7 *Commuter Lots*

There are six commuter lots located within Stafford County. Two of them are operated by the Virginia Railway Express (VRE) in conjunction with the rail stations. The other four are maintained by VDOT and are in close proximity to Interstate 95. From these lots, people can take a train, bus, or car pool.

The two VDOT Park and Ride lots along Garrisonville Road are over capacity with limited ability for expansion. As several of the other lots are nearing capacity, it is clear that additional commuter parking capacity will be needed to meet the needs of the County over the next 20 years. This may be accommodated through the expansion of existing lots or development of new sites. To date, locations for new commuter lots have not been identified.

### 6.10.8 *Air Service*

Stafford County has its own regional airport and is within a short drive from two major airports.

Stafford Regional Airport is centrally located in the County. An independent authority operates the airport with representatives from Stafford, Prince William, and the City of Fredericksburg. The facility is 550 acres with a 5,000-foot airstrip. The runway can accommodate private and business class jets with wingspans of up to 80 feet. There is no passenger service at this airport. The airport was built to accommodate up to 75,000 operations per year and is currently receiving an average of 800 aircraft a month (performing more than 2,500 flights), a third of which is corporate traffic.

### 6.10.9 *Bicycle and Pedestrian Facilities*

According to the 1996 Bicycle/Pedestrian Facilities Plan, Stafford County is lacking adequate facilities for bicycle and pedestrian transportation and recreation. Many of the roadways in the County are considered unsafe for bicycle and pedestrian needs due to width and line of sight. Some trails are available in County parks. The County is working toward establishing a countywide network of trails for bicycle and pedestrian use. The County is also working with the Fredericksburg Area Metropolitan Planning Organization (FAMPO) to create a regional network.

### 6.10.10 *Findings*

- There are four interchanges on I-95 in Stafford County
- Increasing population negatively effects the existing roads network
- Safety is an issue on many of the narrow, winding roads
- The County works closely with many partners to provide funding for facility improvements.
- Bus service for Stafford County is provided by FREDericksburg Regional Transit (FRED)

- Rail service is available in the County and Quantico for commuters traveling to Northern Virginia and Washington D.C. on VRE
- The commuter lots in Stafford County are at or have exceeded their capacity.
- The County is served by a regional airport
- The County lacks a sufficient network for bicycle and pedestrian circulation.

