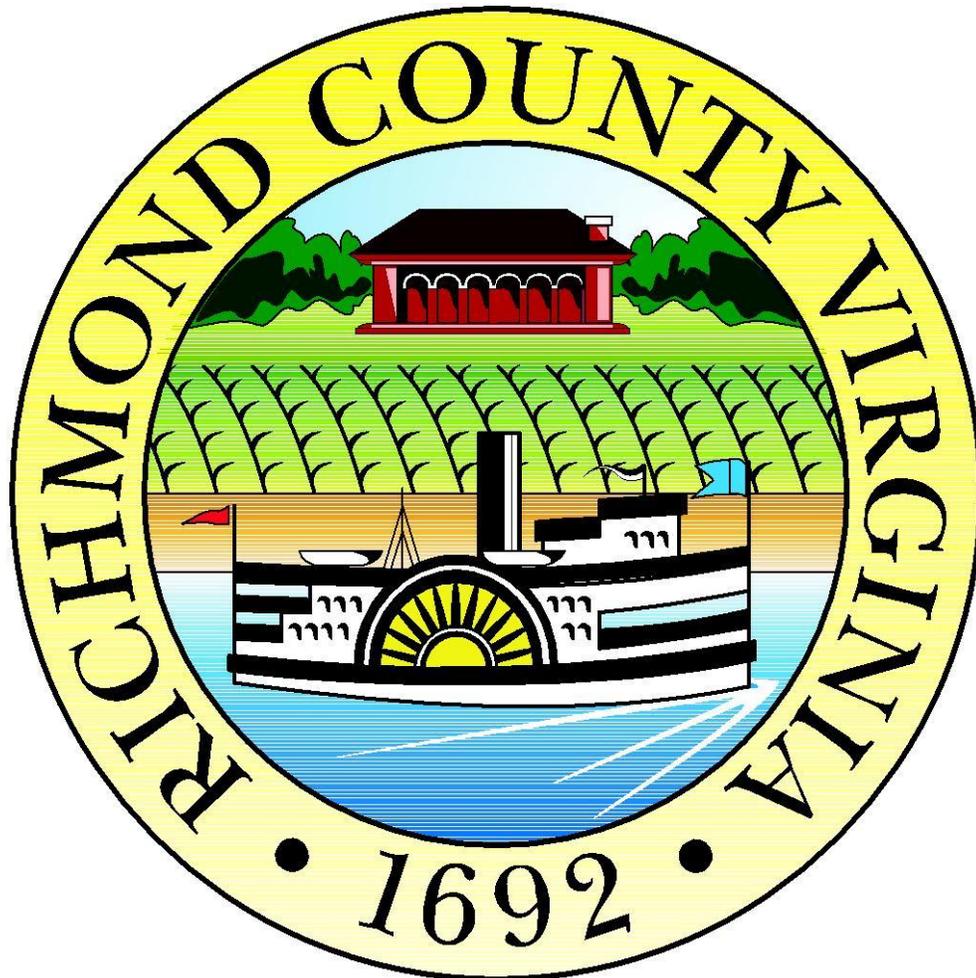


**RICHMOND COUNTY
VIRGINIA**



COMPREHENSIVE PLAN

Adopted July 11, 2013

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FORMAT OF THE PLAN

The plan is organized into six (6) separate parts. These parts are meant to provide a logical sequence whereby various types of information are used to produce a plan for the future development of the County. The following is a brief description of the six (6) parts:

- PART I - INTRODUCTION
This section discusses the purposes of Comprehensive Planning in Virginia. A Vision statement is included that paints a picture of what Richmond County plans to look like in 2020.
- PART II - INVENTORY AND ANALYSIS
This section provides a comprehensive overview of the County. Information is provided concerning natural resources and the environment, past development patterns, population and economic characteristics, community and public facilities, transportation, and other facilities. It is hoped that such information will assist local government in making decisions concerning the future of the County. ***NOTE: US CENSUS 2010 data was not available when the Plan was being reviewed. Upon the release of all 2010 census data, the Plan may be updated and amended at a single time.***
- PART III - MAPPING
This section contains mapping that was compiled from information gathered during the inventory described in Part II. This mapping is referenced in numerous locations throughout Part II and has been utilized in the development of Goals, Issues, Objectives, and Recommendations and Current and Future Land Use described in Parts IV and V.
- PART IV - GOALS, ISSUES, OBJECTIVES, AND RECOMMENDATIONS
This section lists what the Planning Commission believes to be the primary problems that are present in the County. Broad goals are set forth in this section that are meant to address the problems and to describe future conditions that are believed to be desirable. More specific objectives are also set forth which are meant to bring about the goals that are desired.
- PART V - CURRENT AND FUTURE LAND USE
This section combines the information discussed in Parts II and III of this Plan, resulting in a Future Land Use Plan for the County. In this section, referenced maps will show those areas of the County that are most suitable for development.
- PART VI - DEVELOPMENT AND POLICY PLAN
This section briefly describes various policy tools that can be used to bring about the enactment of policies presented by the Plan. These are implementation tools that are allowed under Virginia State Law.

PART I INTRODUCTION

INTRODUCTION

The Richmond County Board of Supervisors adopted its first Comprehensive Plan in 1966. It was a refinement of the Preliminary Land Use Plan, which was approved by the Board in 1962. This is the fourth update to the original Plan of 1966.

Though the Plan has only been updated three (3) times before, planning has gained a greater appreciation in Richmond County. In 1972, a Wetlands Ordinance was adopted. In 1974, the County prepared a Subdivision Ordinance that has since been amended, and in 1975, the County adopted a Manufactured Home Ordinance. In 1989, Richmond County hired a planner/land-use administrator to help develop and implement planning strategies. The Chesapeake Bay Preservation Act was adopted in 1990, and the County adopted a zoning ordinance in 1995. In 2006, under a grant from the Department of Environmental Quality, Randall Arendt provided the County with a review of the County's Zoning and Subdivision Ordinances and its *Comprehensive Plan*, with respect to the *Plan's* goals of protecting Richmond County's significant natural and cultural resources, particularly as they relate to its rural character. Additionally, community assessment reports and strategies to improve the local economy have been prepared as decision aiding information.

Planning efforts in Richmond County continue to focus on the coastal resources and shoreline areas of the County to identify ways to manage, conserve, and develop the County's coastline. These efforts have been aided by the development of a computer-based geographic information system (GIS), which maps the County's coastal environments and natural resources.

It is important to note that a Comprehensive Plan will have only as much effect in determining the future of Richmond County as the county government allows. If properly used, it can be a vital document for assessing past programs and future needs. It should identify the strengths and weaknesses of the County and give direction to future growth.

The Plan should be general in nature to keep it flexible and should emphasize the long-range needs of the County. The Plan should also be used to identify present problems and short term goals as well as potential problems of the future. Additionally, the Plan should provide demographic data and serve as a vital resource in support of economic growth and development.

The Plan should be reassessed and modified if needed as Richmond County changes. The Code of Virginia provides requirements for Plan review in Title 15.2, Section 2230:

“At least once every five years the comprehensive plan shall be reviewed by the local planning commission to determine whether it is advisable to amend the plan.”

These requirements support the need for an ongoing process of Plan reassessment in order to accommodate the community's changing needs as they relate to the impact of increased growth in the County.

A Comprehensive Plan that is not implemented cannot help any locality with its development.

With the foregoing comments, we present the Richmond County Comprehensive Plan.

PART I INTRODUCTION

NOTE: US CENSUS 2010 data was not available when the Plan was being reviewed. Upon the release of all 2010 census data, the Plan may be updated and amended at a single time.

Richmond County's Comprehensive Plan

The Comprehensive Plan is intended to serve as a guide for local officials in their decisions concerning land development, expansion (or development) of community facilities, and the establishment of community-related services. One of the Plan's major purposes is to guide land use decisions in a manner that promotes growth and development while maintaining existing industries, particularly those based on renewable resources. Richmond County is rich in natural, renewable resources. The lands, waters, and forests of the County support the agricultural, fishing, and forestry industries that have historically provided the economic base for the citizens of the County.

Furthermore, the purpose of the Comprehensive Plan is clearly defined in the Code of Virginia, Title 15.2, Section 2223:

“In the preparation of a comprehensive plan the commission (County Planning Commission) shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants. The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.”

Title 10.1, Section 2109 of the Code states that localities within Tidewater Virginia, which includes Richmond County, “shall incorporate protection of the quality of state waters into each locality's comprehensive plan consistent with the provisions of” the Bay Act.

The Plan is not meant to be a legally binding document, nor is it intended to be a detailed blueprint for development. The information and recommendations provided herein should help control sprawling, unplanned development, while at the same time, encourage growth in those areas where development is compatible with existing or proposed transportation systems and community facilities.

Richmond County Vision for year 2020

The “vision” is a picture of the community's shared values and aspirations. It says: This is where we would like our community to be in 2020. It is important to remember that this vision is the destination not the journey. How we arrive at the destination is called planning.

Richmond County's Vision Statement is a product of input from citizens, community leaders and local officials. Prior to arriving at this statement, every effort was made to engage the citizenry through a survey, public meetings and six (6) citizen workshops. It is hoped that by making this

PART I INTRODUCTION

public effort the 2020 Plan will be accepted and utilized by those charged to guide development within the County's jurisdiction.

2020 VISION FOR RICHMOND COUNTY

- **Rural quality of life and landscape reflecting the County's agricultural and forestal heritage**
- **Local businesses offering attractive job opportunities for skilled, local workforce**
- **Protected water resources and water quality**
- **Open spaces that promote traditional fishing, hunting and outdoor pursuits**
- **Housing that is affordable for the local workforce, the elderly and those with disabilities**
- **Development of recreational facilities at the Richmond County Park**
- **Protected historical and archaeological resources that portray the County's cultural heritage**
- **Local government, instituted for the common benefit, protection, and security of the community, that recognizes the constitutional rights of its citizens**
- **High quality education in an environment that is conducive to learning and supported by the necessary infrastructure.**

PART II INVENTORY AND ANALYSIS

INVENTORY AND ANALYSIS

Section A: History of Richmond County

“The history of Richmond County is etched on the contours of the fields and woodlands that blanket most of the County. That same history is also imprinted on the farm buildings and dwellings that spill across clearings and along the streets that are tended by the County’s residents. It is hard indeed not to ponder the County’s past when standing in front of Mount Airy or Sabine Hall or Linden Farm, or any of the significant number of historic houses and buildings that dot the landscape. In other instances, the past is a little more difficult to discern. The echoes of the past are fainter at Menokin and at the sites of other dilapidated or ruined buildings. And there are places where the past cannot speak for itself. Men and women have lived in this area for thousands of years, and archaeological sites lie hidden and buried, silent about what they have to tell about the County’s past.” (“An Archaeological Assessment of Richmond County, Virginia,” 1994)

Most of the recorded (National Register) sites in the County are those of the “historic”/European influence. The area was part of Northumberland County, and then part of "Old Rappahannock" until increasing numbers of settlers justified its division into Richmond County on the north side and Essex County on the south side of the river. The two new counties were so formed by the Assembly at Jamestown in 1692 and were named for the reigning favorites at the court of William and Mary. The petition was brought to the Assembly by the prime entrepreneur of the vicinity, Moore Fauntleroy, whose dealings with the Rappahannock Indians are on record, and by those who had followed him sailing up the river. They were mostly Englishmen, a very few Huguenots, and later some Irishmen. Some of their names still linger here.

Court was held in gentlemen's homes and records were kept in the County clerk's home until the Court House was built (authorized in 1748) by Colonel Landon Carter, and the Clerk's office was built (completed in 1816) by Colonel John Tayloe III. These two men's plantation homes, Sabine Hall and Mount Airy, still house their descendants. Francis Lightfoot Lee, one of two brothers who signed the Declaration of Independence, lived at Menokin with his wife, a daughter of Colonel John Tayloe III; the Menokin house, upstream from Mount Airy, is covered and plans continue for an enclosure. Menokin offers tours of the property and educational programs. Another famous son of Richmond County was Judge Cyrus Griffin. He was born in 1748 near Downings. He became President of the Congress in 1788, held many other political offices, and was appointed United States District Judge for Virginia. Richmond County was also the home of Congressman William Atkinson Jones who sponsored the bill for Philippine Independence in 1916. His home in Warsaw is still maintained by his family and a memorial monument sent by the Philippine people marks his grave at St. John's Church.

The counties of the Northern Neck have been protected from sociological upheaval, such as wars and depressions, because of the hazardous conditions that were encountered when crossing the waters of the Potomac and Rappahannock Rivers. Life had a remarkably even tenor until World War I. Soon afterward, in 1927, the Downing Bridge was completed, opening the counties here to "the outside." Steamboats were no longer the main means of communication.

PART II INVENTORY AND ANALYSIS

Until the mid-twentieth century, agriculture, seafood, and timber were the main industries. Dairy farming, canning and trapping have been specialized forms of occupations, but these are less common now and canning no longer exists. Hunting and fishing, once as a livelihood, and always for sport, are important here. Churches abound. A colonial church, North Farnham, built in 1737 and restored to fine condition, is in regular use. St. John's Church (built 1836) in Warsaw, Menokin Church (built 1838) and Farnham Baptist Church, known locally as Old Farnham Church (built 1856) are old meetinghouses and have active congregations. The county seat was called Richmond Court House until it was renamed Warsaw in 1846 in sympathy of the Polish struggle for liberty at that time.

Historic Resources and Archeological Sites

(See Part III Maps Pg. 1)

Evidence of more than 10,000 years of human activity is evident throughout the County in the form of archeological sites and historic structures, which survive in large numbers. Richmond County's rural character and its relative isolation have enabled these resources to survive in substantial numbers while suburbanization and unmanaged growth elsewhere in the State has resulted in the destruction of a great number of important sites and buildings.

“Archaeological sites in the County narrate the long history of human activity along the Rappahannock River from the arrival of the first Native Americans during the Paleo-indian period over 10,000 years ago to the arrival of the first European and African colonists during the second half of the seventeenth century.” (“An Archaeological Assessment of Richmond County, Virginia,” 1994)

Richmond County entered into a cost-sharing agreement with the Virginia Department of Historic Resources in 1992 to accomplish a countywide archeological resource assessment. In 1994, “An Archaeological Assessment of Richmond County, Virginia” was completed by the Center of Historic Preservation at Mary Washington College. Up to that point, there were fifty-five (55) sites recorded by the Virginia Department of Historic Resources (VDHR). Many of these sites were identified through improvements to the County's transportation routes (mainly Virginia State Highway 3 (VSH-3). The Mary Washington project identified an additional 125 previously unrecorded sites. The sites discovered represent only a small fraction of the archeological resources in the County that can justly lay claim to regional, state, and national importance.

In the past, like today, some land was more likely to be settled than other lands. With this, there has been a predictive model for locating possible sites. There are five major determinations of prehistory site locations, which include the following: proximity to rivers and streams, nearness to freshwater springs, location upon rise of a hill or ridge, nearness to marshlands, and proximity to sufficient land suitable for slash-and-burn cultivation. The model suggests that sites are predicted to be located within 24,000 feet (4.6 miles) of the Rappahannock River and within 12,000 feet (2.3 miles) of the lower stretches of Cat Point, Totuskey, Farnham, and Lancaster Creeks, on level or gently sloping, well-drained soils of the floodplains and ridge tops. The areas around natural, rather than man-made, marshes may also contain considerable numbers of archaeological sites. Knowing this, for interior uplands areas of the County, one prehistoric site

PART II INVENTORY AND ANALYSIS

tends to occur every 8.67 acres as compared to one site for every 7.5 acres (.01 square miles) in the floodplains. Rather than a guaranteed outcome, this is a guide to more efficient use of time and planning resources.

The County does have several recognized sites listed on the National Register of Historic Places. The National Register ensures that the property will be preserved for future generations. Like the predictive model for prehistoric sites, most of these properties are located along the Rappahannock River, and some of them are still occupied by the original families. The colonial homes still standing in Richmond County include every type found in the architectural history of our country.

National Register of Historic Places
Farnham Church
Grove Mount
Linden Farm
Menokin
Mount Airy
Richmond County Courthouse
Sabine Hall
Woodford
Indian Banks

Linden is a rare example of pre-Georgian clapboard dwellings. Bladensfield, another important historic site in the county, was destroyed by fire. Indian Banks, circa 1699, is the oldest brick mansion in the County. Sabine Hall, built in the 1730s, is one of the most renowned brick Georgian mansions in America. It retains its original interior, portions of the exterior and rare period family furnishings. Menokin (now in ruin, with restoration plans ongoing) and Mt. Airy, both built by Col. John Tayloe, rank as some of the best examples of stone construction using true English architectural design. Belle Ville is a formal late-Georgian mansion built as a brick farmhouse, located within the annexed areas of the Town of Warsaw. Finally, the Chinn Mansion, located on the grounds of the Rappahannock Community College, serves as an example of Victorian architecture.

In addition to the many historic homes in Richmond County, there are also a number of historic churches and municipal structures still standing. These include St. John's Episcopal Church (1835), North Farnham Church (1737), Old Courthouse (1748-49), Old Clerk's Office (1816), and Old Jail (1872). All of the municipal buildings listed are still in use.

Section B: The Environment/Natural Resources

Minerals

With the exception of sand and gravel for construction and highway purposes, the County has no mineral deposits feasible for development under existing levels of cost and return. In the past, there have been some slight developments of diatomaceous earth and calcareous marl, though these deposits are of a generally low grade.

Selected samples of clay from various sites have been tested and found potentially suitable for use in the manufacture of face brick, structural tile, and sewer pipe.

Marine Resources

The abundant quantity and high quality of the waters in and around Richmond County represent a resource of inestimable value. Protecting the quality of these waters and the associated marine resources is essential to maintaining the economy of the County and the livelihood of many citizens, even in the face of development.

Shellfish Resources

(See Part III Maps Pg. 4)

Over the past decades, oysters have been decreasing in numbers, mainly due to their sensitivity to the environmental stresses caused by water pollution and by the diseases MSX and Dermo. At one time, oysters played an important role in the economy of Richmond County. A declining oyster population has made oysters less economically viable.

The Department of Health, Division of Shellfish Sanitation, monitors the waters monthly around the County and provides notice of shellfish condemnation areas. Condemnation of shellfish grounds is based on the level of fecal coliform bacteria found in the waters during testing. Fecal coli form bacteria are a component of human and animal waste, and can enter waterways through many avenues. Fecal coli form from human waste can enter through failing onsite sewage systems, non-point source runoff, and municipal sewage systems.

The Virginia Department of Health database of condemned areas includes thirty months of testing, and these condemnation areas can change often. There are three types of classifications, waters that are "open," "closed," or "condemned" to the harvesting of shellfish. Those waters that are "open" have no restrictions placed on them. In areas that are "closed," no shellfish can be taken for any purpose. Those areas that are "condemned" means that the shellfish taken from these waters are not fit for direct human consumption. However, a permit can be sought to allow the removal of shellfish from "condemned" waters into "open" (clean) waters. By

PART II INVENTORY AND ANALYSIS

moving the shellfish to “open” waters and allowing them to cleanse themselves, they can be fit for human consumption in as little as three months.

Crustacean Resources

The Chesapeake Bay Blue Crab can be found in abundance in the waters of the Rappahannock River and its tributaries within the boundaries of Richmond County. With the decline of the oyster in recent years, the blue crab may now be considered the County’s most important commercial fishery and is critical to the continued survival of local watermen and commercial seafood establishments as well as providing a popular treat in local seafood restaurants. Crabbing is also a major attraction for tourists and seasonal residents who enjoy this popular summer recreational activity.

Fishery Resources

Several species of saltwater fish are found in the estuaries of Richmond County, including rock fish, spot, perch, croaker, herring, shad and eels; also some sea trout, flounders, and bluefish occur.

Fresh water species are found in the ponds of Richmond County and freshwater portions of the Rappahannock River. In the fresh water ponds, there are populations of large mouth bass and blue gills, as well as chain pickerel, carp, crappie, sunfish, and catfish. Commercial fisheries in the Rappahannock River and throughout the Chesapeake have suffered declines in recent years.

For detailed species information and fishing regulation contact the Virginia Department of Game and Inland Fisheries (VDGIF) or Virginia Marine Resources (VMRC).

Game and Wildlife

The mixed pattern of adjoining fields, forests, and streams throughout the County provides a favorable habitat for upland game. White-tailed deer, bobwhite quail, turkeys, crows and mourning doves are prevalent throughout the County. Red and gray foxes, gray squirrels, rabbits, raccoons, coyotes, groundhogs, and opossums are also to be found. Numerous muskrats, moderate numbers of beaver and mink, and occasional otters can be found in the marshes and streams.

On the estuaries and on the bordering rivers, there are moderate wintering populations of waterfowl, including Canada geese, whistling swans, canvasbacks, scaups, red heads, mallards, black duck, teal, buffle heads, and wood ducks. There are also many kinds of shore and wading birds such as killdeers, snipe rails, bitterns, herons, sandpipers, and egrets. Richmond County has several kinds of birds nationally classed as threatened or rare species including bald eagles, ospreys, and the cattle egret.

Section C: Physical Environment

The physical environment of Richmond County is largely determined by its coastal setting. The Rappahannock River and two of its tributaries provide the natural border for a large portion of Richmond County. The soils, topography, and geology of the County have been formed from the sedimentary processes and sea level changes that have taken place over many years in the Chesapeake Bay watershed.

The high quality groundwater that lies underneath Richmond County presently provides the sole source of potable water. The continued quality and integrity of this natural resource is of the highest importance as the beauty of the County's natural environment attracts future growth and development.

The coastal environment of Richmond County is responsible for the bounty of renewable, natural resources that are found there. The fertile soils of the County, formed from marine and fluvial sediments, provide a strong base for agriculture and forestry. The County has a rich and diverse natural heritage of aquatic habitat associated with the Chesapeake Bay, including the Rappahannock River and its many tributaries, creeks, streams, wetlands, and shoreline areas. These resources have historically provided the residents of the area with economic, scenic, and recreational benefits. In recent years, development has resulted in an increased intensity of land use within the County, a factor that causes many concerns.

To help prevent water quality degradation in the Chesapeake Bay and its tributaries, the General Assembly enacted the Chesapeake Bay Preservation Act. Subsequently the Chesapeake Bay Local Assistance Board adopted regulations concerning the use and development of certain lands in Tidewater Virginia called Chesapeake Bay Preservation Areas, which if improperly developed may result in substantial damage to the water quality of the Chesapeake Bay and its tributaries.

In its effort to meet its legal obligation to protect the quality of water while recognizing development is occurring and will continue to occur, Richmond County established the following policies:

1. To protect and enhance the quality of state waters pursuant to the Chesapeake Bay Preservation Act through the administration and enforcement of applicable provisions of the Act and regulations.
2. To encourage and promote the protection of existing high quality state waters and restoration of all other state waters to a condition or quality that will permit all reasonable public use while supporting the propagation and growth of aquatic life.
3. To safeguard the waters of the Commonwealth and Richmond County by eliminating or reducing known sources of pollution or contamination.
4. To promote water resource conservation in order to provide for the health, safety, and welfare of the present and future citizens of the Commonwealth and Richmond County.

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First steps to implement these policies were taken by the County by adopting regulations creating the Resource Protection Areas (RPAs) and the Resource Management Areas (RMAs). For more details concerning the actual locations of the RPAs, one should refer to the official Resource Protection Areas map of Richmond County (See Part III Maps Pg. 5 – “RMAs and RPAs”).

The RPAs are comprised of tidal wetlands, tidal shores, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams, and a 100 foot buffer adjacent to these features and along both sides of all tributary streams. The resulting RPAs comprise 20.4% of the County's non-water area. Of this amount, a little over-one half is in wetlands and tidal shores and the remainder is represented by the 100-foot buffer zone around these areas. These protected areas follow the tidal waters and major streams that comprise the watersheds of the County.

The Richmond County Board of Supervisors designated all of the County's land area lying outside of the RPAs as a Resource Management Area (RMA). While the RMA is subject to development, it has been placed under regulations, which require that development be managed carefully, in order to ensure that land use activities do not contribute to the pollution of the Chesapeake Bay.

Among the objectives of the Comprehensive Plan is a focus on the designated Preservation Areas. Six strategies were identified in the 2001 plan, which include the following:

1. Identification of the extent of shoreline erosion within the County and of appropriate measures for controlling such erosion (see shoreline situation report).
2. Identification of physical conditions which place limitations on development.
3. Development of a strategy for the protection of potable water supply, to include proper protection and abandonment of wells that are no longer in use.
4. Identification of existing opportunities for public access to public waters and measures for improving such opportunities within the framework of the County's and State's objectives for enhancing the quality of state waters.
5. Examination of the need for regulations for intensely developed areas.
6. Identification of existing or potential conflicts between proposed land uses and water quality protection.

Each of these topics is examined in Part II and is based on information that is available to the County. Several sources need to be credited for the information that is given. Many of the maps, which can be found in Part III, were prepared by the Northern Neck Planning District Commission using their Geographic Information System (GIS).

A considerable portion of the narrative information, as well as the data associated therewith, was taken from a publication titled: “Inventory of Ground and Surface Water Resources, Richmond

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County,” by Catherine M. Harold; and from “A Preservation Plan for the Chesapeake Bay: Richmond County, Virginia,” by PMA Consulting Services. Although individual references may not be cited at each point where this source was used, its language permeates this entire document. It is therefore universally and gratefully acknowledged. Other significant sources of information are cited where they are used in the text.

This element of the Richmond County Comprehensive Plan focuses on preservation of the Chesapeake Bay within the objectives of Virginia's Chesapeake Bay Preservation Act and Regulations. It is also intended to meet the requirements of the State's planning legislation for Comprehensive Plans and to provide a document that is consistent with the format of the overall County Comprehensive Plan

Climate

Richmond County enjoys a temperate, semi-maritime climate, with mild winters and warm and humid summers. The growing season in Richmond County is 194 days. This season is defined as the period between the average date of the last freezing temperature in spring, April 15, and the average date of the first freezing temperature in fall, October 26. Freezing temperatures have occurred as early in the fall as October 6, and as late as May 11 in the spring.

Precipitation is evenly distributed throughout the year with the maximum in July (average 4.31 inches) and the minimum in February (average 2.71 inches). The annual mean precipitation, as determined over a thirty-year period at the Eastern Virginia Research Station in Warsaw, is 42.61 inches. On an average year, 23 inches of this precipitation falls during the growing season, April to September, and 17.3 inches falls during the winter as snow.

Hurricane Isabel (2003) and Tropical Storm Ernesto (2004) were two storms that severely affected Richmond County. Though most storms usually lose their hurricane force prior to reaching the County some can still cause damage. The remaining low pressure centers typically produce heavy rains and strong winds.

Air Quality

At present, there are no major point sources of air pollution in Richmond County. Non-point sources of pollution, such as the cumulative emissions of highway traffic and residential fuel oil usage, are low enough in the County so as not to present a problem.

Geography

Richmond County is located in Virginia's Northern Neck region, a coastal peninsula that lies between the Potomac River, the Rappahannock River, and the Chesapeake Bay. The County is bounded by the Rappahannock River along the length of its southern border. It also shares a border with each of the other three counties of the Northern Neck: Westmoreland County, Northumberland County, and Lancaster County.

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The total area of Richmond County is about 203 square miles (129,920 acres), of which approximately 11 square miles are water. The County is approximately eight miles wide and 26 miles long. The Rappahannock River and its numerous tributaries form a 197-mile shoreline for Richmond County. These tributaries include: Brockenbrough Creek, which forms the border between Richmond and Westmoreland Counties, Garlands Creek, Jones Creek, Waterview Creek, Cat Point Creek, Little Carter Creek, Jugs Creek, Balls Creek, Pecks Creek, Totuskey Creek, Richardson Creek, Farnham Creek, Morattico Creek, and Lancaster Creek which forms the border between Richmond and Lancaster Counties.

Watershed Areas

(See Part III Maps Pg. 6)

The Chesapeake Bay Local Assistance Division of Department of Conservation and Recreation recommends that planning be directed toward different watersheds instead of political subdivisions. A watershed is an area that is defined by topography and is drained by a specific stream or river. A more simplified definition is the land that water flows across before it enters a stream, river, or ocean.

Watersheds in the State are grouped into Hydrologic Units (HUs). These Hydrologic Units are a collection of smaller watersheds that form a larger watershed, and are defined by the creeks, streams, or rivers that flow out of the land contained in the Hydrologic Unit. The Hydrologic Unit is given an alpha-numeric code.

For planning purposes, Richmond County utilizes the watershed designations depicted on the referenced map, instead of the State designated HUs. This allows citizens of the County to more easily grasp the watershed concept and allows planning resources to be more efficiently directed.

Based on the County's designations, there are fourteen (14) watersheds, many of which cross boundaries into Lancaster, Northumberland, and Westmoreland Counties. The majority of the County is drained by the Rappahannock River, with a very small area drained by the Potomac River and directly into the Chesapeake Bay.

Topography

(See Part III Maps Pg. 7)

The topography of a community is a major determinant of the use of land. As a rule, the more favorable land for use, whether it is for agriculture, industry, or for subdivision development, is relatively flat to gently sloping. Some slope aids in drainage and is desirable for development. However, excessive slopes present more constraints to development, such as the higher costs associated with the preparation of irregularly shaped land for use.

The criterion for determining at what point land becomes too steep for development will vary from community to community and depends, to a large extent, on just how much land is available. In general, for planning purposes, land that exceeds a slope of more than 15% is considered to be less likely to be selected for development than the more desirable flatter lands.

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(A grade of 15% is represented by a fall of 15 vertical feet for every 100 horizontal feet.) Despite the extensive amount of steeper slopes apparent on the referenced map, Richmond County has 134 square miles (85,760 acres) of lands with a slope of less than 15%.

The road network of Richmond County follows the ridges in the topography, and existing development and agriculture tends to use the flatter lands near these roads. Given the County's past history of growth, however, slopes do not appear to represent a deterrent to growth courses. Care should be taken in developing land that has both steep slopes and highly erodible soil because of the tendency of soil in such areas to become highly unstable once it is disturbed for construction.

Soils

The soils in Richmond County have been mapped and described in the Soil Survey of Richmond County, Virginia, completed in 1979 by the U.S. Soil Conservation Service (SCS) and the Virginia Polytechnic Institute and State University. The soil survey was updated by Natural Resource Conservation Service (NRCS) in 2008. The soil survey provides maps of the different soil types in the County. It also describes the characteristics of each soil type, including slope, color, texture, structure, and drainage. The characteristics of these soil types are then evaluated to determine each soil's suitability for agricultural production, forestry production, building-site development, onsite sewage disposal, recreation, wildlife habitat, and other uses.

The suitability for various types of land development and/or the installation of onsite sewage disposal is important to Comprehensive Planning in Richmond County. The presence of certain soil types can increase the cost of or limit development due to permeability of the soil, slope of the land, and the depth to the water table. The slope, erodibility and infiltration rate of a soil also determine the degree to which development will increase surface runoff, which leads to erosion, sedimentation, and other types of non-point source pollution.

One of the most important soil considerations for development is the depth from the surface to the groundwater table. The closer the water table to the surface, the greater the pollutant impacts will be to the groundwater from onsite sewage tanks and other sources of pollution. In areas where the water table reaches the surface for at least a week during each growing season, the soil takes on the characteristics and definition of a wetland. Other important soil considerations are slope and erodibility. Areas of high slope present constraints to grading, construction, and development, particularly on "loose" soils that are subject to erosion.

Development and engineering practices, such as the drainage of wetlands and extensive grading, which are used to overcome natural soil limitations, lead to a number of environmental impacts and hazards.

The dominant use of land throughout the County is for agriculture and forestry. Intensive development is rare except within and near the Town of Warsaw. Here, there may be a likelihood that urban type development will spill over into the County. The availability of water and sewer within the Town, combined with limited onsite sewage treatment potential throughout

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a large part of the County, could make the expansion of intensively built areas adjacent to the Town of Warsaw in the County a substantial possibility.

Prime Agricultural Soils

(See Part III Maps Pg. 8)

Prime farmland is defined by the U.S. Department of Agriculture as land that is best suited to the production of crops for food, feed, forage, fiber, and oilseed. The requirements for designating prime farmland include: sufficient growing season; adequate moisture from precipitation or irrigation; and sufficient soil quality with respect to soil acidity, alkalinity, drainage erodibility, slope, and other factors. Land within Richmond County that has been classified as Prime Agricultural Soils includes more 100.85 square miles (64,500 acres) over half of the County's total area. Much of the prime agricultural land is concentrated along existing roads. Level lands present a natural condition, which is desirable for most agriculture. Roads, however, are man-built, and the correlation between the areas cleared for agriculture and the availability of roads for access is observable.

Soil Types Designated as Prime Farmland

Atlee silt loam
Dogue fine sandy loam, 2 to 6 % slopes
Emporia loam, 2 to 6 % slopes
Kempsville sandy loam, 2 to 6 % slopes
Kempsville loam
Nansemond fine sandy loam
Pamunkey loam, wet substratum
State fine sandy loam, 0 to 2 % slopes
State fine sandy loam, 2 to 6 % slopes
Suffolk sandy loam, 0 to 2% slopes
Suffolk sandy loam, 2 to 6% slopes
Tetotum fine sandy loam, 0 to 2 % slopes
Tetotum fine sandy loam, 2 to 6 % slopes

Source: Soil Survey of Richmond County, Virginia, 1979; updated 2008 Natural Resource Conservation Service (NRCS)

The lower lands (necklands) along the Rappahannock River also represent a significant concentration of prime agricultural soils. The existence of fertile and relatively flat lands in this area very likely reflects the long-term erosion of the more organic surface soils from higher lands to lower lands. Higher water tables also occur in the lower areas, which, excluding hydric soils and wetlands, may minimize the need for irrigation for crops (See Part III Maps Pg. 9 – High Water Table Soils).

A major consideration in the County's pursuit of a water protection policy is the type and amount of agricultural chemicals used on farmlands. The area along the necklands appears to be

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particularly sensitive to the possibility of agricultural chemicals entering both the water table, through percolation, and state water through runoff. In the County's effort to curtail and prevent chemical run-off from agricultural causes, all farms are required to have a Chesapeake Bay Plan adopted and implemented.

Prime Forest Soils

Land can also be catalogued based on its potential to produce timber. Timber productivity and quality is related to the soil characteristics, available moisture, drainage, and topography of a site. Sites are classified according to the volume of wood they are capable of producing in one year. The majority of the soils in the County fall into the "good" range for forestland productivity. While many of those sites will not produce high quality hardwoods, most will grow loblolly pine well and will produce good returns on an investment.

Soil Productivity Classification for Forest Land by Soil Type

Fair Site Index 70	Good Site Index 80	Excellent Site Index 90
Atlee	Bibb	Dogue
	Catpoint	Leaf
	Emporia	Lumbee
	Kempsville	Tomotley
	Nansemond	Yemassee
	Pamunkey	
	Rumford	
	Savannah	
	State	
	Suffolk	
	Tetotum	
	Wahee	

Source: Soil Survey of Richmond County, Virginia, 1979

Site Index is based on the height that a representative tree will attain in a fully stocked stand at 50 years of age.

Forest Resources

As of the most recent 2008 Forest Survey conducted by the U.S.D.A. Forest Service, there were approximately 74,035 acres of forested land in Richmond County. The forests provide wildlife habitat, air quality enhancement, soil conservation, and recreation values to the County. The forest industry represents a significant element of the County's economy.

According to the 2008 Forest Survey, the acreage of forestland in the County has increased by 4,266 acres since 2001. The trend of ownership of forestland has moved away from farmers to other private owners.

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Ownership of Timberland (acres)

	2001	2008
Undifferentiated Private	75,416	74,035
Fish and Wildlife Service	0	5,647

Source: Forest Inventory Data Online (FIDO II), US Forest Service, <http://www.fia.fs.fed.us/tools-data/default.asp>. Richmond County, 2001 & 2008

Forest Composition and Management

Timberland is classified into broad timber types. Pine land and hardwood land represent the classifications of “most value,” growth potential, and “harvestability.” Between 2001 and 2008, The US Forest Service estimated the greatest change in forest type from loblolly/short leaf pine to oak and hickory stands.

Impacts on Prime Farmland and Forested Land

Many acres of prime farmland and forested land are converted each year to more intensive land uses. Over the short run, this conversion does not have a great impact on the agricultural and silvicultural economy. Over a longer period, however, the conversion of prime farmland limits the degree to which Richmond County farmers can expand their operations in response to changes in the demand and supply of agricultural products. The conversion of both prime farmland and prime forested land degrades the resource base of renewable, sustainable industries in the County economy. An example of prime farmland conversion is land that has been purchased by U.S. Fish and Wildlife and is currently managed as the Rappahannock Wildlife Refuge.

Prime Farmland and Forested Land Protection Program

Richmond County presently administers a Land Use Taxation Program as a strategy to support farming and forestry as the primary use of prime farmland and forested land.

Highly Permeable Soils

Soils that are highly permeable allow water to pass through with very little resistance. Highly permeable soils usually have a high sand content. Soils need to be permeable enough to "percolate" for an onsite sewage disposal system, but not excessively enough to leach under-treated sewage effluent into groundwater supplies. It is a balancing act; medium permeability is desired, not high or low permeability.

Highly permeable soils are extremely susceptible to pollutant leaching (the vertical transport of pollution carrying molecules into the groundwater supplies) Pollutants can be organic contaminants, (such as bacteria and viruses) heavy metals, pesticides, nutrients (Nitrogen or Phosphorous), road salts, or petroleum products from leaking underground storage tanks (UST's). Thus, special care must be taken when applying or building on this type of soil. Farmers need to be cautious when applying pesticides and fertilizers on highly permeable soils. Industries that locate in areas with highly permeable soils should be aware that these

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soils may rapidly transport pollutants and exercise caution in their daily activities, to reduce the possibility of contaminant spills.

Highly permeable soils occur throughout the County, but, for the most part, mainly above the necklands on the edge of slopes. There are some pockets of highly permeable soils in the necklands resulting from alluvial sand deposits. However, for the most part, the necklands consist of soils that have a low permeability.

The permeability of soils is one of the factors taken into account in categorizing onsite sewage disposal suitability. Areas shown on the map as having low permeability (described as “percs slowly”) will be classed as having severe limitations for sewage disposal absorption fields. Other important factors taken into consideration by the map are depth to seasonal water table (described as “wetness”) and landscape position (described as slope).

Soil Limitations for Onsite Sewage Treatment and Disposal

A valuable source of information on soils for site suitability may be found in the Soil Survey of Richmond County, Virginia, prepared by Virginia Polytechnic Institute & State University and the U.S. Department of Agriculture, Soil Conservation Service (now NRCS).

The analysis ranked almost three-fourths of the County as having severe limitations for onsite sewage disposal and only 19.9 % with slight limitations. In a rural community, the ability to provide safe and proper onsite sewage disposal is the critical factor in establishing suitable areas for residential development and protecting the environment. Suitable sites will generally be found on better-drained soils that do not have other limiting factors. Every residential lot is required to comply with the State Health Department Regulations for sewage treatment and disposal as well as meet the provisions of the Chesapeake Bay Act that set forth additional requirements for system maintenance and reserve capacity for use should the original system fail.

The most desirable locations for placement of onsite sewage systems are in favorable landscape positions often found on higher elevations and along roads or on ridges adjacent to drainage ways. These are also the areas of the farm lands already in use. Areas that are low, flat, and tend to have poor drainage characteristics, including most of the entirety of the low marine terrace, are generally not suitable for onsite sewage system development without expensive modification and advanced treatment technology. The point is emphasized that while a rating of *severe* is a strong indicator of the undesirability of soil for onsite systems, this is not the sole criterion upon which approvals are based. The reader is reminded that Health Department regulations and site approval criteria have changed dramatically since the Soil Survey was published in 1979 and in response, many sites once considered unsuitable can now be utilized. In all cases, final judgment must be made through a detailed onsite evaluation performed by either a state licensed Authorized Onsite Soil Evaluator (AOSE) or a Professional Engineer.

The entire area of the County is either in a RPA or a RMA. Because of this, any development proposed must meet strict building standards, including storm water management, etc. At the present time, the County believes that these regulations are adequate for the control of development.

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The implications of the soil survey to overall planning policy are clear. Any substantial development in Richmond County must be served by appropriate community wastewater facilities or onsite sewage disposal systems. Advancing technology has led to the development of many different options for wastewater treatment and disposal. There is a growing trend to utilize decentralized sewage systems that collect and treat wastewater from a community and dispose of it on remote sites that may be located some distance away where suitable soils can be located. This literally opens the door to potential development of areas that traditionally would not "perc".

The regulatory environment is also changing in response to changing roles and technology. Licensed private sector professionals now provide the majority of soil and site evaluation as well as system design. The role of the health department has shifted from primary permitting to oversight and quality assurance and regulations are being simplified to focus more on performance and outcome with less emphasis on prescriptive methods. The end result means that a wastewater solution can now be found for most any property under consideration for development. The only real limitation in many cases now is strictly economic because advanced wastewater and disposal technology tends to be very expensive.

Hydric Soils

Another measurement of the quality of soils within Richmond County comes from the examination of hydric soils. The existence of hydric soils is one criterion for defining non-tidal wetlands. Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic (lack of oxygen) conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic (water loving) vegetation. An area may be said to meet the wetland hydrology criterion if it is saturated to the surface or inundated for a period greater than seven days during the growing season. Other criteria for identifying non-tidal wetlands include plant life and soil classifications. After soils have been identified as hydric, they are generally classified as *wetlands* and bear the same use restrictions as do other wetlands.

Overall, hydric soils occupy 17,585 acres or 14.4 % of the County's area. They lie, for the most part, along existing streams, including most of the low marine terrace and fluvial river terrace. It is very likely that this area, at one point in geological history, was in the Rappahannock River.

Previously, hydric soils were largely considered unavailable for development because they did not meet standards to allow for proper sewage treatment. Due to advances in sewage treatment technology this may no longer be the case

Soil Erosion

Unless protective measures are taken to minimize erosion during periods when soil is being disturbed, soil is more likely to erode and cause sedimentation problems downstream. Planning strategies directed at controlling soil erosion include measures to minimize the amount of land

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that is cleared and the requirement that protective devices be installed during development, which prevent the sediment from leaving the site and reaching state waters.

The potential for erosion comes from a combination of factors including, among other things, slopes and soil types in combinations that make the areas very sensitive to soil erosion, should the natural growth be removed for construction or clearing for agriculture.

Stream Bank Erosion

Stream bank erosion, which is usually the result of the development of watersheds without proper storm water management, can also occur in areas where vegetation has been removed during forestry operations or for the creation of additional agricultural lands. In order to deal with this issue adjacent to agricultural lands, all land upon which agricultural activities are being conducted must be assessed as to whether or not a soil and water conservation plan is needed. Through the protection and restoration of buffers adjacent to farmlands, the volume and velocity of runoff entering adjacent streams is greatly reduced. For forestry lands, the County works with the Virginia Department of Forestry in order to ensure that Best Management Practices (BMPs) are implemented during harvest and to encourage the reforestation of lands once they have been timbered.

Erosion and Sediment Control

Richmond County has adopted and enforces an Erosion and Sediment Control Ordinance, which is aimed at controlling erosion, runoff, and sedimentation caused by grading, construction, and other land clearing and earth moving activities. The Erosion and Sediment Control Ordinance requires that a developer submit a plan for minimizing erosion and sedimentation, prior to conducting any land development activities. The Ordinance also requires that each provision in the plan be carried out and maintained.

Stormwater Management

Stormwater impacts to water quality and downstream flooding have long been recognized. Management of stormwater seeks to reduce these negative impacts that result from land development. Controlling the runoff from storm events can improve water quality by minimizing pollutants discharged downstream and reducing stream channel erosion. Reducing the runoff volume from development sites can aid in protecting downstream properties from flooding.

Virginia's Stormwater Management Act of 2004 authorized several major changes to the state's stormwater program. Prior to 2004, several state agencies and boards had their own stormwater programs (i.e., Department of Conservation and Recreation (DCR); Department of Environmental Quality (DEQ); and Chesapeake Bay Local Assistance Board. The 2004 Act consolidated these stormwater programs from multiple agencies into the Virginia Department of Conservation and Recreation (DCR). (Code of Virginia Section 10.1-603).

The Act also gave the Virginia Soil and Water Conservation (SWC) Board of DCR the statutory authority to develop regulations that specified minimum technical criteria and administrative

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procedures for stormwater management programs in Virginia and authorized the future transfer of stormwater permitting from the state (DCR) to the locality. All localities located within Tidewater Virginia as defined by the Chesapeake Bay Preservation Act are required to adopt a local stormwater management program for land disturbing activities within 15 – 21 months following the effective date of the regulations. Richmond County falls into this category and must adopt and administer a local stormwater program.

The regulations established by the SCW Board comprise standards for water quality and quantity, procedures and fees that the locality must implement through its local program. In December 2009 the SWC Board adopted these regulations. However, another public comment period has suspended the adoption of these regulations by the localities at the time of this writing. In addition, recent legislation has extended the effective date of these regulations. The regulations shall be adopted within 280 days after the establishment of the U.S. Environmental Protection Agency's Chesapeake Bay-wide Total Maximum Daily Load (TMDL) for pollutants but no later than December 1, 2011.

WHAT'S NEW ABOUT STORMWATER MANAGEMENT?

- Local program versus state responsibility for permitting
- Local fees adequate to fund the program are determined and imposed by state
- “Runoff reduction method” replaces the “simple method” in calculations
- Water quality is based on entire site not impervious cover
- Redevelopment on sites ≥ 1 acre requires 20% phosphorus reduction (currently 10%)
- Stream channel protection standards based on 1-year storm (currently 2-year)
- Sites to be designed to minimize impervious cover, grading and loss of forest
- Low impact development (LID) and containment of rainfall/runoff on site are key Best Management Practices (BMPs)
- BMP construction costs will probably increase significantly but much greater runoff reduction will be achieved

Farmland Best Management Practices

Numerous state, federal, and regional agencies are involved in programs that assist farmers in Richmond County to apply soil conservation and Best Management Practices (BMPs) to their cultivated areas, in order to control runoff from agricultural land. These agencies incorporate financial incentives with technical expertise to devise conservation strategies that will maximize benefits to farmers through soil conservation and minimize the negative impacts of pollutant runoff to the waters of the County.

The Richmond County Chesapeake Bay Preservation Act Program requires that all land upon which agricultural activities are being conducted have a soil and water quality conservation assessment. The assessment evaluates the effectiveness of existing practices pertaining to soil

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erosion and sediment control, nutrient management, and the management of pesticides. These assessments will, where necessary, result in a conservation plan that outlines additional BMPs needed to ensure the protection of water quality. This planning process was started by the Northern Neck Soil and Water Conservation District in 1989. Effective March 1, 2002, regulations were amended, adding an intermediate step in the conservation planning process. Specifically, Soil and Water Quality Conservation Assessments are to be performed before the development of complete conservation plans. The Northern Neck Soil and Water Conservation District has prioritized assessments and plans based on complaints, walk-ins, and Agricultural Non Point Source Assessment Rankings by 6th Order Units of the National Watershed Boundary Dataset.

By June of 2010, it is estimated that 85% of the cropland has a current Nutrient Management Plan and managed to reduce soil erosion by using no-till planting methods.

Wetlands

(See Part III Maps Pg. 15)

Along the shoreline and within the creeks and estuaries of Richmond County, wetlands and marshlands provide important transitional zones between land and water. These wetland and marshland areas have long been recognized for the many valuable functions they perform in their natural state. These functions include the following: the buffering and stabilization of the shoreline from the process of coastal erosion; the storage of surface water for groundwater recharge; the buffering and absorption of flood waters; the production and transport of food material important to the aquatic food web; the filtering and cleansing of runoff and other waters which pass through the wetlands; and the provision of aquatic, wildlife and waterfowl habitat, particularly for the critical nursery stages of crabs and many important fish species. These species, known collectively as anadromous fishes, spend most of their adult life in marine and oceanic waters and then return to small creeks to spawn within the wetlands and nursery areas.

The wetlands of Richmond County can be broadly classified into two groups: those that come under tidal influence; and those that are located in freshwater areas above the range of the tide. The Virginia Institute of Marine Science has conducted an inventory of the tidal marsh areas of Richmond County. When this data was collected, there were approximately 4,820 acres of tidal wetlands in the County. Wetlands are divided into tidal wetlands and non-tidal wetlands. In Richmond County, there are 5,524 acres (8.63 square miles) of tidal wetlands and 7,290 (11.4 square miles) acres of non-tidal wetlands, according to the National Wetland Inventory. Both wetland types comprise 12,814 acres or about 9% of the total County area. When including the 100-foot RPA buffer, this amounts to over 15,000 acres.

As a practical matter, the wetlands overlay the same areas as hydric soils although wetlands incorporate only about two-thirds as much land area as is occupied by hydric soils. The potential is high that additional wetlands considered to be wetlands under federal guidelines and are regulated as such under the Clean Water Act, exist in these areas but have not been mapped. Until better mapping is available, these areas are best identified and delineated in the field with expertise.

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Tidal wetlands act as nursery grounds for fish, crabs, and shellfish, as a critical habitat for shorebirds and migratory waterfowl, and as a place for recreational opportunities. These wetlands are located mostly along the bottomland of the major drainage streams within the County, which are subject to tidal action. Non-tidal wetlands also follow stream courses and, in general, merely form extensions of the tidal creeks.

Priority Wetlands

The U.S. Fish and Wildlife Service, working in a cooperative effort with state agencies, local governments, private organizations, industry, and individual citizens, has identified wetland sites throughout the country which warrant protection because of their value, scarcity, and vulnerability. This undertaking was in response to the Emergency Wetlands Resources Act (Public Law 99-645) enacted by the United States Congress in 1986. A number of wetlands in Richmond County have been identified and are included in the Regional Wetlands Concept Plan published by the Fish and Wildlife Service.

The plan itself does not extend additional protection measures to these wetlands beyond existing regulation, but rather is a guidance document to assist in directing limited resources in future Conservation/acquisition efforts. The following are brief descriptions of those Richmond County wetlands that have been identified in the Regional Plan:

Priority Wetlands (U.S. F&WS Regional Wetlands Concept Plan)

Site Name	Acres	Wetland Type
Cat Point Creek	1,700	estuarine, intertidal, emergent
Jones Creek Wetlands	150	palustrine forested, scrub-shrub & emergent
Little Carter Creek Marsh	2,200	estuarine, intertidal, emergent; palustrine forested & scrub-shrub
Mulberry Island	100	estuarine, intertidal, emergent & unconsolidated shore
Totuskey	1,500	estuarine, subtidal, consolidated bottom; estuarine, intertidal, emergent; palustrine forested

Impacts on Wetlands

A wide range of man's activities can adversely affect the health and natural value of wetlands. This is due, primarily, to two factors: wetlands represent an environment that is not suitable to

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normal use and habitation by man; and, wetland functions are easily disrupted through modifications to their physical characteristics and surroundings.

Adverse impacts on wetlands can take the form of direct impacts, such as dredging or filling, or indirect impacts, such as sedimentation, the modification of natural drainage, or scouring caused by wave refraction from bulkheads. The cumulative effects of wetlands loss create numerous, severe impacts upon water quality, living marine resources, and the fisheries economy of Richmond County.

Wetlands Protection Programs

Chesapeake Bay Preservation Act and Regulations

The Virginia General Assembly enacted the Chesapeake Bay Preservation Act (Bay Act) in 1988. The Bay Act established a cooperative relationship between the Commonwealth and local governments aimed at reducing and preventing nonpoint source pollution through resource-sensitive land use. The provisions of the Bay Act work in concert with the various construction and post construction programs, such as stormwater management and erosion & sediment control, to address all sources of water quality degradation in a comprehensive manner.

Each locality within Virginia's coastal zone must adopt a program that is consistent with the Regulations. Elements of this required program include:

- A map delineating Chesapeake Bay Preservation Areas;
- Adoption of performance criteria for the use, development and redevelopment of land;
- A Comprehensive plan that incorporates water quality protection;
- A zoning ordinance that incorporates specific measures to protect water quality;
- Subdivision ordinances provisions that protect water quality
- A compliant erosion and sediment control program; and,
- An adequate plan of development review process.
- A map of Recreational and Commercial Fisheries (See Part III Maps Pg. 16)

Richmond County's program was established by the Board of Supervisors on September 20, 1990. The County's preservation area includes Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). Sensitive features such as tidal wetlands, tidal shores, and non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow are included in RPAs along with a 100 foot vegetated buffer adjacent to and landward of these features and along both sides of any water body with perennial flow. The 100' RPA buffer is required to remain in its natural vegetated condition. RMAs are designated contiguous to the entire inland boundary of the RPA, and must include floodplains, highly erodible soils, highly permeable soils and non-tidal wetlands not included in the RPA. In Richmond County, all land area that does not fall within the RPA has been deemed to fall under the RMA.

Tidal Wetlands Zoning Ordinance

Richmond County has adopted and enforces a Wetlands Zoning Ordinance, administered by the Richmond County Wetlands Board. The permitting process of the Wetlands Board minimizes developmental impacts upon tidal wetlands and seeks to protect those wetlands that are ecologically important to the County. Citizens seeking to protect their property from losses due to shoreline erosion are encouraged, where appropriate, to establish naturally vegetated wetlands in lieu of constructing bulkheads or riprap structures. Where bulkheads or riprap are allowed, they are required to be placed landward of the wetlands. Boat ramps and other water-dependent uses of the shoreline are encouraged to locate in areas of non-vegetated or lesser quality wetlands.

Non-tidal Wetlands Protection

Richmond County adopted performance criteria, as required by the Chesapeake Bay Preservation Act, which offers protection to non-tidal wetlands from the impacts of land use and conversion. Non-tidal wetlands adjacent to tidal wetlands receive the highest degree of protection, including a vegetated buffer landward of these wetlands. Other isolated non-tidal wetlands also receive some level of protection from encroachment.

If the Hydric Soils map and the Wetlands map were overlaid, it will be seen that the pattern is similar. Hydric soils, however, cover a much larger area than do the wetlands in the official inventory.

Beaches and Dunes

Dunes and beaches provide critical habitat for a number of important plant and animal species, filter fresh water before it reaches salt or brackish water, and provide a buffer and wave energy absorption so that properties are protected from shoreline erosion.

Protection of dunes and beaches is not afforded under the Tidal Wetlands law. In response to studies that highlighted dunes as the first line of defense against erosion of bay and ocean shorelines Virginia enacted the Coastal Primary Sand Dune Protection Act in 1980 and expanded it to include beaches in 1989. Nine localities, known to have existing coastal primary sand dunes, were named in the Act and required to adopt the Act through ordinance. Beaches and primary dunes in these 9 localities were placed under the local Wetlands Board jurisdiction.

At the time of the original legislation, coastal primary sand dunes were known to exist in the nine localities, but there was no comprehensive inventory of dune or beach resources. A series of studies funded by the Virginia Coastal Zone Management Program and conducted by the Virginia Institute of Marine Sciences (VIMS) showed that extensive dune and beach resources were unprotected, especially from the impacts of shoreline hardening structures such as rock revetments and wooden bulkheads. Designed to control shoreline erosion, these structures can also affect dune and beach habitats and decrease the amount of sand necessary to maintain beaches. On February 22, 2008, the Governor of Virginia signed legislation to help protect these

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important coastal resources by expanding the reach of the “Coastal Primary Sand Dunes and Beaches Act” from the original nine localities to the entire Virginia coastal zone.

With expansion of this legislation, more localities have the ability to manage these critical resources by adopting a local dunes zoning ordinance. If a coastal locality chooses not to adopt the ordinance, the Virginia Marine Resources Committee (VMRC) will regulate development affecting dunes and beaches in that locality. If a coastal locality chooses to adopt the ordinance, it will be administered by its local wetlands board. On September 11, 2008, the Richmond County Board of Supervisors adopted the Coastal Primary Sand Dune Zoning Ordinance.

"Beach" means the shoreline zone comprised of unconsolidated sandy material upon which there is a mutual interaction of the forces of erosion, sediment transport and deposition that extends from the low water line landward to where there is a marked change in either material composition or form such as a dune, bluff, or marsh, or where no such change can be identified, to the line of woody vegetation or the nearest impermeable man-made structure, such as a revetment, bulkhead or paved road.

"Coastal primary sand dune" or "dune" means a mound of unconsolidated sandy soil contiguous to mean high water, whose landward and lateral limits are marked by a change in grade from ten percent or greater to less than ten percent and upon which grow species of dune vegetation named in the Act.

Section D: Shoreline Conditions

Shoreline Inventory

(See Part III Maps Pg. 10)

Richmond County Shoreline Structures					
Miles Surveyed	Number of Piers	Number of boat ramps	Number of groin fields	Miles of bulkhead	Miles of riprap
262.94	317	57	31	5.13	3.51
Source: Center for Coastal Resources Management, Richmond County Shoreline Situation Report, 2003. Comprehensive Coastal Inventory Program, Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, Virginia, 23062					

A recent review of information available via Google Earth produces similar results and would add 88 boat lifts to the data. At this time, there is no indication that Virginia Institute of Marine Science (VIMS) will conduct another shoreline situation report for Richmond County. The County does not track shoreline structures by boat, as did the VIMS team in the above survey. County issued building permits do not track groin fields or miles of riprap or bulkhead. However, the permit database reveals that between May 17, 2001 and March 10, 2010, ninety (90) permits for piers were issued.

Existing Shoreline Area Land Use

In 2003 VIMS published a 2001 shoreline inventory land use, bank and buffer condition. The survey revealed 263 miles of shoreline of which the land uses are: 9% agriculture, 49% forest, 1% grass 6% residential and 34% is classified as scrub-shrub. The remainder is dispersed in small fractions to bare ground, commercial and paved land. This data was collected prior to Hurricane Isabel.

Bank conditions are inventoried on the basis of low to high erosion rates and the length of undercut banks. Of the 263 miles 97% is eroding at a low rate and less than half a percent of the shoreline has an undercut bank. 95% of the shoreline has full bank vegetative coverage and 4% has at least partial vegetative coverage. 85% of the shoreline has stable marsh present.

Tidal Marshlands

Overall, there are 7.4 square miles (4,723 acres) of marshlands within Richmond County. For the complete inventory, the reader should refer to the "Richmond County Marsh Inventory," VIMS, 1990.

Among the many roles played by marshlands, according to VIMS, is that they serve as a buffer to erosion.

"Marshes can be eroded, but some, particularly the more saline types, are eroded much more slowly than adjacent shores which are unprotected by marsh. This buffering quality is derived from the ability of the vegetation to absorb or dissipate wave energy by establishing a dense root system which stabilizes the substrate."

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Section E: Access to Waterfront Areas

(See Part III Maps Pgs. 2, 3)

The Chesapeake Bay Area Public Access Plan prepared by the Chesapeake Executive Council, 1990 lists several specific facilities that are included in the waterfront access inventory. A study by the Northern Neck Planning District Commission (NNPDC) listed 16 boat ramps within the County, although it did not specifically differentiate between public and private ramps. Existing landings and water access sites as of 2010 are listed:

Existing Public (No Fee) and Private (Fee) Access Sites

SITE	LOCATION AND EXISTING USE(S)
1. Carters Wharf Landing (Public)	Location: Rappahannock River Features: Boat ramp and natural heritage area, fishing, dramatic view of cliffs,
2. Jones Creek Landing (Public)	Location: Rappahannock River Features: Fishing
3. Naylor's Beach (Private)	Location: Rappahannock River Feature: Boat Landing, beach, swimming and camping
4. Totuskey Creek Landing (Public)	Location: Totuskey Creek Features: Boat ramp, pier fishing, dock
5. Whelans Marina & Camp Ground (Private)	Location: Rappahannock River/Morattico Creek Features: Boat Sales, Boat Landing, fuel sales, repairs, store, showers, restrooms, and Camping Facilities
6. Simonson Landing (Public)	Location: Morattico Creek Features: Boat landing, bank fishing
7. Farnham Creek Landing (Public)	Location: Farnham Creek Features: VDOT site - car top boats only, nature study/education
8. Heritage Park Resort (Private)	Location: Cat Point Creek Features: Boat landing, lodging, and camping facilities

Source: Richmond County Comprehensive Plan Review Committee, 2010

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Access to Public Water

Most of the areas defined as providing access are located on tributaries to the Rappahannock: Lancaster Creek, Farnham Creek, Totuskey Creek, and Cat Point Creek some are along the shoreline of the Rappahannock River.

The primary source of this information was the Access Plan, which can be used in several ways. First it is intended that the features identified by the study be incorporated into local Comprehensive Plans. Second, the elements of the Access Plan have already received preliminary screening for access, although the Plan points out that more through review will be required for specific site utilization and to assure compatibility of the intended use with the overall Chesapeake Bay Preservation Program. Next, the Access Plan's focus is primarily on public access; however, its framework is such that the development of private facilities for public use is encouraged.

The Access Plan identifies the following conditions or types of areas to be considered in developing water access facilities:

1. Shoreline Areas—Areas where erosion in excess of two feet per year has been experienced. Each locality is encouraged to avoid these areas when planning to access public waters.
2. Major Wetlands – Digital line graph (DLG) wetlands shown on 100,000 scale USGS maps. Smaller wetland areas are not included in the use of the Access Plan.
3. Natural Heritage Sites – Sites which are known to be a natural heritage resource for rare, threatened, or endangered species, which have been inventoried as part of the State's or federal agency's natural heritage program.
4. Cultural Resources – Resources within one-half mile of a water body, which have been listed in the National Register of Historic Places
5. Existing Beaches – Beaches, which may be large enough to accommodate some public use.
6. Existing Private Access – Marinas and other similar types of recreational boating facilities containing 10 or more slips.
7. Potential Access Sites – Areas where additional access is planned or recommended.

Possible Impacts on Water Quality

As the County and State move to develop additional utilization of the Chesapeake Bay, the Rappahannock River, and its tributary creeks for additional recreational purposes, several potential impacts are likely:

1. The most dominant use of the public waters is likely to be for boating. Since most, except the smallest of sailboats, have motors, the waters are unavoidably exposed to the residue from gasoline or diesel powered engines.
2. Shoreline installations provide an opportunity for pollution from such sources as fueling of boats, sanitary facilities, and in general litter that comes from concentrating equipment and activity at a few locations.

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3. There is the problem of boat wakes and potential shoreline erosion caused by the movement of boats near the shoreline.
4. Commercial recreational sites and campsites that provide for a concentration of use near the water contribute pollution from storm water runoff, swimming, failed sanitary facilities, and a concentration of boat motors.

Section F: Population of Richmond County

(See Part III Maps Pg. 11)

No other factor is more important in the planning process than having an accurate assessment of the County's population. Looking at the historic numbers and a well performed analysis of current trends allows Richmond County to make reasonable projections about future populations.

NOTE: Release of US Census 2010 data at the time of this writing is incomplete. Because release of data is in the early stages, the only Census 2010 data inserted in the Plan is the Population Distribution Map in Part III, Mapping. Data tables and the supporting narratives must be revised when 2010 information is obtained.

Richmond County Population

Year	1997	2000	2007 (Est.)	2010 (Est.)	2020 (Est.)	Change 97-07
Population	8708	8809	9171	9333	9900	5.3%

Source: U.S Census 2000, Virginia Employment Commission

Historic Trends

Over the last ninety years, the population of Richmond County has fluctuated between periods of positive and negative growth. Population growth since 1990 is due to the opening of the Haynesville Correctional Center and the Northern Neck Regional Jail.

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Historic Population Trends

Year	Population	Change (From Previous Count)
1910	7,415	-
1920	7,434	0.2%
1930	6,878	-7%
1940	6,634	-4%
1950	6,189	-7%
1960	6,375	3%
1970	6,504	2%
1980	6,952	7%
1990	7,273	5%
2000	7,620*/8,809	1% / 20%
2010**	9,333**	6%

Source: Richmond County Comprehensive Plan, US Census 2000, and Virginia Employment Commission.

*Population removing the incarcerated portion of the county.

**Estimate from the Virginia Employment Commission for 2010 includes jail population:
www.vec.virginia.gov

Distribution and Density

The population density of Richmond County as of the 2000 Census was 46.0 persons per square mile. This compares to a statewide average of 178.8. Richmond County has the lowest population density in the Northern Neck and second lowest in the region (including Essex County). See 2000 Census

Population of Voting Districts from Census 2000 (includes incarcerated)

District	Population
District 1	1,180
District 2	2,689
District 3	1,723
District 4	1,562
District 5	1,655

As of the 2000 census there were five voting districts in the County. These districts include the Town of Warsaw, a separate political entity.

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Regional Population Projections*

County	2000	2010*	2020*
Lancaster	11,567	11,485	11,477
Northumberland	12,259	13,420	14,587
Richmond	8,809	9,333	9,900
Westmoreland	16,178	17,483	18,336
Essex	9,989	10,969	11,960
Northern Neck	48,813	51,721	54,300

Source: Virginia Employment Commission and US Census 2000. (Includes inmate population)

Age Distribution

Like many parts of the country, Richmond County is experiencing an ageing population. As of the 2000 census, 22.6% of the population was 60 plus, and according to projections by the Virginia Employment Commission the percentage of the population age 60 plus will increase to 24.8% by the year 2020.

Census 2000 and Virginia Employment Commission 2020 Population by Age

Subject	Total Count	Percentage of Total	Projected Count	Projected Percentage of Total
	Census 2000	Census 2000	VEC 2020	VEC 2020
Under 5 years	360	4.1%	447	4.5%
5-9 years	425	4.8%	445	4.5%
10-14 years	490	5.6%	443	4.5%
15-19 years	518	5.9%	432	4.4%
20-24 years	532	6.0%	599	6.0%
25-34 years	1,238	14.0%	1,434	14.5%
35-44 years	1,567	17.8%	1,683	17.0%
45-54 years	1,232	14.0%	1,329	13.4%
55-59 years	462	5.2%	619	6.3%
60-64 years	428	4.9%	623	6.3%
65-74 years	757	8.6%	951	9.6%
75-84 years	545	6.2%	554	5.6%
85+ years	255	2.9%	341	3.4%
Total	8809	100%	9900	100%

Source: US Census 2000 and Virginia Employment Commission

Attempting to look at the population without inmate population proves to be a difficult task. Census did not provide a subset of the total population by ages for the correctional centers. As a result, the most accurate way to look at the population is by examining only the female population of the county. The majority of inmates at the Haynesville Correctional Center and Northern Neck Regional Jail are men.

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Female Population of Richmond County by Age and Total Male County Population

Subject	Census 2000 Female Population	Female Percentage of Total Female Population	Census 2000 Male Population (including inmates)
Under 5 years	175	4.5%	185
5-9 years	204	5.3%	221
10-14 years	219	5.7%	271
15-19 years	247	6.4%	271
20-24 years	155	4.0%	377
25-34 years	391	10.1%	847
35-44 years	557	14.4%	1,010
45-54 years	521	13.5%	711
55-59 years	233	6.0%	229
60-64 years	216	5.6%	212
65-74 years	435	11.3%	322
75-84 years	328	8.5%	217
85+ years	189	4.9%	66
TOTAL	3,870	100%*	4,939

Source: US Census 2000

*Rounding will cause percentages to deviate from 100

When comparing the female population against the total population one can see discrepancies in the population counts at certain age brackets, notably 25-54 years. Most residents know that there is not nearly a 2:1 ratio of males to females in the 25-54 year age bracket, that some of those are inmates. Due to the skewed numbers presented by the inmate population and only looking at the female population it becomes apparent that the population of Richmond County is aging.

Across the United States, the percentage of those aged 65 and over was 12.4%. In Richmond County, population (assuming there are no inmates over age 65) was 21.2%, nearly twice the national average.

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Major factors that influence population growth and trends include natural causes and migration. Census data show that 29.5% of residents in Richmond County indicated they lived outside the county before 1995. Furthermore, Richmond County has been losing population through natural causes for the last seventeen years. The last year of natural increase was 1989. Since 1993, the population has declined by 425 due to natural causes.

Natural Increase: 1993-2007

<i>Year</i>	<i>Number of Births</i>	<i>Number of Deaths</i>	<i>Natural Increase</i>
1993	84	91	-7
1994	68	89	-21
1995	74	111	-37
1996	70	119	-49
1997	74	122	-48
1998	71	99	-28
1999	79	114	-35
2000	81	116	-35
2001	77	102	-25
2002	92	117	-25
2003	82	107	-25
2004	95	113	-18
2005	90	128	-38
2006	95	128	-33
2007	123	124	-1
Total	1,225	1,680	-425

Source: Virginia Department of Health

Section G: Education in Richmond County

The general education statistics presented highlight the educational attainment status of Richmond County's residents. School enrollment in the school system decreased 3.2 % from the 1999-2000 school year to the 2007-2008 school year. Student teacher ratios have remained unchanged in 2007-2008.

Education in Richmond County

	1999-2000			2007-2008	
	Number of Schools	Number of Students	Teacher/Pupil Ratio	Number of Students	Teacher/Pupil Ratio
K-5	1	555	1:18	553	1:18
6-12	2	700	1:14	662	1:14
Total		1,255		1,215	

Source: Virginia Department of Education, Richmond County Schools Report 4/7/09, Comprehensive Plan 2001, and Richmond County School Board.

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High School and College Graduation Attainment for Persons 25 Years and Over

	Census 1990	Census 2000	Change 1990-2000
Richmond County General Population Education Attainment	56.8%	60%	3.2%
Virginia Population Education Attainment	75.1%	81.5%	6.4%
Difference (RC-VA)	(18.3%)	(21.5%)	(3.2%)
Richmond Co. General Population Bachelors Completion	11.0%	9.9%	(1.1%)
Virginia General Population Bachelors Completion	(unable to locate)	29.5%	(unknown)
Difference (RC-VA)	(unknown)	(19.6%)	(unknown)

Source: US Census 2000; data includes inmate population.

General Education Statistics for Persons 25 years and Over

Education Level	Population over 25	Percentage of Population
HS/GED	2,047	31.2%
Some College	1001	15.3%
Associate Degree	230	3.5%
Bachelors Degree	495	7.6%
Post Graduate Degree	155	2.4%

Source: US Census 2000

School Enrollment and Type of School, age 3 and older

Type	Number	Percent
Pre-School Total	71	4.1
Public	37	2.1
Kindergarten Total	64	3.7
Public	56	3.2
Elem. 1-4 Total	402	23.1
Public	368	21.1
Elem. 5-8 Total	417	23.9
Public	404	23.2
HS 9-12 Total	491	28.2
Public	445	25.5
Undergraduate Total	270	15.5
Public	218	12.5
Graduate Total	28	1.6
Public	23	1.3

Source: US Census 2000

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School Expenditures

During the 2007-2008 school year, the total expenditures for public schools in Richmond County were up 72.5 % from the 1997-1998 school year. From the 2007-2008 school year, funding from the federal level was down 1.2% from the 1997-1998 school year. Funding from state and state tax provided for the 2007-2008 school year was down 2.1% from the 1997-1998 school year. Local funding for school expenditures in 2007-2008 was up 3.4% from the 1997-1998 school year.

Local Expenditures and Sources of Financial Support for Public Schools

1997-1998 School Year					
Locality	Local	State	State Retail & Use Tax	Federal	Total Expenditures for Operations
Richmond County	34.0%	48.1%	10.0%	7.8%	\$6,886,879
Northern Neck	43.2%	38.8%	10.1%	7.9%	\$39,081,168
Virginia	49.3%	35.5%	9.3%	5.9%	\$6,816,647,975
2007-2008 School Year					
Richmond County	37.4%	47.3%	8.7%	6.6%	\$11,879,926
Northern Neck	46.7%	34.8%	9.3%	9.1%	\$58,738,577
Virginia	49.9%	34.9%	8.7%	6.5%	\$13,206,794,545
Total Expenditures					
Percent Change from 1997-1998 to 2007-2008 in Richmond County					72.5%
Percent Change from 1997-1998 to 2007-2008 in the Northern Neck					50.3%
Percent Change from 1997-1998 to 2007-2008 in Virginia					93.7%

Source: Richmond County Comprehensive Plan 2001, Virginia Department of Education, Superintendents Annual Report, 2007-2008.

Section H: Housing in Richmond County

Housing Composition

The most accurate data regarding housing composition comes from the US Census. The last census performed in Richmond County took place in 2000. While that information is approaching ten years in age, it still provides an in depth look at housing composition in Richmond County. For the most recent data, visit www.census.gov.

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The U.S. Census Bureau defines the term household as, “a house, an apartment, a mobile home, a group of homes, or a single room occupied (or if vacant, intended for occupancy) as separate living quarters. People who do not live in a household are qualified as living in a group quarters. These include both institutionalized and non institutionalized living areas. As of the 2000 Census, there were 2,937 households in the county with 7,057 residents or approximately 2.4 people per household. There were also 1,752 people living in group quarters, with 1,725 falling under the institutionalized definition of group quarters, likely the population of the Haynesville Correctional Center and the Northern Neck Regional Jail.

Looking at the households of Richmond County is critical in analyzing the local and regional housing market. Household requirements depend on the size of the household and income. Both play a factor in determining the type and cost of housing that can be afforded by residents of the community.

Housing Types

The County’s overall housing stock increased by 8.8 % from 1990. In 2000 single family homes accounted for 79.6 % of overall housing units in the county. Manufactured homes accounted for 12.8% of housing units in the county.

Distribution of Housing Type

Type	2000
Single-family (1 Unit Detached)	2,797
Multi-family (1 or more units attached)	250
Manufactured Home	449
Other	16

Source: US Census 2000

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Number of Building Permits

Building permits are another valuable source of information for analyzing past growth trends. Permits for new construction have fluctuated for over time due to a multitude of factors. The most popular permit pulled for construction over the period presented was for single family residences.

Residential Building Permits

Year	Single Family	Multi-Family (number of dwelling units)	Single Wide	Double Wide	Total Residential Units
2010	26	2	4	4	36
2009	17	20	11	2	50
2008	22	14	12	2	50
2007	33	0	9	3	45
2006	30	0	14	5	49
2005	48	0	11	10	69
2004	48	8	10	17	83
2003	54	16	6	9	85
2002	46	4	21	16	87
2001	56	4	26	15	101

Source: Richmond County Building and Zoning Database

Since 1990, household size has decreased by 0.2 persons per household to 2.4. Across Virginia and the United States, average household size is 2.54 and 2.59 respectively.

Within Richmond County, the majority of housing units are owner-occupied. Making up 22.6% of occupied units, rental properties are less than one quarter of the total number of housing units in the county. As of 2000, the median home value in Richmond County was \$86,700; however, a 2007 survey found that number to be closer to \$178,000. This rapid increase in price has made finding affordable housing difficult for some in the county. While this is still below the average home price in Virginia, it should be noted that waterfront property continues to be desirable and to increase in value. The greater expense of waterfront property likely offsets the lower costs of manufactured homes.

Housing Characteristics

Characteristics	1990	2000	Percent Change
Occupied Units	2,645	2,937	11.0 %
Owner-Occupied	2,155	2,273	5.4 %
Renter-Occupied	490	664	35.5 %
Median Value	\$63,100	\$86,700*	35.4 %*
Persons Per Unit	2.6	2.4	-7.6 %

Source: US Census 2000, 1990

*2005-2008 avg. Richmond County sales price was \$223,438 (Northern Neck Housing Study).

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The price of real estate increased drastically from 2000-2010. Census figures from the 2010 census will likely show this increase.

In Richmond County, the median age of homes in 2000 was 27 years old. In 1990, the median age was 25 years. However with the recent real estate boom it is likely that the median age of homes in the county will decrease with the release of the next census in 2010. In 1990, 10.0% of homes in Richmond County lacked complete plumbing; by 2000 this number had decreased to 3.5%, but is still high against the state average of 0.7%. 7.0% of homes lacked complete kitchens in 1990, and as of the 2000 census 2.2% of homes still lacked complete kitchens, compared to a state average of 0.6% of homes.

Total Housing Units that Lack Complete Plumbing and Kitchen Facilities

	Total # of Housing Units	Percent Housing units lacking Complete Plumbing	Percent Housing Units Lacking Complete Kitchens	Percent Housing units Built 1939 or Earlier	Median year Built
Richmond	3,512	3.5%	2.2%	15.4%	1973
Virginia	2,904,192	0.7%	0.6%	0.6%	unknown

Source: US Census 2000

Section I: Economic Characteristics

Sources of Income

One of the most important indicators of a communities needs is the income level of the citizenry.

Income Levels by Voting District, in 1999 dollars

Household income was uniform throughout Richmond County with District 4 having the lowest household income and District 3 having the highest household income. Both PCPI (Per Capita Personal Income) and Family Income showed similar trends. The median family income for the United States was \$50,890 as reported in the 2000 census.

	Household Income	Per Capita Personal Income	Family Income
District 1	\$34,750	\$17,872	\$48,148
District 2	\$33,095	\$12,176	\$41,181
District 3	\$37,014	\$20,590	\$49,213
District 4	\$28,958	\$17,381	\$33,000
District 5	\$32,647	\$18,420	\$41,513

Source: US Census 2000

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Per Capita Personal Income

More recently, data has shown that per capita income has increased in Richmond County, the Northern Neck, and Virginia. In 2006, the per capita income in Richmond County was \$22,224 or a 36.7% increase from 1998 levels. At the state level, the per capita income was \$39,173, showing an increase of 39.6% from 1998 levels. While Richmond County shows a lower per capita income level it is encouraging to see growth rates that are nearly similar to the statewide average.

	Per Capita Income 2006	Change from 1998
Lancaster	\$41,695	53.6%
Northumberland	\$31,194	44.1%
Richmond	\$22,224	36.7%
Westmoreland	\$29,673	46.1%
Virginia	\$39,173	39.6%

Source: Virginia Workforce Connection www.vawc.virginia.gov

Poverty Levels

Another important metric used to judge overall community well being is the poverty status of those living in Richmond County. Like in 1990, the census of 2000 calculated the poverty status of all county residents. In 1999, the poverty level for a family of four was \$16,700.

The information provided in the following table shows that a large portion of Richmond County is living at or below the established poverty level. Approximately one out of every six people living in Richmond County was in poverty at the time of the 2000 Census. The percentage of all ages in poverty in 2000 was 15.4% compared to 15.8% in 1990.

Total Persons with Income Below Poverty Level, 2000

	District 1	District 2	District 3	District 4	District 5	Richmond County
All Ages	20.5%	15%	9.7%	15.2%	17.7%	15.4%
Children under 18	28.2%	20.2%	11.7%	17.2%	28.5%	21.2%
Age 65 and over	16.9%	8.2%	14.0%	15.2%	6.3%	12.5%
Families	16.8%	14.4%	5.7%	9.4%	13.9%	11.9%

Source: US Census 2000

Workforce Participation

The labor force is defined as individuals aged 16 and older, employed or actively seeking employment. According to the 2000 census, there were 7,400 individuals in Richmond County over 16 years of age or 84% of the total population. Of those 7,400 over age 16, those who were employed or seeking employment numbered 3391 people or 45%. Unlike the past, the majority of labor force percentage of population was female.

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The local labor force is also being supported by increasing numbers of transient and seasonal workers. This is most noticeable in the agricultural sector with emphasis on large operations such as nurseries and vegetable growing, both of which are labor intensive. Richmond County currently has two licensed Migrant Labor Camps that house seasonal workers but the actual numbers are much higher since many of these workers prefer to obtain their own housing.

Labor Force Participation

In 2000 of the total population, 41.5% of males age 16 years and older were members of the labor force. That compares to a 51.4% of females. The participation rate of males has declined since 1990 from 68%, partly due to the opening of the Haynesville correctional center. The census counts those men at the correctional center as residents of the county, but not as members of the labor force due to their status.

	Employed	Unemployed	Rate	Not in Labor Force	Persons 16 and Over
Male	1,637	84	2.0	2,449	4,187
Female	1,564	85	2.6	1,560	3,213
Total	3,201	169	2.3	4,009	7,400

Source: US Census 2000

Unemployment Rates

During the 2000-2009 period, the annual unemployment rate fluctuated between 4.3%-9.4%. During the same time period, the unemployment rate of other counties in the Northern Neck fluctuated between 3.5%-14.3%. The unemployment rate in Richmond County continues to surpass both the national rate and the unemployment rate of the Commonwealth.

Historical Unemployment Rate

Year	Richmond County	Virginia
2000	4.3%	2.3%
2001	4.1%	3.2%
2002	5.6%	4.2%
2003	6.2%	4.1%
2004	5.2%	3.7%
2005	4.7%	3.5%
2006	4.8%	3.0%
2007	4.3%	3.0%
2008	5.0%	3.9%
2009	7.9%	6.7%

Source: Virginia Employment Commission

Sources of Employment within the County

Within Richmond County there are four major employers, with 100 or more employees. Northumberland County has zero establishments with 100 or more employees. Lancaster County has five establishments with 100 or more employees, and Westmoreland County's information was not available for disclosure. Having a variety of different types of employment opportunities allows for a more stable local economy and helps to protect against employment loss due to market fluctuations.

Average Weekly Wage

The average weekly wage is an indicator of the overall purchasing and earning power of residents of Richmond County. This data excludes fringe benefits. While there are a number of higher paying jobs in Richmond County, the average weekly wage is only slightly higher than surrounding counties. The average weekly wage is \$350 dollars less than the Virginia average.

Average Weekly Wage, 3rd Quarter 2009

Locality	Weekly Wage (Q3 2009)
Richmond County	\$569
Northumberland County	\$552
Lancaster County	\$558
Westmoreland County	\$476
Essex County	\$511
Northern Neck	\$533
Virginia	\$860*
United States	\$812**

Source: Virginia Employment Commission/Quarterly Census of Employment Wages (QCEW) 3rd Quarter 2009

* Information from QCEW, May 2008 weekly wage figured by multiplying mean wage by 40 hours. See http://www.bls.gov/oes/2008/may/oes_va.htm#b00-0000

** Data from May 2008. See above for methodology

Agricultural Production

For generations, farming has been a vital part of Richmond County's economy. Yet, the number of farms and acres farmed has been decreasing steadily for many years. Between 2002 and 2007, the number and size of farms in Richmond County decreased by 17 and by 7,112 acres. This decrease has been a fairly constant trend over the past 43 years of data collection however between 1992 and 2002 Richmond County saw an increase in farms and their acreage.

While a myriad of reasons could be attributed to the decrease in both the number of farms and total acreage farmed, it is important to note that the cost of farming has increased faster than profits can be obtained. As increased costs and other concerns make farming less desirable, smaller farms have either stopped operating or have merged or leased land to larger farming operations. Larger farms have also been able to increase the operations by clearing previously

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forested land. As population in the county continues to increase more farm land will be converted to nonagricultural practices.

Number of Farms in Richmond County: 1964-2007

Year	Number of Farms	Total Acreage	Average Size
1964	360	66,581	168
1969	242	47,109	195
1974	227	45,047	198
1978	206	42,822	208
1982	193	43,355	225
1987	148	39,091	264
1992	129	38,040	302
1997	139	36,360	262
2002	141	44,471	318
2007	124	37,359	301

Source: Agricultural Census, US Dept. of Agriculture, 2007

Land in Farms According to Use: 1997-2007

Category	1997		2002		2007	
	Farms	Acres	Farms	Acres	Farms	Acres
Total Cropland	132	25,519	141	30,307	105	24,216
Harvested Cropland	120	23,416	112	27,445	89	22,999
Cropland for Grazing and Pasture			23	1130	8	217
Other Cropland			32	1,732	36	31
Woodlands, including Woodlands Pastoral			88	12,987	78	8,335
Pasture and Rangeland, other than Cropland and Woodland Pasture			19	679	46	3,094
Land in House Lots, Ponds, Roads, Etc			48	807	65	1,714
Irrigated Land	8	121	10		2	4035

Source: Agricultural Census, US Dept. of Agriculture, 2007

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Quantity and Acres Planted in 2002, 2007 Richmond County

	2002 Quantity (Bushels)	2002 Acres	2007 Quantity (Bushels)	2007 Acres	% Change Quantity
Corn	787,535	11,373	460,227	9,921	-41.6%
Wheat	366,402	5,626	388,879	6,216	6.1%
Soybeans	308,968	12,908	211,903	10,403	-31.4%
Forage	*	1,103	1090 (tons)	867	

Source: Ag Census 2002 & 2007

* Information not published.

Quantity and Acres Planted in 2002, 2007 Virginia

	2002 Quantity (Bushels)	2002 Acres	2007 Quantity (Bushels)	2007 Acres	% Change Quantity
Corn	22,656,691	335,692	34,811,582	401,070	34.9%
Wheat	16,213,252	174,887	12,345,217	200,342	-23.9%
Soybeans	11,025,598	467,210	12,624,547	490,396	14.5%
Forage	2,393,852 (tons)	1,347,229	2,464,783 (tons)	1,305,624	3.0%

Source: Ag Census 2002 & 2007

An analysis of the productivity of farmland begins by looking at the quantity and acres planted, in 2002, 787,535 bushels of corn were harvested from 11,373 acres, which is a yield of just under 70 bushels per acre. This number was slightly higher than the state average of approximately 65 bushels per acre. While there are some irregularities between yields at the county and commonwealth level, most are closely inline with one another.

In the past, the tomato industry was vibrant in the county. As of the 2007 Agricultural census only 3 farms were still growing tomatoes, harvesting a total of 15 acres. Unlike the past, these tomatoes were not sent to canning facilities, but were produced for fresh consumption.

Total Taxable Sales

Taxable sales have increased in the county by 3.5% since 2004.

Taxable Sales

Year	Richmond County	Virginia
2004	\$60,727,610	\$81,291,171,472
2005	\$55,858,292	\$77,290,441,767
2006	\$61,871,971	\$89,478,625,283
2007	\$63,615,951	\$92,038,552,331
2008	\$62,862,965	\$90,106,122,079

Source: University of Virginia Weldon Cooper Center, 2009

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Taxable Sales by Business Classification

Total taxable sales can show the amount of revenue generated by a locality, however; breaking those sales down by classification shows specifically where that revenue is being generated. In just looking at the change from 2007 to 2008, it is apparent that rental and leasing services experienced growth while clothing and clothing stores saw revenues decline. Sales of food and beverages accounted for 27.8% of all taxable sales generated in Richmond County in 2008.

Taxable Sales by Business Classification

Classification	Amount	Change '07-'08
No Information	\$1,834,079	-4.2%
Merchant Wholesalers (Durable Goods)	\$704,222	-16.1%
Merchant Wholesalers (Nondurable Goods)	\$554,724	(not available)
Motor Vehicle Parts and Dealers	\$3,704,096	-16.0%
Furniture and Home Furnishing Stores	\$2,394,830	-13.0%
Building Materials/Garden Equipment	\$950,633	-21.1%
Food and Beverage Stores	\$13,128,735	-0.9%
Gasoline Stations	\$2,890,769	34.1%
Clothing and Clothing Accessories	\$650,231	-32.5%
Sporting Goods, Hobby, Book, Music	\$23,243	-14.7%
General Merchandise Stores	\$5,338,753	37.8%
Miscellaneous Store Retailers	\$2,870,203	0.9%
Nonstore Retailers	\$6,463,688	10.2%
Rental and Leasing Services	\$773,728	54.1%
Food Services and Drinking Places	\$5,887,606	-1.5%
Repair and Maintenance	\$575,757	-17.5%
Personal and Laundry Services	\$537,695	16.0%
Total	\$48,728,268	2.1%

Source: Virginia Department of Taxation 2009

Tourism

Tourism represents an important income producing activity, not only for the commonwealth, but for Richmond County as well. Within Richmond County and across the Northern Neck there are several developed or developing tourist attractions. However, tourism dollars go much further than just those spent at various attractions.

While travel expenditures have increased in Richmond County since 2003, they remain lower than the other counties of the Northern Neck and Essex County.

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Impact of Travel for Richmond County

Year	Travel Expenditure	Payroll Generated	Employment Generated	State Tax Receipts	Local Tax Receipts
2003	\$ 20,551,087	\$ 9,387,674	361	\$ 747,503	\$ 500,935
2004	\$ 22,716,870	\$ 9,930,806	372	\$ 825,404	\$ 553,240
2005	\$ 22,909,218	\$ 9,387,409	348	\$ 809,047	\$ 549,304
2006	\$ 24,462,255	\$ 9,689,037	350	\$ 843,349	\$ 580,799
2007	\$ 25,525,332	\$ 9,667,209	348	\$ 861,396	\$ 603,144

Source: Virginia Tourism Corporation

Section J: Community Facilities

Emergency and Fire Protection

Emergency services and fire protection for Richmond County are provided by two agencies that function separately but work together to provide a safe community.

Richmond County Volunteer Fire Department professionally serves 205 square miles of area with 3 stations throughout the county and a group of very dedicated volunteers. The following is a brief description of resources currently available through the fire department.

Station 1 in Warsaw serves as the headquarters for the Richmond County Volunteer Fire Department and houses 1 pumper carrying 1,000 gallons of water and 2 tankers with a combined water capacity of 4,250. The Warsaw station also is home for a light duty rescue truck and 40 volunteer members.

Station 2 is located in Farnham and has 20 dedicated volunteer members along with 1 pumper with a capacity of 1,000 gallons of water, 1 tanker with 1,250 gallons of water, and 1 brush truck with 250 gallons of water, along with a light duty rescue truck.

Station 3 is the newest addition to the Richmond County Volunteer Fire Department and serves the residents in the Newland area. Station 3 was built with community donations, the station houses 25 volunteers operating 1- 1,000-gallon pumper, 1 tanker with 1,250 gallons of water, and a response vehicle.

The Richmond County Department of Emergency Services serves the citizens and visitors in two capacities. The Chief of Emergency Services is responsible for pre-planning, response and mitigation of large-scale incidents, as well as oversight of emergency services for the county. The division is also responsible for emergency medical responses and staffs two (2) Advanced Life Support ambulances equipped with the newest equipment available. Ambulances are staffed 24 hours a day with a paramedic and an Emergency Medical Technician and can transport patients to either Riverside Tappahannock Hospital or Rappahannock General Hospital.

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Police Protection

The residents of Richmond County are afforded police protection through the County Sheriff's Department and the Virginia State Police. The Richmond County Sheriff's Department presently consists of the Sheriff, ten (10) full-time deputies, five (5) part-time courtroom security officers, six (6) dispatchers, and two (2) secretaries. Special regional training programs are conducted by the Rappahannock Regional Training Academy, Fredericksburg, Virginia. In addition, the Rappahannock Community College in Warsaw offers law enforcement training courses within its curriculum. The sheriff and deputies have at their disposal twelve (12) radio-equipped police cars, such vehicles being retired from service after being operated for more than 100,000 miles. The size of the force is adequate to meet normal requirements, but is considered insufficient to meet problems brought on by seasonal influxes of visitors and temporary residents as well as inadequate night patrols. The Sheriff's headquarters are in Warsaw and jail facilities are provided by the Northern Neck Regional Jail.

Three (3) Virginia State Troopers cooperate with and assist the Sheriff's Department when the need arises. In addition, the Town of Warsaw has its own police force that operates within the town limits. The Town of Warsaw police force consists of a chief of police, two (2) police officers and a part-time administrative assistant as well as four (4) radio-equipped police cars.

Medical Facilities

The Richmond County Public Health Department maintains an office in Warsaw and is staffed by a nurse, an environmental health specialist, a dentist, and a health director. Services at the health department include mother-child health care, preschool, family planning, tuberculosis, and immunization clinical services. Environmental services offered include private well and sewage disposal system permitting and oversight as well as food establishment evaluation and permitting. Other environmental services include communicable disease investigation, lead exposure investigation, campground and migrant labor camp inspection, rabies control, and shoreline pollution abatement. Various informational and preventative health clinics are held on a regular basis throughout the year.

There is one general practitioner and one pediatrician practicing within Richmond County. Two dentists and one orthodontist also practice within the County and one (1) pharmacy is located within the Town of Warsaw.

Richmond County is home to several facilities specializing in the care of the elderly. There are currently two (2) nursing homes, within the Town of Warsaw, and two (2) adult homes within the County, one (1) in Warsaw and one (1) in Farnham.

Richmond County is currently served by Riverside Tappahannock Hospital and by Rappahannock General Hospital in Kilmarnock. The Riverside Tappahannock Hospital is a 100-bed facility, which is nine (9) miles from Warsaw. It offers services in general surgery and emergency care. Rappahannock General Hospital is a 78-bed facility, which is thirty (30) miles from Warsaw, and specializes in the same services. Extensive medical facilities are only fifty (50) miles away, in the cities of Richmond and Fredericksburg.

PART II INVENTORY AND ANALYSIS

Recreation

(See Part III Maps Pg. 12)

In any community, there is a need for various types of recreational opportunities, and there is a need for facilities that can support the more active types of recreation. Such activities can include swimming, tennis, team sports, boating, and fishing. Also, there is a need for facilities that can support more passive types of recreational activities. Parks and other areas are needed in order to allow picnicking, camping, hiking, and the overall enjoyment of scenic and natural areas. Such natural and historic areas can serve an educational function as well as a variety of group activities. County government plays an important role in providing for at least some of the recreational facilities that are needed in a community. Instead of creating a separate County Recreation Department, the County government of Richmond County has chosen to support the private/public and non-profit organizations already providing recreational programs within the community. This trend will continue, as long as the Board of Supervisors feels that the recreational needs of the community are being adequately provided.

In Richmond County there are a number of different types of recreational facilities that can support a variety of different activities. In the County there are athletic facilities, boat ramps, large natural areas, and historic sites. There are both public and private recreational opportunities in Richmond County. Public recreation facilities include four (4) tennis courts and two (2) ball fields. There are also public boat ramps on the Rappahannock River and its tributaries. The Rappahannock River provides opportunities for fishing, boating, sailing, and water-skiing. A “for profit” public resort offers swimming, camping, boating, tennis, and other activities. There is also one private swim club.

Richmond County purchased 85 acres adjacent to the commerce park for the purpose of creating a multi-function community park in order to meet the varied recreational needs of the community. In 2002 the Richmond County Community Park Planning Committee adopted the Richmond County Community Park Concept Plan.

Existing Recreational Facilities

- (p) - open to public; no fee
- (f) - open to public; fee
- (m) - private (membership/contract only)

General Recreation

- Pleasant Valley Recreation Center - Private (m)
- Heritage Resort - Private (f)
- Ruritan Tricentennial Park (p)

Swimming Pools and Beaches

- Naylor Beach Campsite - Private (f)
- Pleasant Valley Recreation Center - Private (m)
- Heritage Resort - Private (f)

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Campgrounds

Heritage Resort - Private (f)
Naylor Beach Campsite - Private (f)
Whelan's Marina – Private (f)

Tennis

Pleasant Valley Recreation Center - Private (m)
Rappahannock Community College - Public (p)
Heritage Resort - Private (f)

Marinas and Boat Ramps

Carter's Wharf (Boat Ramp) - Public (p)
Whelan's Marina - Private (f)
Jones Creek (fishing pier, overboard launching) - Public (p)
Simonson's Landing (Boat Ramp) - Public (p)
Totuskey Creek Landing (Boat Ramp and Dock) - Public (p)
Farnham Creek (small boat overboard launching) - Public (p)
Heritage Resort (boat ramp, boat rental, shore fishing) - Private (f)

Ball Fields

Richmond County Community Services Assoc. - Private (m)
Pleasant Valley Recreation Center - Private (m)
Rappahannock Community College - Public (p)
Richmond County Little League Complex - Public (m)

Organized Recreation Programs

Rappahannock High School - Public (f)
Richmond County Intermediate School - Public (f)
Rappahannock Elementary School Public (f)
Rappahannock Community College - Public (f)
YMCA - Public (f)

Scenic Areas

Chinn's Mill Pond - Private (m)
Garland's Mill Pond - Private (m)
Mt. Airy Mill Pond - Private (m)
Ruritan Nature Trail - Public (p)
Tayloe Wildlife Sanctuary - Public (p)
Rappahannock River Refuge - Public (p)

As evidenced by the list of existing recreational facilities, Richmond County appears to have a fair number of recreational alternatives, either public or private. Many recreational needs remain unfilled, or are unavailable to certain sectors of the population due to location, cost, or availability. For example, there are no public beaches in Richmond County.

PART II INVENTORY AND ANALYSIS

Planning for recreational facilities does not have to be and should not be separate from other planning activities. Economic growth and population growth are both linked to recreation, public and private. Tourism, population migration, and age shifts all have a direct bearing on recreational needs, both in type and quantity. Provision of other public services in conjunction with recreation, water impoundments, for example, would give the County an opportunity to mix recreation facilities with other projects.

Churches

There are many churches located in Richmond County and they serve the major Protestant denominations. The nearest Roman Catholic churches are found in adjoining Westmoreland County, Essex County (Tappahannock), and Lancaster County (Kilmarnock). The nearest synagogues are in the cities of Richmond and Fredericksburg. Most of the churches maintain Sunday Schools, youth programs, and other activities.

Lodging

Lodging in Richmond County is provided by a bed and breakfast inn (Greenwood) located in the Town of Warsaw, The Simonson House Cottage, cabin rentals at Heritage Resort, and a Best Western in the Town of Warsaw.

Libraries

Rappahannock Community College houses the Community Library Center, which is the Richmond County public library, the College's Academic Library, and a Public Law Library at the Warsaw campus.

Fraternal Organizations, Service, and Civic Clubs

These include the Masons, Ruritan, Rotary and the Chamber of Commerce.

Section K: Utilities and Communication

Electricity

Most of Richmond County is supplied by Dominion Virginia Power, which has an area office in Lively, VA. The remainder of the County is served by the Northern Neck Electric Cooperative, with headquarters in Warsaw. This cooperative receives all of its power from Dominion Virginia Power's system. Emergency service, if needed, can be supplied immediately by an automatically controlled diesel generating station near Warsaw.

Gas

Liquefied petroleum gas is available throughout Richmond County in bulk and bottled, metered or non-metered distribution from several distributors. This gas is available for domestic, commercial, and industrial uses and has a rating of approximately 2,500 BTU's per cubic foot.

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Water

The Town of Warsaw owns four (4) wells with a maximum daily capacity of 500,000 gallons and an average daily use of 166,200 gallons (2009). A 500,000 gallon water tower has been completed bringing the total number of towers to two (2) and the town's overhead storage capacity to 700,000 gallons.

Sewerage

The Town of Warsaw supplies central sewerage treatment service. Maximum daily treatment capacity is 300,000 gallons and the average daily use is 185,000 gallons.

Biosolids and Septage

Biosolids are the soil-like residue resulting from the treatment of materials and sludge removed from sewage treatment plants during the treatment process. During treatment, bacteria and other tiny organisms break sewage down into simpler, harmless organic matter. The organic matter settles out to form biosolids. Biosolids in their liquid form look like muddy water and contains 1-10% solids. Biosolids may be dewatered in a second step of the treatment process, which turns it into a "cake" with the texture of a wet sponge containing approximately 11-40% solids.

Biosolids land application is a beneficial recycling process with economic and environmental benefits. Land application is considerably less costly than other management options such as incinerating and land filling. Because biosolids provide nutrients in an organic form, they are good soil conditioners, helping to build soil structure while increasing vegetative growth and reducing soil erosion and pollution from runoff. They are also more easily utilized by crops than traditional inorganic fertilizers.

Septage is waste material from septic tanks and other sewage disposal systems that is removed by licensed haulers during routine cleaning, maintenance and repair operations. Periodic inspection, maintenance, and cleaning is not only critical for the proper functioning of all sewage disposal systems, it is a requirement under state sewage regulations and the Chesapeake Bay Preservation Act. Due to its hazardous nature, raw septage must be properly treated and stabilized by disposal in a sewage treatment plant or septage stabilization facility. In Richmond County, the Town of Warsaw Sewage Treatment Plant has some limited capacity to treat and dispose of septage and there are two small private anaerobic lagoon facilities that handle septage. As costs continue to rise, this limited disposal capacity within the County points out a need for future septage handling strategy. Once septage has been properly treated and tested, it may also be classified as a biosolid suitable for land disposal. Richmond County supports proper handling and safe land application of biosolids as a beneficial agricultural practice regulated by the Virginia Department of Environmental Quality.

PART II INVENTORY AND ANALYSIS

Solid Waste Disposal

The County of Richmond has three (3) staffed Refuse Collection and Recycling Sites. Their locations are at 2871 Newland Road, 135 Recycling Road (Indianfield), and 102 Old Treasure Road. Waste from the County is currently being transferred out of Northern Neck from the County of Westmoreland Transfer Station located near the Town of Montross. All three of the sites located in Richmond County accept recyclable items, such as glass, plastic, aluminum and other metal cans, newspaper, and cardboard. In addition, all three sites accept bagged yard waste and smaller brush. All residents in the County or the Town of Warsaw may use the Refuse Collection and Recycling Sites. Seasonal residents may obtain a pass with proof of property ownership in the County. Residents from other localities are not permitted to use the sites.

Telephone

Local telephone service is provided by Verizon, with two office buildings located in Warsaw. Long distance service is handled by various providers.

Newspapers

Northern Neck News, weekly; *Richmond Times-Dispatch*, *Fredericksburg Free Lance Star*, *Washington Post*, and *USA Today*, daily.

Television

All major networks and independent stations are received from Richmond, Washington D.C., Baltimore, and Norfolk. Cable television is provided by Metrocast Communications, Direct TV, and Dish Network, for the Town of Warsaw and portions of the county.

Broadband

There is a critical need for economical high speed internet service throughout most of Richmond County. Slower dial-up connection is available by existing telephone line and limited wireless access by direct broadcast and satellite is also an options. Cable and Digital Subscriber Line (DSL) access are also available within the Town of Warsaw and immediate vicinity.

The Northern Neck Planning District Commission is in the process of applying for funding to support the development of broadband access.

Radio

Richmond County is served by FM stations, WNNT and WRAR, located in Tappahannock, VA and WKWI and WKIK in Kilmarnock, VA.

Section L: Transportation

Highways

(See Part III Maps Pg. 13)

Richmond County has approximately 200 miles of primary and secondary highway roads. U.S. Route 360 is the only federal primary road. The remainder of the highways and roads are State roads. The Virginia Department of Transportation (VDOT) is responsible for the design, construction, and maintenance of this system through the Secondary Planned Improvement Program. Funds for this program are allocated to a regional residency office where an annual budget and improvement plan is devised. The plan is then presented at a public hearing, where the Board of Supervisors make revisions to accommodate the needs of the citizens. Once all parties are in agreement to the proposed plan, it is adopted by the Board and incorporated into the Residency's work plan.

The principle arterial highways are US-360, a four-lane highway running from the bridge at Tappahannock, through Warsaw, to the Northumberland County line at Village, and VSH-3, which runs from the Westmoreland County line near Lyells, south through Warsaw, and southeast to the Lancaster County line at Chinn's Mill Pond. The principal highways of the County are classified as Minor Arterial (MA) by VDOT. Minor Arterial roads, such as VSH-3, link cities and large towns and provide an integrated network for intra-state and inter-county service, and supplement the principle arterial systems so that all geographic areas are within a reasonable distance to an arterial highway. These highways provide links to the major roads from Tidewater to Richmond to Washington. Both roads provide access to Interstate 95, the major north-south corridor in the eastern United States. The greatest traffic volumes are found on VSH-3 and US-360 through the Town of Warsaw, and along these routes towards Montross, Callao, and Lancaster.

In conjunction with the classification of highways, VDOT designates a level of service (LOS) for each roadway. The LOS represents the flow characteristics of roads under normal operating conditions. The service ranges from A (best condition – free flowing traffic) to F (worst condition – heavy congestion). The MA in the County is currently rated with a level of service between B and C. Overall, traffic congestion problems are minimal and are generally concentrated in the Town of Warsaw. Farm equipment, school busses, and large freight carrying vehicles are to blame for some traffic delays and congestion. In addition, many of the roads provide access to a number of recreational areas. As a result, they operate at or near capacity on weekends during the summer months.

VDOT identifies traffic patterns throughout the County through the annual average traffic count (AATC), taken periodically on the secondary roads and annually on the primary roads. Traffic volume clearly identifies the major corridors of the County, which are VSH-3 and US-360. By overlapping the roadmap with the existing zoning and tax parcels, it is evident that most of the residential, manufacturing, and business growth has occurred along these corridors. In addition, the best land suitable to development has been located along the road system.

PART II INVENTORY AND ANALYSIS

Three major transportation entrances to Richmond County offer glimpses of the County's rural atmosphere. From these entrances, lasting images are fixed of a peaceful and tranquil setting. The primary entrance, US-360 from the Rappahannock River to Warsaw, has been identified by several sources as a chief example of a rural scenic corridor. The expanse of wetlands, farms, and forest summarize what is meant by the term "rural atmosphere," and sets the tone for an excursion into Richmond County and the Northern Neck. The two other entrances, VSH-3 from Lyells and from Chinn's Mill Pond are also both scenic gateways. All three entrances deserve protection from incentive development or changes that would disrupt the land use patterns currently enjoyed.

The VSH-3 bypass has been completed around the eastern end of Warsaw, providing both improved traffic flow and access to the commerce park.

Bus Service

Bay Transit is a non-profit community service that provides the only public transportation service in the Northern Neck and Middle Peninsula servicing a handful of fixed routes on weekdays from 6:00 a.m. through 6:00 p.m.

Trucking

A number of interstate trucking companies have authorization to operate within Richmond County. These provide adequate freight service to all locations. In addition, Richmond County is serviced by most major package express companies.

Railway

There are no railroads in Richmond County. Passenger and freight services are available at Richmond and Fredericksburg.

Waterway

Richmond County has considerable shoreline along the Rappahannock River. The Rappahannock is navigable by large vessels as far as Fredericksburg and has a channel depth ranging from 12 to 25 feet.

Airports

Richmond County has no public airports. There is an airport with paved runways and small plane charter service in nearby Essex County, 13 miles from Warsaw. Richmond International Airport in Richmond (50 miles) and Newport News Airport (75 miles) provide the nearest commercial flight and air freight service.

PART II INVENTORY AND ANALYSIS

Commuting Patterns

As elsewhere, commuting is an important phenomenon for both individuals and communities in Richmond County and the Northern Neck. For the individual, commuting between localities creates linkages between an individual's home community and work community. At the jurisdictional level, adjacent localities that exchange large numbers of workers often develop cooperative ties.

Commuting Patterns

In Commuting Locations	Number of Commuters	Out Commuting Locations	Number of Commuters
Chesterfield County	27	District of Columbia	24
Middlesex County	33	Fairfax County	33
Chesapeake City	48	King George County	51
Hanover County	51	Henrico County	67
Norfolk City	57	Hanover County	67
Virginia Beach City	84	Richmond City	70
Lancaster County	165	Lancaster County	95
Essex County	311	Northumberland	241
Northumberland	508	Westmoreland	337
Westmoreland	584	Essex County	563
Total Commuters	1,898	Total Commuters	1,548

Source: Census 2000

The Northern Neck Planning District Commission's RideShare Program assists commuters in Richmond County and in the Northern Neck. The RideShare Program is a free coordinating service to match employees with other employees working and living in nearby locations that are seeking car-pool and van-pool options for commuting.

Section M: Potential Pollution Sources

Failing Onsite Sewage Disposal Systems

Onsite sewage systems have a useful life of between 20 and 30 years. In some cases, onsite sewage systems may fail (in that they no longer provide wastewater treatment) without any indications, such as surface ponding or backups. Proper maintenance of all onsite sewage systems, including regular pump-outs as required under the County's Chesapeake Bay Preservation Area program, can help to extend their effective life and provide critical environmental protection. Causes of onsite sewage system failure include the following: improper design and construction, overloading or exceeding the design capacity of the system, failure to provide proper maintenance, and physical damage to the drainage field. The largest densities of failing onsite sewage systems are in the lower part of the County, south of Warsaw, and are relatively evenly dispersed throughout this region. With the low permeability in the necklands, one would expect the majority of failures to be concentrated

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in that area. However, that does not seem to be the case. There are failures in other areas of the County, but no large concentrations.

Boating Pollution

Pollution from boats is expected since there are a large number of Virginia residents who visit the County (in addition to the boat owning citizens of the County). The Virginia Department of Health defines boating pollution as any congregation of four or more boats moored together. Some of these points are community piers and boat ramps (where the potential for pollution is low), while others are full service marinas (where the pollution potential from oil and sewage spills is much higher). There is potential for educating the boating public to help minimize pollution from recreational boating activities, as well as to provide additional information regarding sites for pumpout for boats with onboard sewage holding tanks. There is continual effort to educate the boating public to help minimize pollution from recreational boating activities. All boaters are strongly encouraged to make use of marine sanitation devices equipped with holding tanks, or for smaller vessels, use of portable toilets are encouraged. Onshore pumpout facilities are now available at all marinas and dump stations are available at all campgrounds.

Pollution from Animal Wastes

Pollution from animal wastes has the potential for widespread contamination of productive shellfish beds. In this part of Virginia, there is very little farm animal production. However, there are some farmers who have small herds of cattle. The majority of the animal pollution locations may be attributed to small cattle herds, wild animals, and pets. Dog kennels provide another source of animal pollution. Hunting with dogs is a favorite outdoor recreational activity in this area during the fall and winter months. Avid hunters have kennels in their yards, and hunt clubs usually have large kennels for their members' hunting dogs.

Pollution from Sewage Treatment Plants

Pollution from sewage treatment plants (STP's) are few and dispersed in the County. The Town of Warsaw STP is south of Warsaw, and empties into Totuskey Creek. The Haynesville Correctional Center (north of US-360 in Haynesville), also operates a STP, which eventually drains into Totuskey Creek. Other points throughout the county are either very small treatment facilities for public facilities, or privately owned septage lagoons.

Composite Analysis of Pollution Sources

Hydrologic Unit E24, which contains Totuskey Creek, has the largest concentration of pollution sources, with septic outnumbering all others. Boating and animal pollution follow closely behind septic pollution. Three (3) out of the four (4) sewage treatment plant locations are located in this Hydrologic Unit. It follows that Totuskey Creek is condemned for Shellfish Harvesting (See Map 4 – “Condemned Shellfish Areas”). Hydrologic Unit E25, containing Lancaster Creek, is the watershed with the next highest pollution potential.

PART II INVENTORY AND ANALYSIS

Of all pollution sources, septic system failures account for the majority of points, with animal and boating pollution following, then industrial and sewage treatment plant pollution.

In addition to the pollution sources mapped by the NNPDC, the County's groundwater supply is also susceptible to threats from leaking underground storage tanks (USTs) and abandoned wells, which are scattered throughout the County. Abandoned wells are a significant threat, since they provide a direct channel for pollutants and salt water to enter the groundwater. The County has already assisted in the identification and capping of several abandoned wells throughout the County, however, it understands that a significant number still exist. Leaking USTs are not as great of a risk within Richmond County, since the number and concentration of underground storage tanks is relatively low. The greatest concentration of USTs obviously exists within the Town of Warsaw; however, notable numbers of USTs also exist on many farms, where equipment fueling facilities are provided.

With the potential pollution sources noted, the County recognizes its need to do the following:

1. Repair or replace failing septic systems;
2. Educate the boating public to help reduce pollution from recreational boating activities;
3. Have a program to control pollution from animal populations;
4. Inventory and promote the proper capping of abandoned wells; and
5. Work with DEQ in order to establish policies relative to the installation and replacement of USTs.

Groundwater Protection Programs

At the present time, Richmond County administers no program for the protection of groundwater. Prior to 1988, the Code of Virginia did not explicitly allow local governments to regulate land uses, based on the protection of groundwater. During the 1988 General Assembly Session, however, two pieces of legislation were passed which specifically authorize local governments to incorporate the protection of groundwater resources into their Comprehensive Plan and zoning ordinances.

Under the Virginia Groundwater Act of 1973, areas in Virginia may be designated as groundwater management areas. This designation provides a permitting process for large quantity groundwater users, which may potentially impact the groundwater levels in an area. Presently, this designation applies to only the Southeastern Virginia region and the Eastern Shore. However, it is an avenue for future groundwater protection if depletion of the County's groundwater resource accelerates. At this time, the County does not believe that a groundwater

PART II INVENTORY AND ANALYSIS

protection plan is necessary. The County does actively support efforts to inventory and promote abandonment of existing wells that are no longer in use.

Water Supply Impoundments

Presently, there are no surface water supply facilities in Richmond County. However, a great deal of surface water lies within the boundaries of the County. Numerous freshwater streams form in the upland areas and fan out into tidal creeks and estuaries across the coastal necklands.

Most of the surface water contained in these streams and creeks is subject to tidal influence and levels of salinity, which make it unsuitable for public water supply purposes. The freshwater portions of the majority of these streams are not large enough to expand existing water supplies without the creation of impoundments or reservoirs.

Flood-Prone Areas

(See Part III Maps Pg. 14)

The coastal areas of Richmond County are vulnerable to tidal flooding from major storms such as hurricanes and northeasters. The Richmond County Board of Supervisors amended the Floodplain Ordinance on November 13, 2008 in order to satisfy 44 Code of Federal Regulations (CFR) section 60.3(d) of the National Flood Insurance Program (NFIP) regulations.

Conformance to NFIPs requirements affords the County eligibility for flood insurance through the NFIP.

The data regarding flood-prone areas in the County is from the Federal Emergency Management Agency (FEMA) and represents the official flood zones based on a Flood Insurance Survey (FIS) made by FEMA. The Flood Insurance Rate Maps are designed for flood insurance and floodplain management applications. These maps indicate the 100- and 500-year floodplain boundaries for the significant flood hazard areas. According to FEMA, many headwater areas of the County have not been mapped. Typically these are areas where the 100-year flood depths are less than one foot or where the drainage areas are less than one square mile. These maps are used to define Flood Zones, which are customarily included by reference in a local zoning ordinance. Regardless of whether a locality has adopted a zoning ordinance, the FEMA flood zone maps showing 100- and 500-year flood elevations are used by mortgage lenders and insurers to establish flood insurance rates for individual sites.

The FIS identified the still-water elevations for the 10-, 50-, 100- and 500-year floods for the Rappahannock River and portions of tributary shorelines. These elevations are shown in the table below. The tidal frequency relationship represents the combined effect of both hurricanes and northeasters on tidal flooding and reflects the random probability of surges occurring coincident with the normal astronomical tide.

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Summary of Still-water Elevations

<u>Flooding Source and Location</u>	<u>Elevation (feet)</u>			
	<u>10-YR</u>	<u>50-YR</u>	<u>100-YR</u>	<u>500-YR</u>
Rappahannock River Entire shoreline within Richmond County	3.8	5.4	6.2	7.9

Source: FEMA Flood Insurance Study, December, 2008

Overall, most of the County is unaffected by the flood-prone areas. Unfortunately, the most vulnerable areas also represent some of the more desirable development sites, along the shoreline of the major creeks that flow into the Rappahannock River. Planning objectives for these areas should focus on avoiding the construction of permanent places for living or working within the vulnerable areas. Flood zones may be used for many purposes but within them operations that require permanent facilities should be minimized.

In its flood insurance study, FEMA gave special consideration to the vulnerability of Richmond County to wave attack. Wave crest elevations are the added height of a wave above the still-water elevations. Coastline areas subject to significant flood attack are referred to as coastal high hazard zones. The Corps of Engineers has established the 3-foot breaking waves as the criterion for identifying the limit of coastal high hazard zones. Based on this criterion, the coastline of Richmond County is not exposed to severe wave attack and has not been designated as part of a Coastal High Hazard Zone.

Section N: Potable Water Resources

Potable Water Resources

Richmond County's primary source of industrial and potable water is from three major aquifer systems: the water-table aquifer, the upper artesian aquifer, and the principal artesian aquifer. The water-table aquifer is the most vulnerable to pollutants from surface land use. The lower aquifers have the capacities to produce the more stable water supply and better quality. It is important to note that wells must be properly located and constructed to protect them from contamination. While all public water supplies are periodically sampled for bacteriological quality, most private wells are not. Private well owners should have their wells sampled annually to ensure their continued safety. Groundwater from the artesian aquifers usually has naturally occurring sodium and fluoride. While this is normally not a concern, individuals on sodium restricted diets may wish to check with their physicians. Parents of young infants should consult with their pediatricians or dentists about the need for supplemental fluoride. Additional information and assistance can be obtained from the Richmond County Health Department.

Water-table Aquifer

The water tapped by shallow wells is located in the water-table aquifer system, which is located relatively near the surface of the ground. This aquifer system consists of unconsolidated

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deposits, primarily from the Yorktown Formation and the Columbia Group. The Yorktown Formation contains coarse-grained sand and gravel units and beds of shell material. The Columbia group, which overlays the Yorktown stratum, consists of oxidized clays, silts, sands, and gravel deposits. While this uppermost aquifer is the potable water source for a number of private dwellings, seasonal fluctuations may pose problems in terms of its reliability. Wells constructed in this aquifer are usually described as "shallow" and are typically less than 100 feet in depth. They are easily identified by the large diameter concrete casings used to line the borehole. Water from this aquifer is moderately hard and may be corrosive to copper pipe over time. It is usually very low in sodium and fluoride but may contain iron and other minerals.

Upper Artesian Aquifer

The upper artesian aquifer dips slightly east southeastward across the County. The top of this aquifer ranges from 125 feet below sea level, near Warsaw, to nearly 275 feet, in the southeastern part of the County. The water-bearing stratum is approximately 60 feet thick and consists of silty, glauconitic sand layers that are confined between layers of clay. This aquifer is under constant pressure from the weight of overlaying sediments and wells drilled into it will have water forced upward in the well casing until the pressure equalizes, or in rare cases, may actually rise above the ground surface producing a flowing artesian well. Residential wells drilled into this aquifer are typically 4 inches in diameter to accommodate submersible pumps. Water from this aquifer is moderately soft.

Principal Artesian Aquifer

The principal artesian aquifer consists of many sand units of the Mattaponi and Patuxent formations. This aquifer tends to dip to the east, from 300 feet below sea level near the Rappahannock River and Warsaw to more than 400 feet along the southeastern boundary of the County. Local variability in the thickness and percentage of sand in the principle aquifer exists due to deposition from ancient river and stream channels. The topography of the basement rock complex and the presence of faults in the basement are also factors that control the hydrology of this aquifer. The principal aquifer serves as a source for large water users because of the large volume of water contained in it and the fact that it doesn't fluctuate as readily as the upper aquifers.

Residents of Richmond County rely totally on groundwater as a source of drinking water. At the present time, groundwater is an adequate source of good quality drinking water for Richmond County. However, there is cause for concern as more and more commercial users draw on this valuable resource to meet their needs. The majority of demand on the aquifer is initiated outside of Richmond County, outside the Northern Neck, and into southern Maryland.

The Richmond County Health Department regulates private wells and their construction. The State Department of Health Office of Drinking Water regulates public water supply systems.

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There are two classes of public supply systems, Community and Non-Community (Non-Community systems are further divided into two distinct subgroups). They may be defined as:

1. Community systems (serving cities, towns, and subdivisions) with 15 or more connections.
2. Non-Community Public Water Supplies
 - a. Non-transient non-community systems (serving facilities such as schools, municipal buildings, factories, offices, etc.) that serve at least 25 people more than 60 days per year; and
 - b. Transient non-community systems (serving hotels, restaurants, etc.) that serve water to the traveling public.

There are seven community, one non-transient non-community, and nine transient non-community systems in Richmond County and Warsaw, all of which rely on ground water.

Small water systems that do not meet the minimum water requirements to be a public water supply, yet are serving more than one connection currently fall within a regulatory gap. Individuals purchasing homes served by such systems should be aware that their water supply needs may not be fully met. The Code of Virginia requires that the State Board of Health and the Board of Supervisors receive written notification for any proposed water supply system planned to serve three or more connections. In addition to written notification of the Board of Supervisors the applicant must also appear in person at a regular Board meeting to present the proposal and receive Board approval for the project.

Major Water Users

The Virginia Registration and Reporting of Water Withdrawals Regulations (formerly Regulation No. 11) require users of ground and surface water, whose average daily withdrawal, during any single month period, exceeds 10,000 gallons per day, to register and report their withdrawals. As of January 1991, withdrawals of ground or surface water for crop irrigation are required to be reported if the withdrawal exceeds one million gallons in any month. The Department of Environmental Quality (DEQ) requires the reporting of this information for its use in preparing plans and programs for the management of water resources, such as in formulating water supply plans and in delineating surface water management areas.

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Owner Name	2008 Year Average Withdrawal Per Day (Gals.)	2008 Year Total Withdrawal (Millions of gals.)
Town of Warsaw	177,898.6	64.933
Haynesville Correctional Facility	114,956.2	41.959
Aqua VA – Div. of Aqua America (Luttrellville Area Central Water Supply)	6,986.3	2.55

Source: Department of Environmental Quality (DEQ), c/o Previn Smith, March 24, 2010

Water Table Depth

Groundwater is the sole source of drinking water for Richmond County. There are two types of groundwater that are commonly tapped for drinking water: shallow wells that tap into the water table aquifer, and deep drilled wells that tap into artesian aquifers (water-bearing formations of confined sands).

Soils that have a high water table are especially susceptible to contamination by inadequately treated wastewater and chemicals such as pesticides and herbicides that can easily migrate into shallow groundwater. On site sewage disposal systems rely on the natural filtration capacity of soils to cleanse waste water. For conventional on site sewage systems that rely entirely on the soil to adequately treat wastewater, there needs to be a minimum of 18 inches vertical separation between the bottom of the absorption field and the groundwater table. This combined with a minimum installation depth of 18 inches means that any site under consideration for a conventional sewage system must have at least 36 inches of well drained soil. Sites that can't meet this minimum would require a sewage system with advanced treatment capability and possibly additional engineering for shallow installation.

The majority of the high water table soils are contained in the necklands, as these soils are indicative of "low lands." The uplands of the County also have some "perched" high water table soils where dense clays or soil restrictions prevent the downward movement of water. High water table soils account for fifty-four (54) square miles (34,560 acres) of the County, or approximately 28% of the land area (See Part III Maps Pg. 9). The remainder, 137 square miles (87,680 acres), or 72% of the County, have a water table more than three feet from the ground surface throughout the year.

Water Quantity and Quality

Presently, the groundwater in the County is of sufficient quantity and quality to meet the water supply needs of residents, and there are no immediate threats to the resource.

Drops in water level have been documented at observation wells in Richmond County. Though these drops have not been severe, the threat to the groundwater supply is an indicator of increasing groundwater withdrawal and because of the County's coastal location may point to some risk of saltwater intrusion. . The majority of demand on the aquifer is initiated outside of Richmond County, outside the Northern Neck, and primarily coming from southern Maryland where water usage draws on the same aquifer.

The greatest threat to the quality of groundwater in Richmond County comes from wells that have been improperly constructed or maintained. Old wells that are no longer in use should be located and properly capped and sealed to prevent contaminants from entering the aquifers. This is true of both shallow groundwater wells and deep drilled wells, some of which are located along the shoreline or even under water. Richmond County has been supportive of efforts to locate and properly abandon such wells and should continue to do so as they are discovered.

Water Supply Planning Program

In order to assure that Virginia's water supply meets current and future needs of Virginia's citizens, the General Assembly enacted legislation in 2003 that requires development of a comprehensive statewide water supply planning process. Effective as of November 2, 2005 all counties, cities and towns in the Commonwealth of Virginia must submit a local water supply plan or participate in a regional planning unit in the submittal of a regional water supply plan to the State Water Control Board.

The Northern Neck Planning District Commission is developing a regional water supply plan for the four counties of the Northern Neck. This plan will include existing water source, use and resource information and will project future water demand; detail drought response and contingency plans; and recommend methods and incentives for protecting water resources and promoting alternative water sources.

The draft Northern Neck Regional Water Supply Plan was completed in December 2009 with anticipated adoption by the towns and counties of the Northern Neck by November 2011.

The Northern Neck Water Supply Plan is longer than the 35 year timeframe suggested by the State; the Steering Committee deemed it important to expand the planning horizon to 100 years. The most important issue discovered when developing the plan is that the amount of water used in the Northern Neck is not significant when compared to the water demand to the north and south of the region. Thus, Southern Maryland and Hampton Roads have more of an impact on the supply of water in the Northern Neck than the amount of water the Northern Neck citizens and industry consume. Another important point brought out in the plan is that by extrapolating population projections and water demand out 100 years, the Northern Neck Region could indeed experience a water supply deficit.

Potential Reservoir Sites

(See Part III Maps Pg. 17)

Public officials from the four Counties in the Northern Neck and the Northern Neck Planning District Commission recognized the need for long-range sewage and water facility planning. As a result of their concerns, in 1973, the "Water Quality Management Plan" was completed. The plan included a section that addressed those streams that have a potential for water supply and for flood storage and recreational uses. In determining the desirable locations for future reservoirs, the engineers considered the following factors:

1. The usable storage sites for the total plan for both water and sewage facilities throughout the area;
2. The nearness of reservoirs to potential population centers;
3. The expenses of constructing the initial reservoirs; and
4. Flood control and the cost of spillways to carry flood waters.

Generally, the engineers developed a pattern for reservoirs that involved the construction of small reservoirs in the headwaters of the streams rather than major structures on the lower reaches. These locations have several advantages:

1. The streams have less tributary population near the headwaters and will, therefore, have less probability of sewage entering the reservoirs;
2. It is possible to carry major sewage discharges out through these streams, to the major rivers, without passing through the water supply reservoirs;
3. The reservoirs located upstream can be utilized to release water, helping to maintain the 7-day low flows in downstream reaches, thereby improving the aesthetic value of the stream;
4. The control of floodwaters is best accomplished in the upper reaches of the stream;
5. The reservoirs located upstream provide a greater measure of silt control than major reservoirs in the lower reaches.

The engineers selected groups of reservoirs on the headwaters of the major streams for water supply development and have left the lower reaches of these same streams for sewage outlets. The proposed pattern of development generally involves locating one water plant on each of the major streams and taking water from a group of reservoirs located upstream in the hilly portions of these major streams.

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In the Management Plan, thirteen (13) possible reservoir sites were identified in Richmond County. From this list, County officials selected seven (7). The selections were based on their location and the development that had taken place surrounding the potential site.

Since the 1973 plan, development has taken place in six of the seven identified sites. The only site still remaining as a possible reservoir is RWL2, Wilna Creek as identified in the Water Quality Management Plan, 1973. The drainage area of the remaining reservoir is 960 acres or 1.50 square miles. It could supply a maximum of 0.43 million gallons per day.

A groundwater study was conducted after the “Water Quality Management Plan” was completed. In this study, it is noted that the Northern Neck region’s water requirements are being fulfilled by the abundant groundwater resources in the area. However, it does note that groundwater levels have declined, although no excessive cones of depression have developed. It further states that there are several factors that have contributed to the preference of groundwater development, as opposed to the utilization of surface-water resources. These include the following:

1. Development and treatment costs are approximately three (3) to five (5) times less for groundwater than for surface water;
2. The population distribution throughout the area is such to favor the dispersed development of groundwater resources over construction of surface-water impoundments; and
3. Industries within the area are located in a rural environment, which lacks a central water supply of sufficient capacity to meet their needs.

At the present time, the County recognizes the 1973 Water Quality Management Plan regarding possible reservoir sites and their potential for development. All future reservoir sites will remain as part of the Future Land Use Plan. With this, intensive development proposed for lands near potential sites will be determined on a case-by-case basis, with the potential reservoir site guiding in the County’s determination of acceptance or denial. Current groundwater levels are such that any widespread protection of all six (6) possible sites would not be feasible. The County realizes that the cost of purchasing land and constructing a water supply facility is monumental. The Plan also realizes that the citizens of Richmond County deserve, require, and demand a safe and adequate water supply.

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Section O: Land Cover and Development

Land Cover

In 2008/2009 the Northern Neck Planning District Commission (NNPDC) performed an analysis of the land cover of Richmond County. Using aerial photographs and GIS software, land cover was classified as follows: Agricultural Land, Forest Land, Urban or Built-up Land, Wetland, Barren Land, and Water.

Classification	%
Agricultural Land	27%
Forest Land	59%
Urban or Built-up Land	5%
Wetland	6%
Water	2%
Barren Land	<1%

Source: NNPDC 2008-2009. Due to rounding, total may not equal 100%

Development Patterns

Comprehensive Plan Survey Response: Scenic beauty ranked number one in best things about living in Richmond County.

Richmond County has remained rural; the majority of its land use is in agriculture. Satellite imagery reveals that this agricultural definition is not limited to fields for crops and pastures. Forest land falls within this agricultural land use designation as well. Commercial timber production and privately managed forestland constitute the largest percent of the land cover of Richmond County.

The predominance of agriculture and forestal lands, wetlands and the Rappahannock River and its tributaries confer upon Richmond County one of its most cherished and valuable assets – a rural landscape. Except for the Town of Warsaw and some of the villages, this overall rural landscape is randomly dotted with residential and business structures. Industrial facilities are few. The quality of life found in a rural landscape is important to residents and is almost certainly what attracts visitors and retirees to the area. Scenic vistas, recreational opportunities for hunting, fishing and crabbing; low crime rate; lack of traffic congestion; low housing density; surviving historic and cultural structures; and ability to own a home all contribute to this rural quality of life.

The Town of Warsaw, a separate corporate jurisdiction, is the growth or development “center” of our rural County. Residential density is higher here than in the County and many businesses and retail services operate in close proximity to each other. Richmond County High School and Elementary Schools, the Northern Neck Technical Center and Rappahannock Community College are within the town limits. Local, state and federal government offices are housed here.

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Public water is provided within the town limits. Public sewer serves much of the Town and there are provisions in the Town's Zoning Ordinance for new development to hook to public sewer.

Located in the Town is the Richmond County Commerce Park, a 50-acre site purchased by the County for its economic development potential. Grant funding and matching monies from the County and Town provided for the extension of water and sewer to the site and a stormwater facility has been constructed to serve the entire area. Intended for offices, business to business uses, limited service uses, distribution and a select set of very light manufacturing and retail uses, jobs and tax revenues are anticipated from this public investment. The first business to locate in the Commerce Park, Bay Aging, is in the final stages of construction at this time.

Adjacent to the Commerce Park is a separate 85-acre parcel, owned by the County intended for community recreational facilities. The Richmond County Fair, ball fields and an amphitheater are among the features considered on the master plan of development for this site. With the decision by the Board of Supervisors in April 2010 to move forward with the process of constructing a new high school on the grounds currently occupied by the Fair and Little League fields, the Richmond County Community Park may become a reality in the very near future with this relocation.

Because of the land acquisition and infrastructure expenditures made by the citizens of Richmond County in and near the Town of Warsaw – water, sewer, stormwater facilities, recreational grounds, roads and schools – it is the County's intent and responsibility to direct *appropriate* development proposals to this area.

New Development

Fit It In Or Does It Fit?

Comprehensive Plan Survey Response: Haphazard development ranked third overall of worst things about living in Richmond County.

Many may wonder why, with such large areas of undeveloped land, Richmond County needs to plan and direct where future growth should be located. Why not just let it happen? Fitting it in is not the same as determining whether it fits.

If new growth or development is proposed that is comparable to the existing uses in an area or can further serve these uses, it fits. For example, if farming is the existing land use activity then an implement dealer in the area may enhance this existing land use and provide tax revenue to the County without requiring much in the way of County services.

On the other hand, a subdivision proposed at the edge of an agricultural enterprise may easily fit into the wide-open spaces but it may also elicit homeowner complaints when biosolids are applied to farm fields and the odor drifts to the new neighborhood.

Growth or development does not occur without some cost to the taxpayer. While a developer may initially pay for improvements, the cost of future goods and service such as snow plowing, road resurfacing, addition of school bus routes, emergency services response, etc. is borne in part

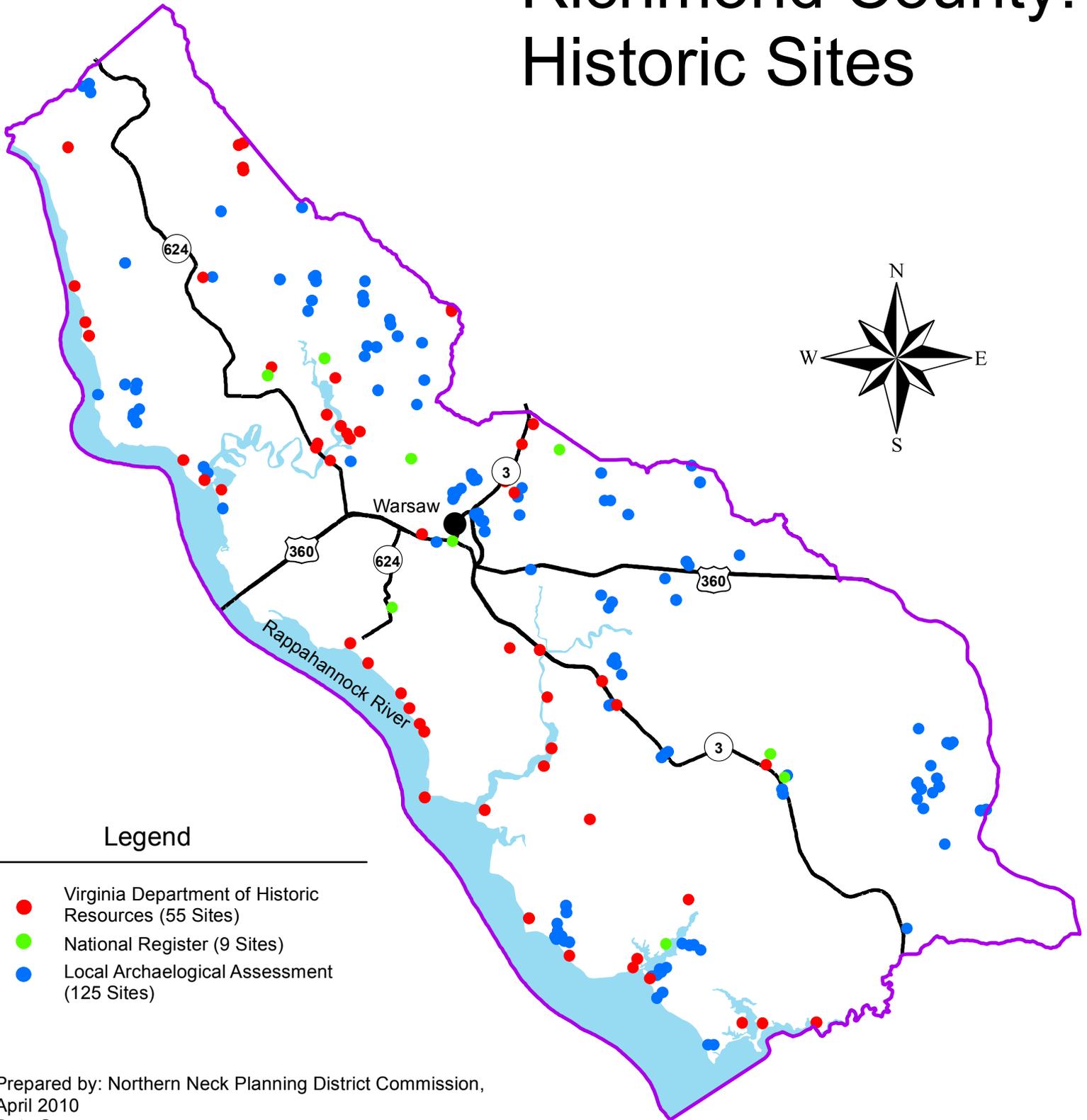
PART II INVENTORY AND ANALYSIS

by the County. Contribution of federal and state dollars for these services continues to decline with local taxpayers footing a larger portion of these bills. Locating new development near existing infrastructure serves to reduce these costs.

RICHMOND COUNTY VIRGINIA



Richmond County: Historic Sites



Legend

- Virginia Department of Historic Resources (55 Sites)
- National Register (9 Sites)
- Local Archaeological Assessment (125 Sites)

Prepared by: Northern Neck Planning District Commission,
April 2010

Data Sources:

USGS 1:100,000 DLGs

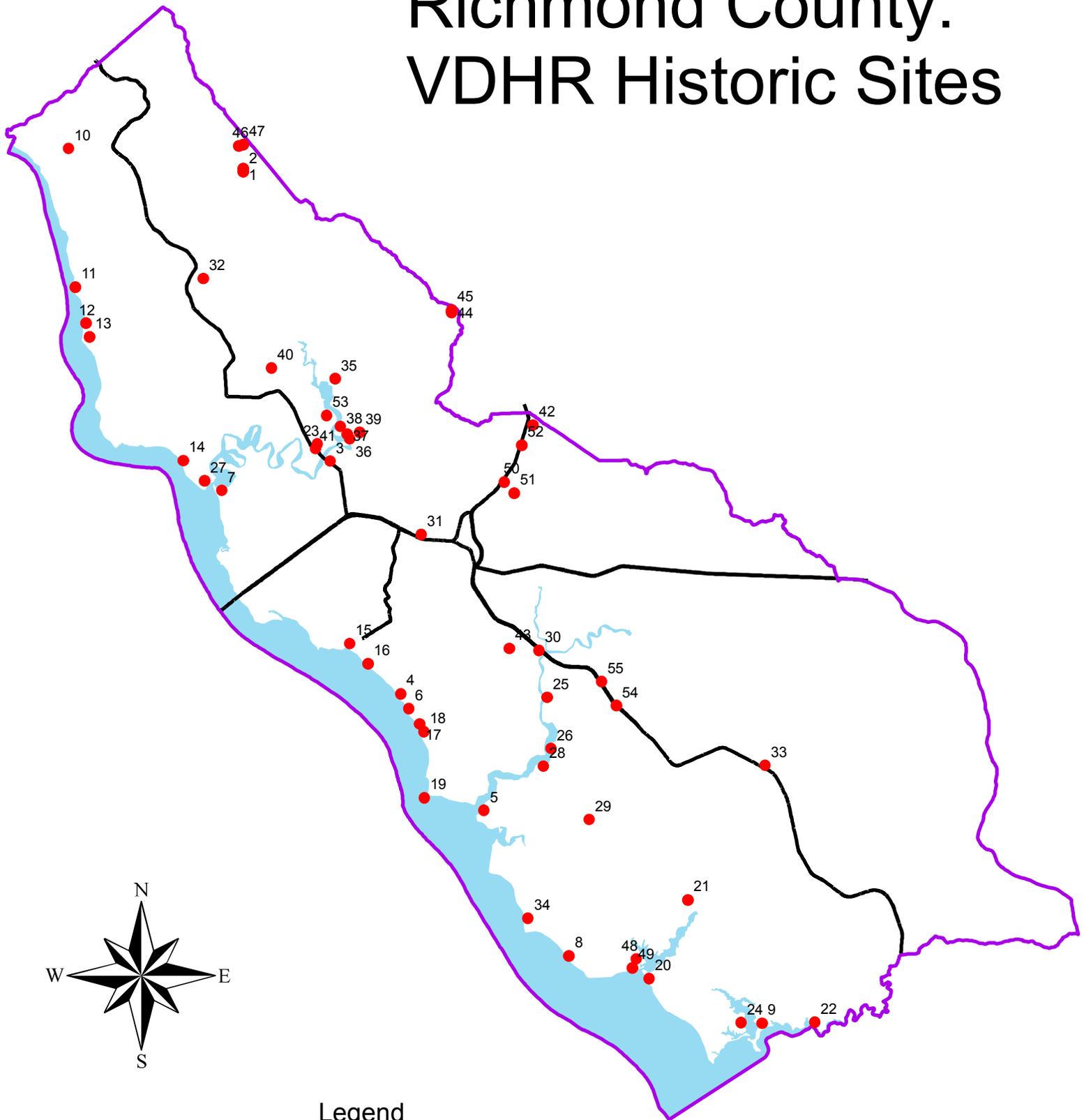
Virginia Department of Historic Resources

National Park Service

Local Archaeological Data, Richmond County



Richmond County: VDHR Historic Sites



Legend

- Virginia Department of Historic Resources (55 Sites)



Prepared by: Northern Neck Planning District Commission,
April 2010

Data Sources:

USGS 1:100,000 DLGs

Virginia Department of Historic Resources

National Park Service

Local Archaeological Data, Richmond County

HISTORIC SITES

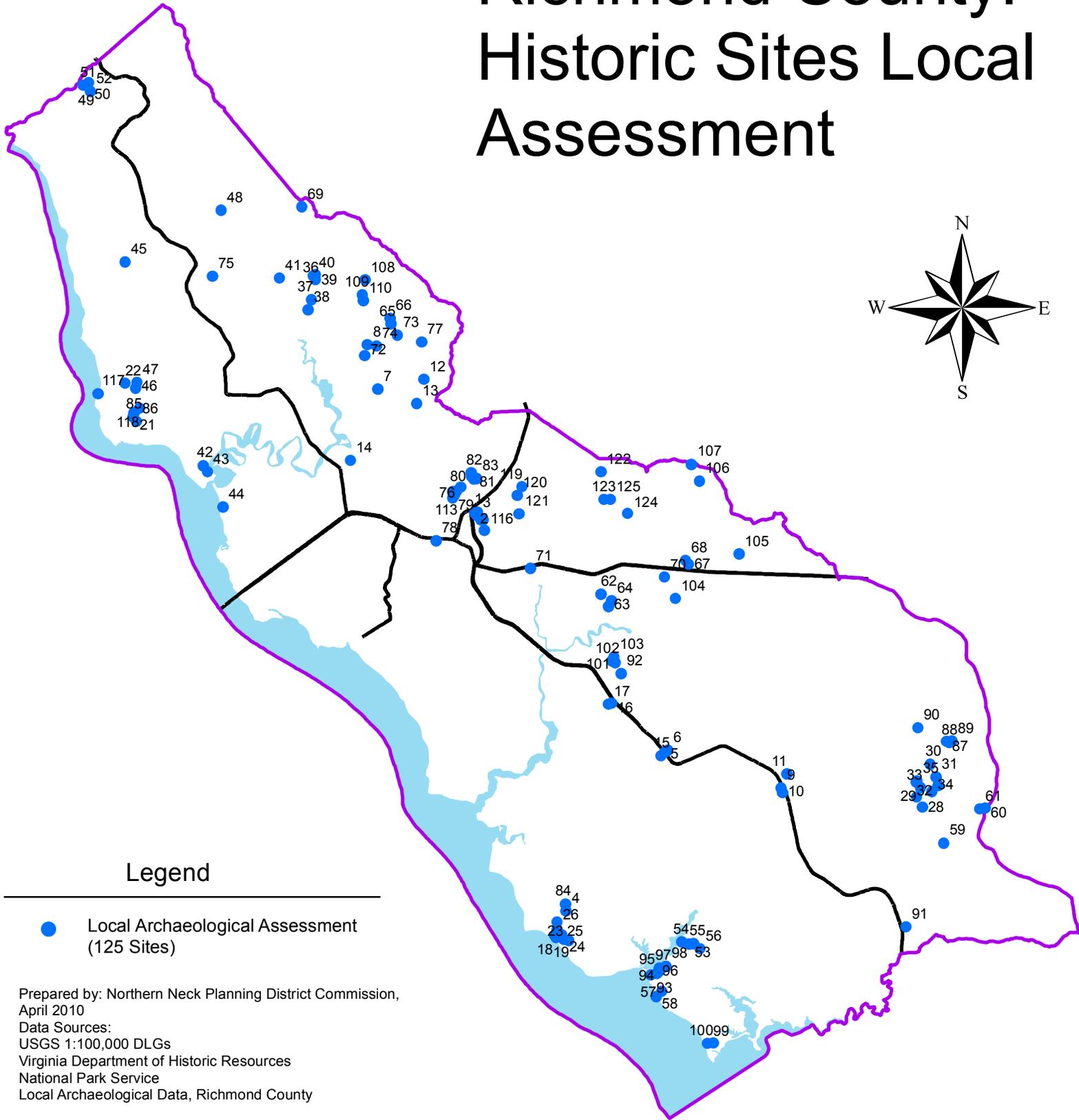
VIRGINIA DEPARTMENT OF HISTORIC RESOURCES

(VDHR)

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Label	Description	Label	Description
1	shell midden & artifacts	28	artifacts recovered
2	shell midden & artifacts	29	artifacts & ice house noted
3	native amer. ossuary & burials	30	phase I & II at creekside
4	shell midden & artifacts	31	church site
5	shell midden & artifacts	32	church site
6	shell midden & artifacts	33	test excavations at standing struct.
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8	shell midden & artifacts	35	standing struct. in ruins
9	artifact scatter in plowed field	36	burnt oyster shells
10	artifact scatter in plowed field	37	artifacts recov. from creekside
11	artifact scatter in plowed field	38	artifact scatter in plowed field
12	artifact scatter in plowed field	39	artifact scatter in plowed field
13	artifact scatter in plowed field	40	artifacts recov. from fence const.
14	artifact scatter in plowed field	41	artifacts coll. from roadside area
15	artifact scatter in plowed field	42	standing struct. in ruins
16	artifact scatter in plowed field	43	phase I survey, earthen dam
17	artifact scatter in plowed field	44	phase I recov of artifact scatter
18	artifact scatter in plowed field	45	phase I recov of artifact scatter
19	artifact scatter in plowed field	46	record. of mill dam and seats
20	shell midden & artifact scatter	47	record. of domestic plant scatter
21	artifacts recovered from area	48	artifact scatter in plowed field
22	artifact scatter in plowed field	49	artifact scatter in plowed field
23	artifacts recovered during construct.	50	phase I, II of site in plowed field
24	artifact scatter in plowed field	51	phase I recovery of artifact scatter
25	artifacts recov. from creekside	52	phase I recovery of artifact scatter
26	artifacts recov. from creekside	53	phase I recovery of artifact scatter
27	artifact scatter in plowed field	54	phase I recov. of artifacts in wooded
		55	phase I recov or artifact scatter

Richmond County: Historic Sites Local Assessment



Legend

- Local Archaeological Assessment (125 Sites)

Prepared by: Northern Neck Planning District Commission,
April 2010

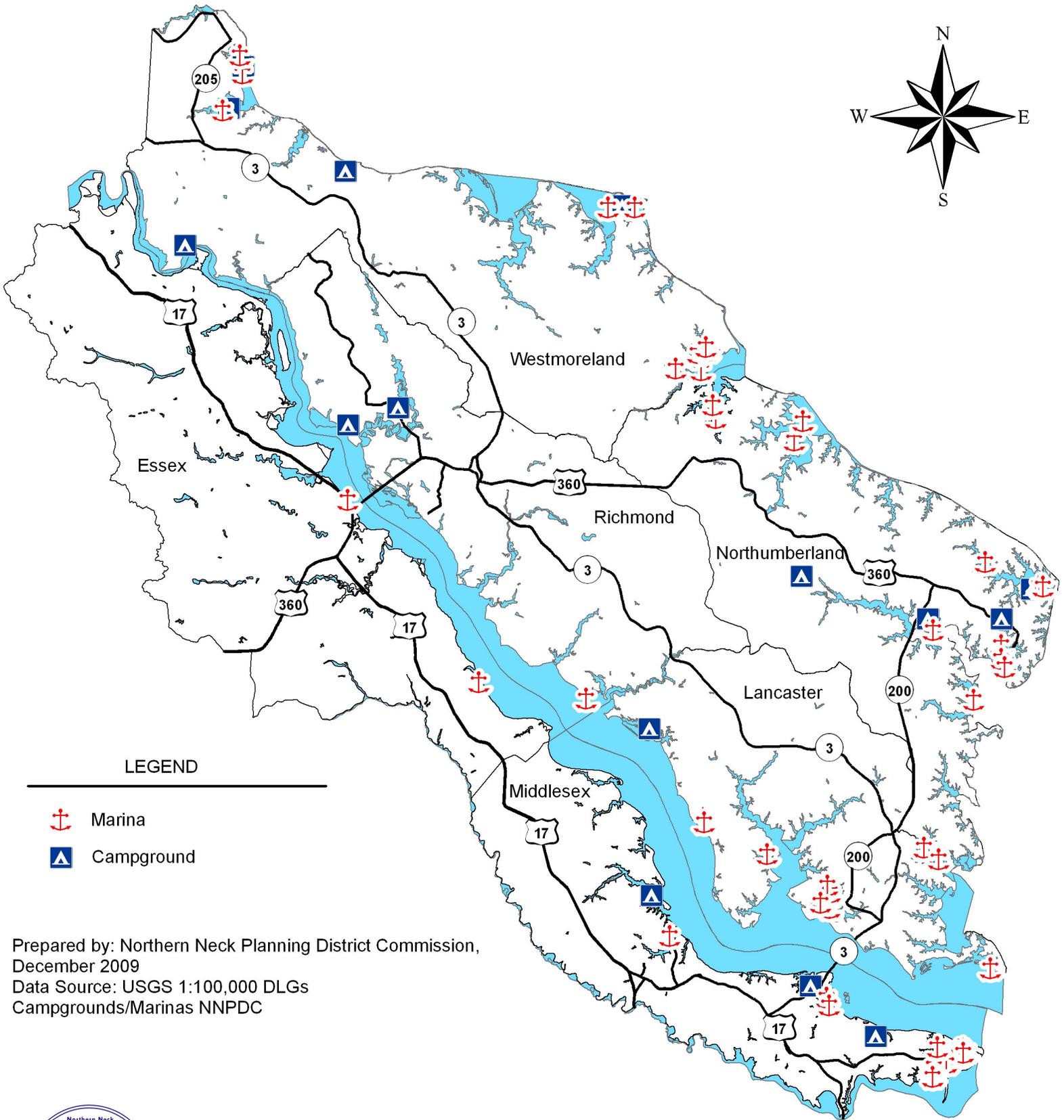
Data Sources:
USGS 1:100,000 DLGs
Virginia Department of Historic Resources
National Park Service
Local Archaeological Data, Richmond County



HISTORIC SITES LOCAL ARCHAEOLOGICAL ASSESSMENT INDEX

Label	Description	Label	Description	Label	Description
1	artifact scatter in plowed field	42	artifact scatter in plowed field	83	artifact scatter in plowed field
2	artifact scatter in plowed field	43	artifact scatter in plowed field	84	artifact scatter in plowed field
3	artifact scatter in plowed field	44	standing structure	85	artifact scatter in plowed field
4	artifact scatter in plowed field	45	standing structure	86	artifact scatter in plowed field
5	artifact scatter in plowed field	46	standing structure	87	private cemetery & artifact
6	standing struct. of tom. cannery	47	artifact scatter in plowed field	88	standing struct. of farm complex
7	mill site, historic	48	standing struct. in ruins	89	artifact scatter in plowed field
8	standing struct. of farm complex	49	private cemetery & artifacts	90	standing struct. in ruins
9	artifact scatter in plowed field	50	artifact scatter in plowed field	91	private cemetery
10	artifact scatter in plowed field	51	artifact scatter in plowed field	92	private cemetery
11	artifact scatter in plowed field	52	artifact scatter in plowed field	93	private cemetery and plantation
12	private cemetery	53	private cemetery	94	artifact scatter in plowed field
13	standing struct., mill, dam, pond	54	artifact scatter in plowed field	95	artifact scatter in plowed field
14	standing structure, mill	55	artifact scatter in plowed field	96	artifact scatter in plowed field
15	standing struct. of farm complex	56	artifact scatter in plowed field	97	standing struct.
16	private cemetery	57	artifact scatter in plowed field	98	artifact scatter in plowed field
17	standing struct. in ruins	58	brick artifact scatter on beach	99	artifact scatter in plowed field
18	road trace, historic	59	standing struct. in ruins	100	artifact scatter in plowed field
19	former store site & artifacts	60	former church camp	101	artifact scatter in plowed field
20	artifact scatter in plowed field	61	artifact scatter in road trace	102	artifact scatter in plowed field
21	artifact scatter in plowed field	62	standing structure	103	artifact scatter in plowed field
22	artifact scatter in plowed field	63	artifact scatter in plowed field	104	standing struct.
23	private cemetery	64	private cemetery	105	standing struct, former school
24	standing struct. of plantation	65	former house site in field	106	standing struct.
25	standing struct., tenant farm house	66	private cemetery & house site	107	standing structure, mill
26	artifact scatter in plowed field	67	standing struct.	108	artifact scatter in plowed field
27	artifact collect. from timbering area	68	artifact scatter in plowed field	109	artifact scatter in plowed field
28	artifact collect. from timbering area	69	private cemetery	110	artifact scatter in plowed field
29	artifact scatter in plowed field	70	private cemetery	111	artifact scatter in plowed field
30	artifact collection from timbering area	71	private cemetery	112	artifact scatter in plowed field
31	artifact collect. from modern house	72	standing struct.	113	artifact scatter in plowed field
32	mill site w/ earthen dam	73	private cemetery & artifact	114	artifact scatter in plowed field
33	ice pit, dam & pond	74	standing structure	115	artifact scatter in plowed field
34	standing struct.	75	standing struct. in ruins	116	standing struct., plantation
35	private cemetery	76	artifact scatter in plowed field	117	artifact scatter on beach
36	private cemetery	77	standing struct. & artifact	118	artifact scatter in plowed field
37	artifact scatter in plowed field	78	standing structure	119	standing struct.
38	canal	79	standing struct. & cemetery	120	standing structure in ruins
39	standing struct. in ruins	80	artifact scatter in plowed field	121	standing structure
40	artifact scatter in plowed field	81	artifact scatter in plowed field	122	standing struct., former school
41	road trace	82	artifact scatter in plowed field	123	private cemetery
				124	private cemetery
				125	standing struct. in ruins

Marinas and Campgrounds of the Rappahannock Region



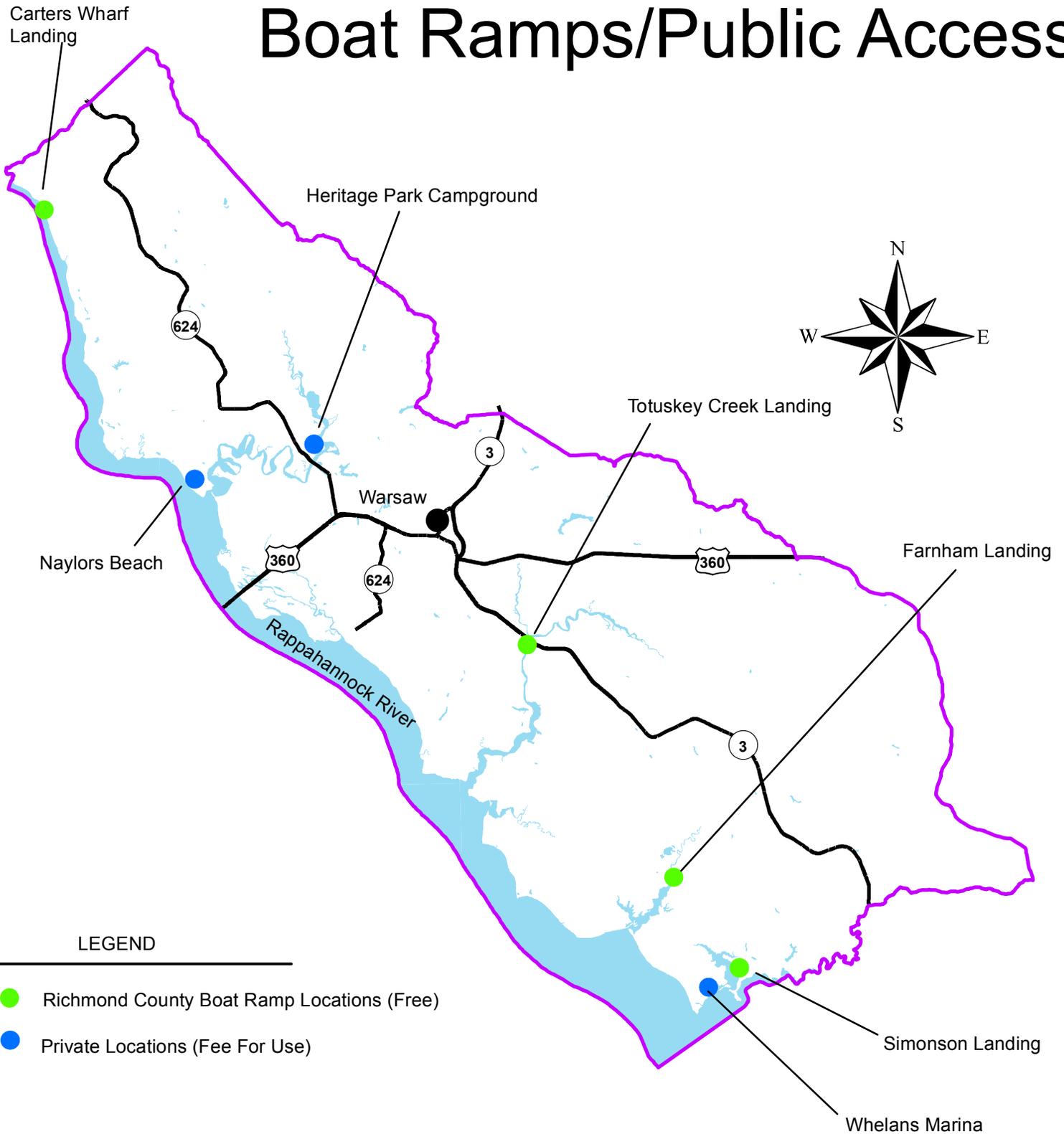
LEGEND

-  Marina
-  Campground

Prepared by: Northern Neck Planning District Commission,
 December 2009
 Data Source: USGS 1:100,000 DLGs
 Campgrounds/Marinas NNPDC



Richmond County: Boat Ramps/Public Access

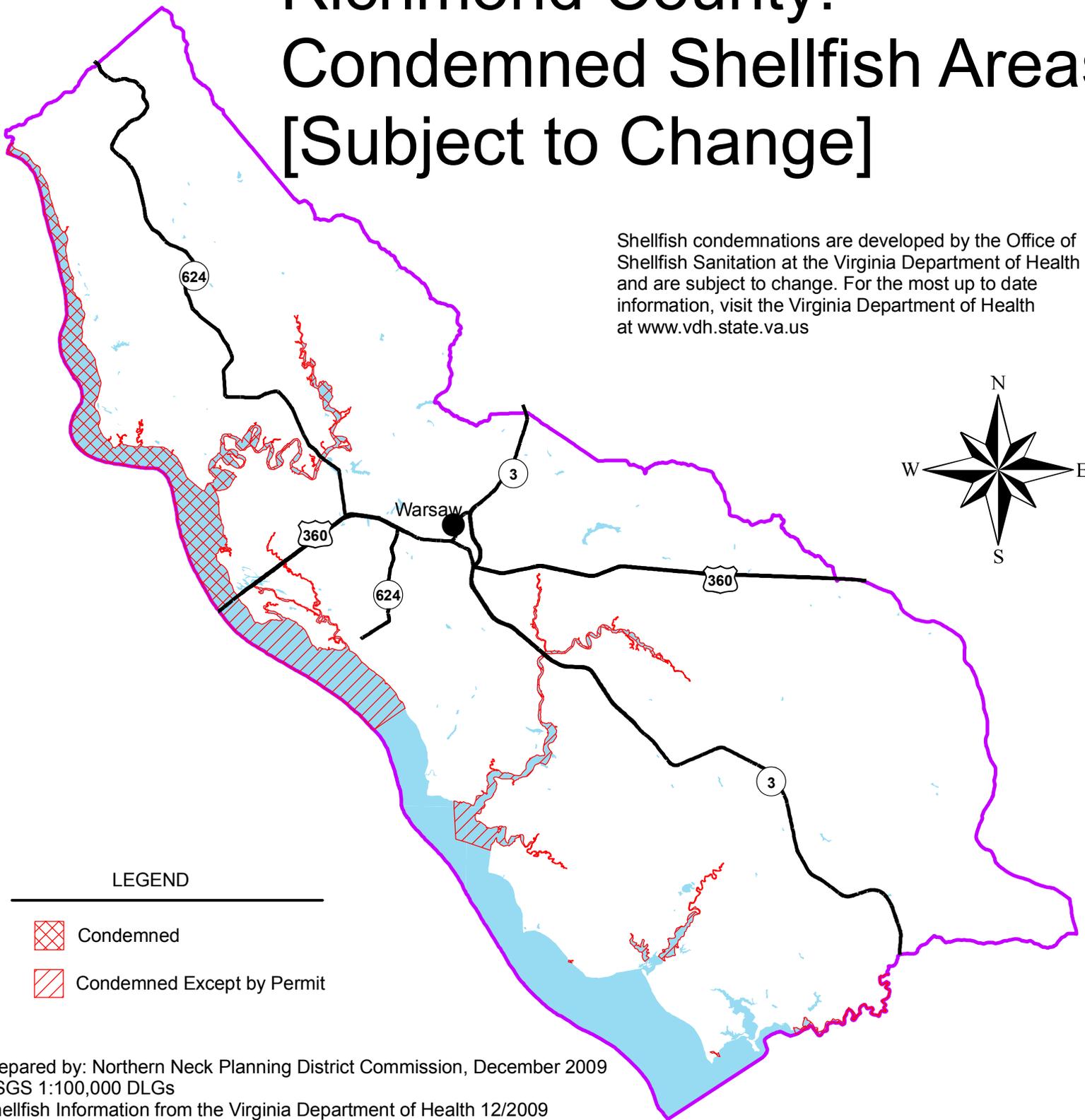


Prepared by: Northern Neck Planning District Commission, December 2009
 Richmond County Public Access Data
 USGS 1:100,000 DLGs



Richmond County: Condemned Shellfish Areas [Subject to Change]

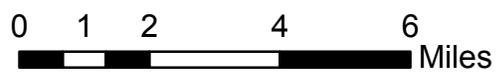
Shellfish condemnations are developed by the Office of Shellfish Sanitation at the Virginia Department of Health and are subject to change. For the most up to date information, visit the Virginia Department of Health at www.vdh.state.va.us



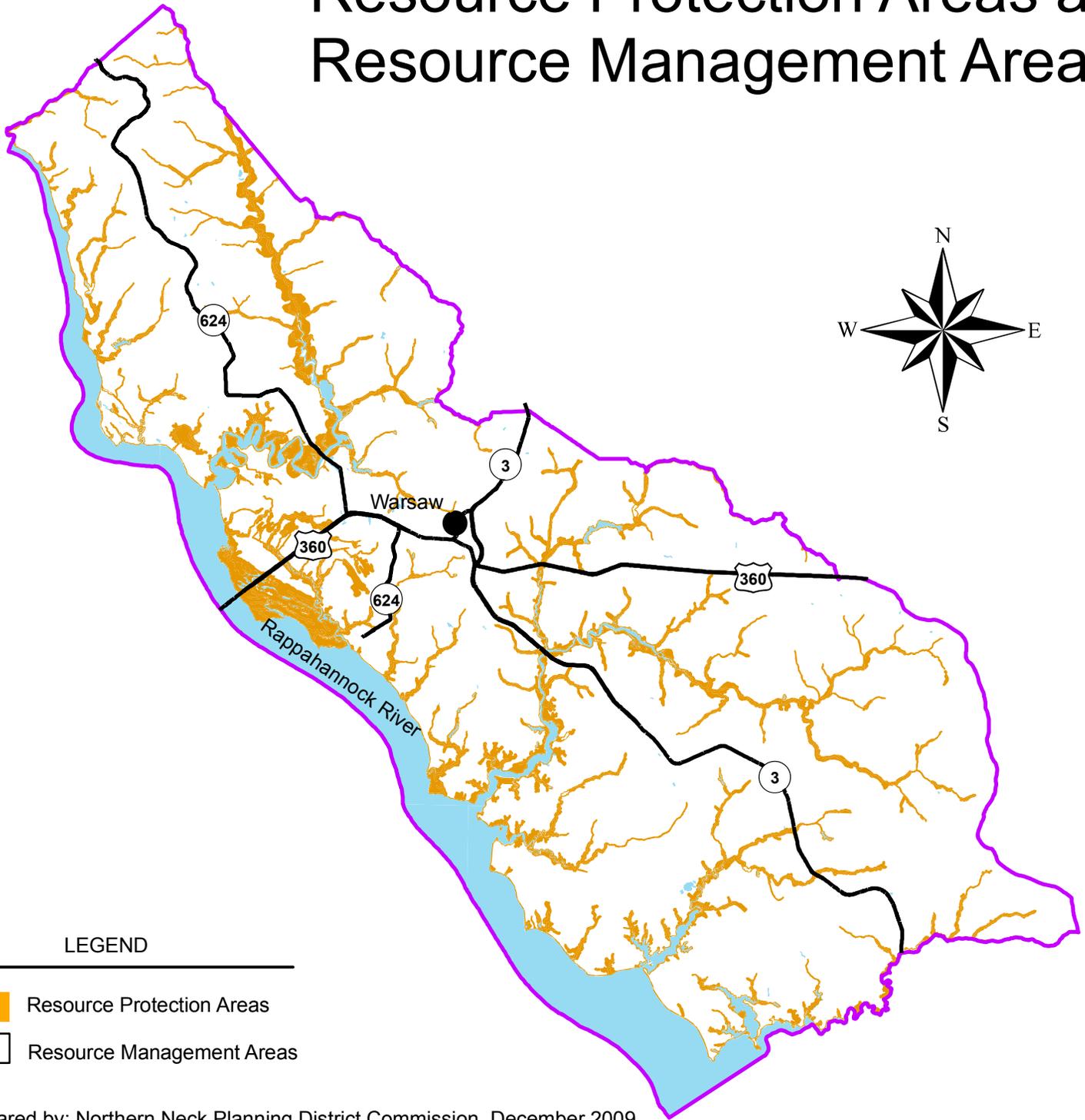
LEGEND

-  Condemned
-  Condemned Except by Permit

Prepared by: Northern Neck Planning District Commission, December 2009
 USGS 1:100,000 DLGs
 Shellfish Information from the Virginia Department of Health 12/2009



Richmond County: Resource Protection Areas and Resource Management Areas



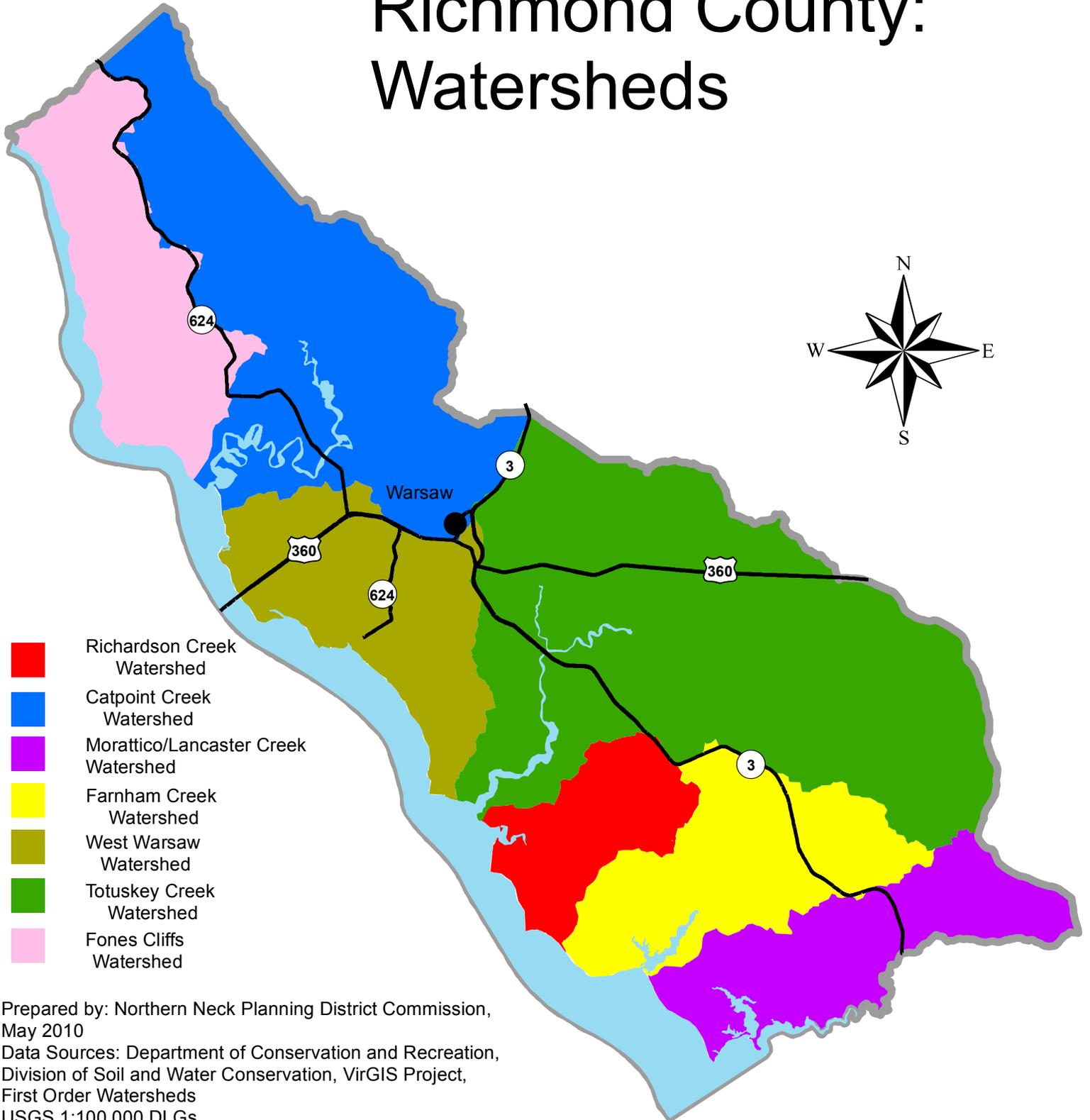
LEGEND

-  Resource Protection Areas
-  Resource Management Areas

Prepared by: Northern Neck Planning District Commission, December 2009
Data Source: USGS 1:100,000 DLGs
RMA/RPA Boundary



Richmond County: Watersheds

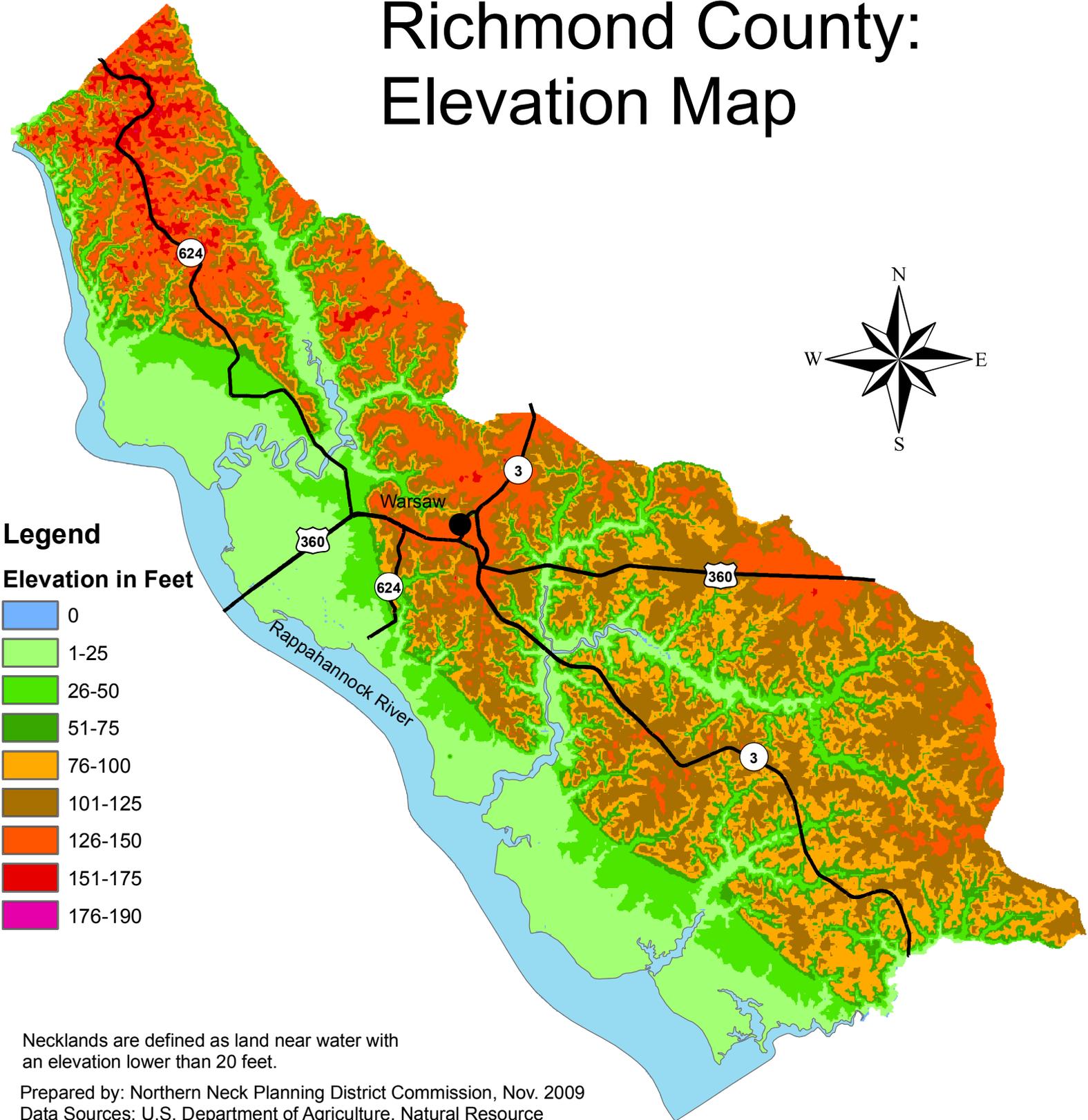


Prepared by: Northern Neck Planning District Commission,
May 2010
Data Sources: Department of Conservation and Recreation,
Division of Soil and Water Conservation, VirGIS Project,
First Order Watersheds
USGS 1:100,000 DLGs



0 1 2 4 6 Miles

Richmond County: Elevation Map



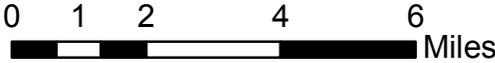
Legend

Elevation in Feet

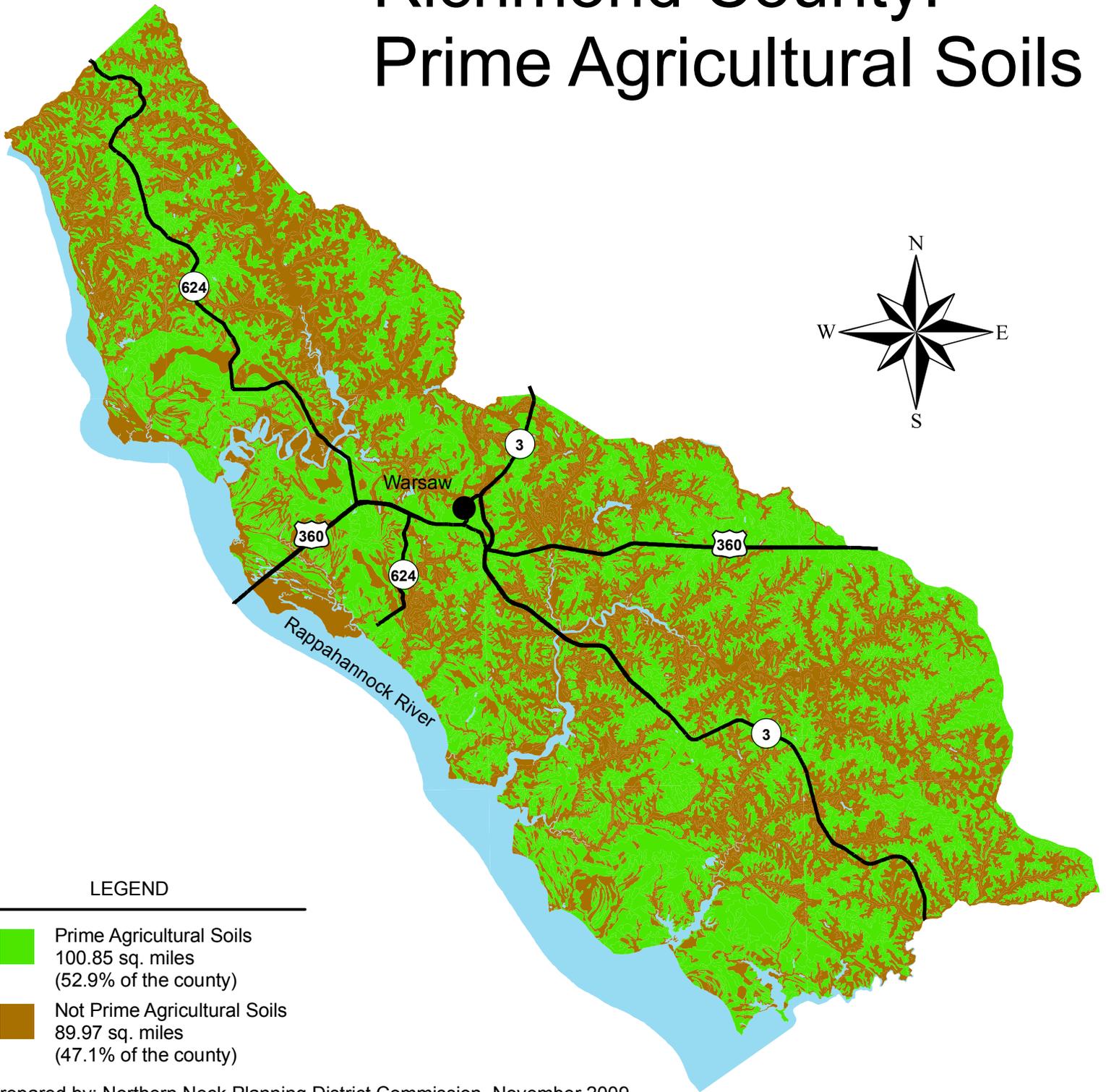
-  0
-  1-25
-  26-50
-  51-75
-  76-100
-  101-125
-  126-150
-  151-175
-  176-190

Necklands are defined as land near water with an elevation lower than 20 feet.

Prepared by: Northern Neck Planning District Commission, Nov. 2009
 Data Sources: U.S. Department of Agriculture, Natural Resource Conservation Service, SSURGO Soils, 1997
 Richmond County Soil Survey, 1982
 USGS 1:100,000 DLGs



Richmond County: Prime Agricultural Soils



LEGEND

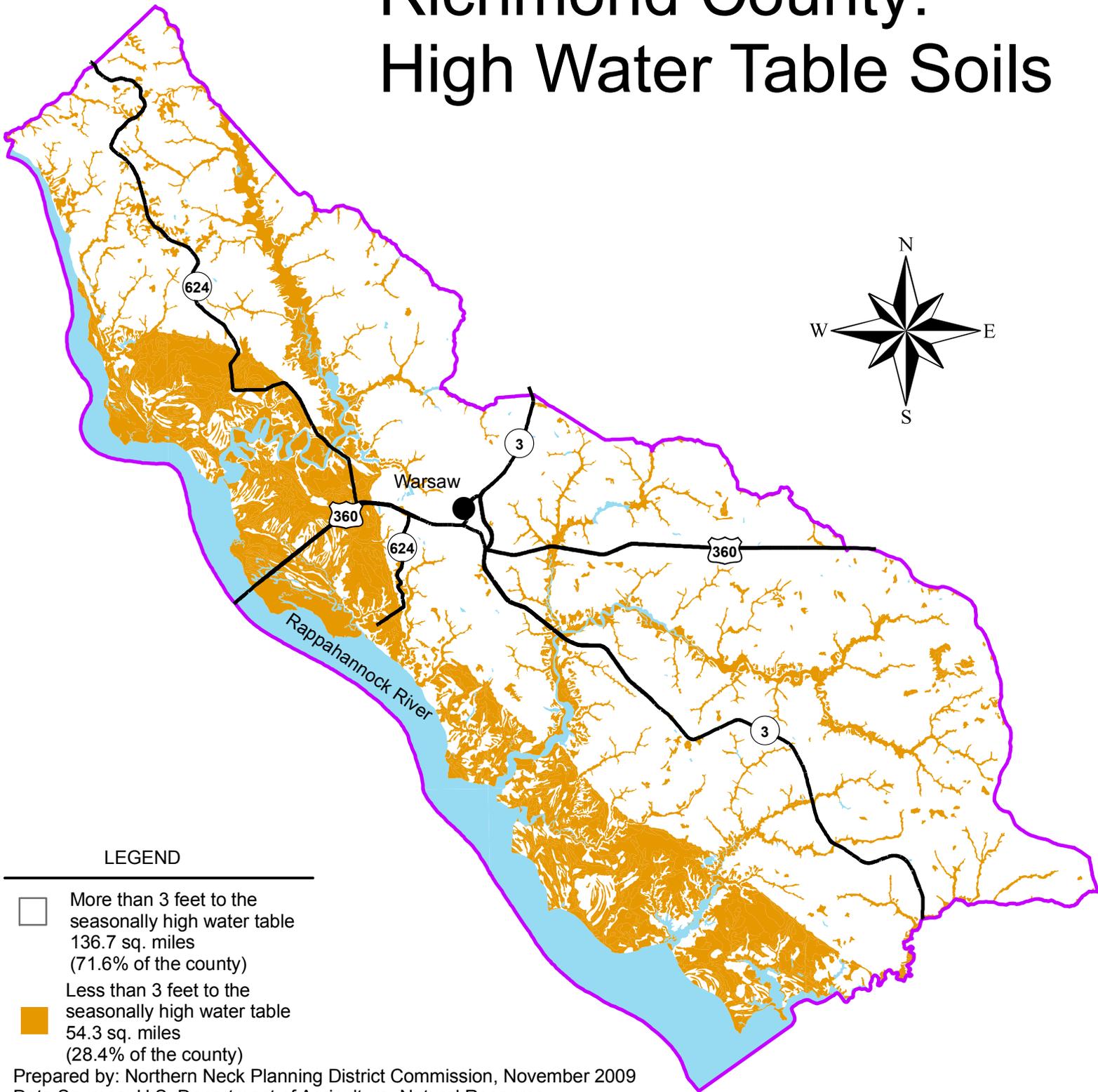
- Prime Agricultural Soils
100.85 sq. miles
(52.9% of the county)
- Not Prime Agricultural Soils
89.97 sq. miles
(47.1% of the county)

Prepared by: Northern Neck Planning District Commission, November 2009

Data Sources: U.S. Department of Agriculture, Natural Resource Conservation Service, SSURGO Soils, 1997 updated 2008
Richmond County Soil Survey, 1982
USGS 1:100,000 DLGs



Richmond County: High Water Table Soils



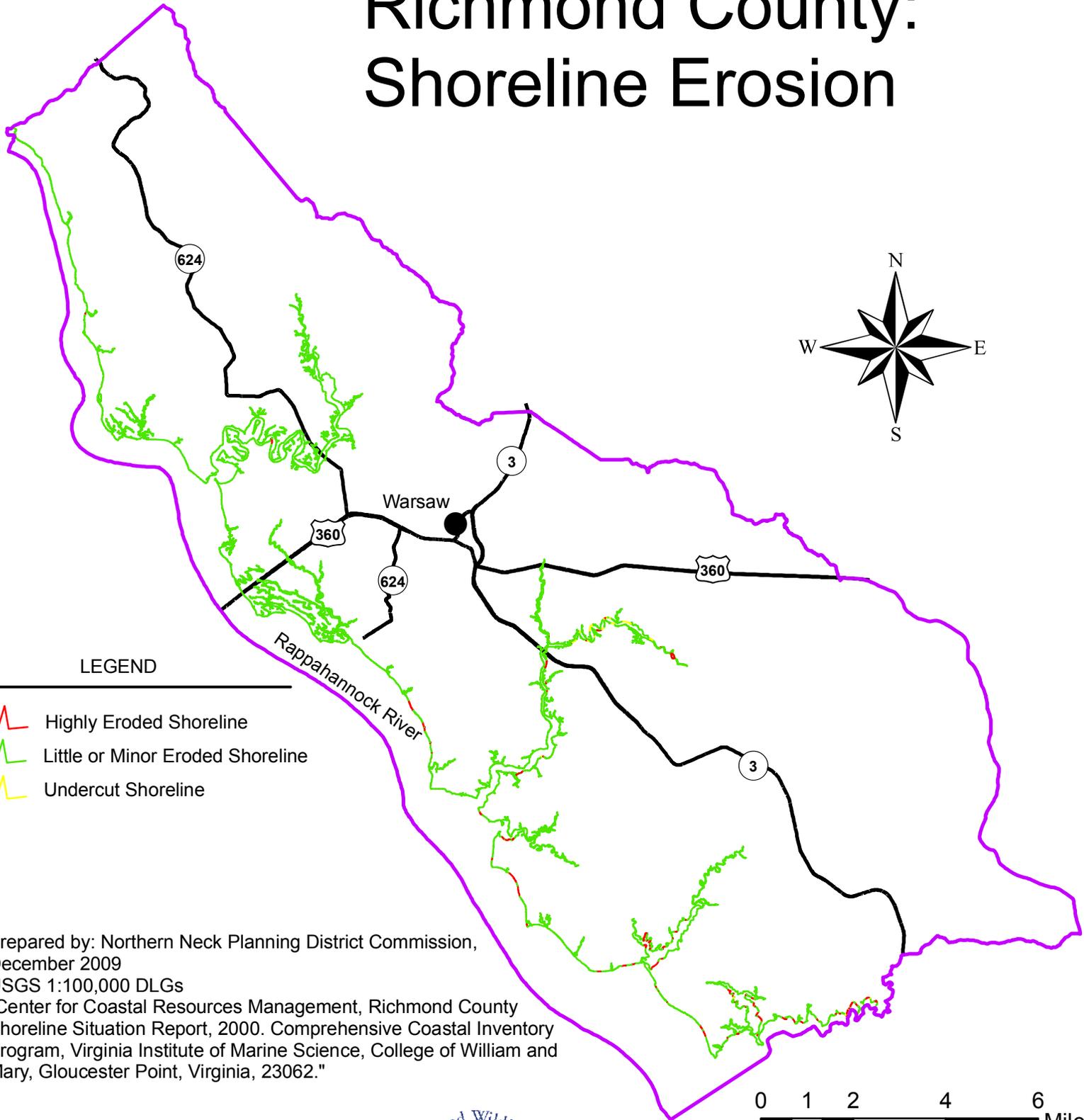
LEGEND

- More than 3 feet to the seasonally high water table
136.7 sq. miles
(71.6% of the county)
- Less than 3 feet to the seasonally high water table
54.3 sq. miles
(28.4% of the county)

Prepared by: Northern Neck Planning District Commission, November 2009
 Data Sources: U.S. Department of Agriculture, Natural Resource Conservation Service, SSURGO Soils, 1997
 Richmond County Soil Survey, 1982
 USGS 1:100,000 DLGs



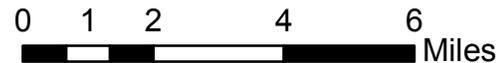
Richmond County: Shoreline Erosion



LEGEND

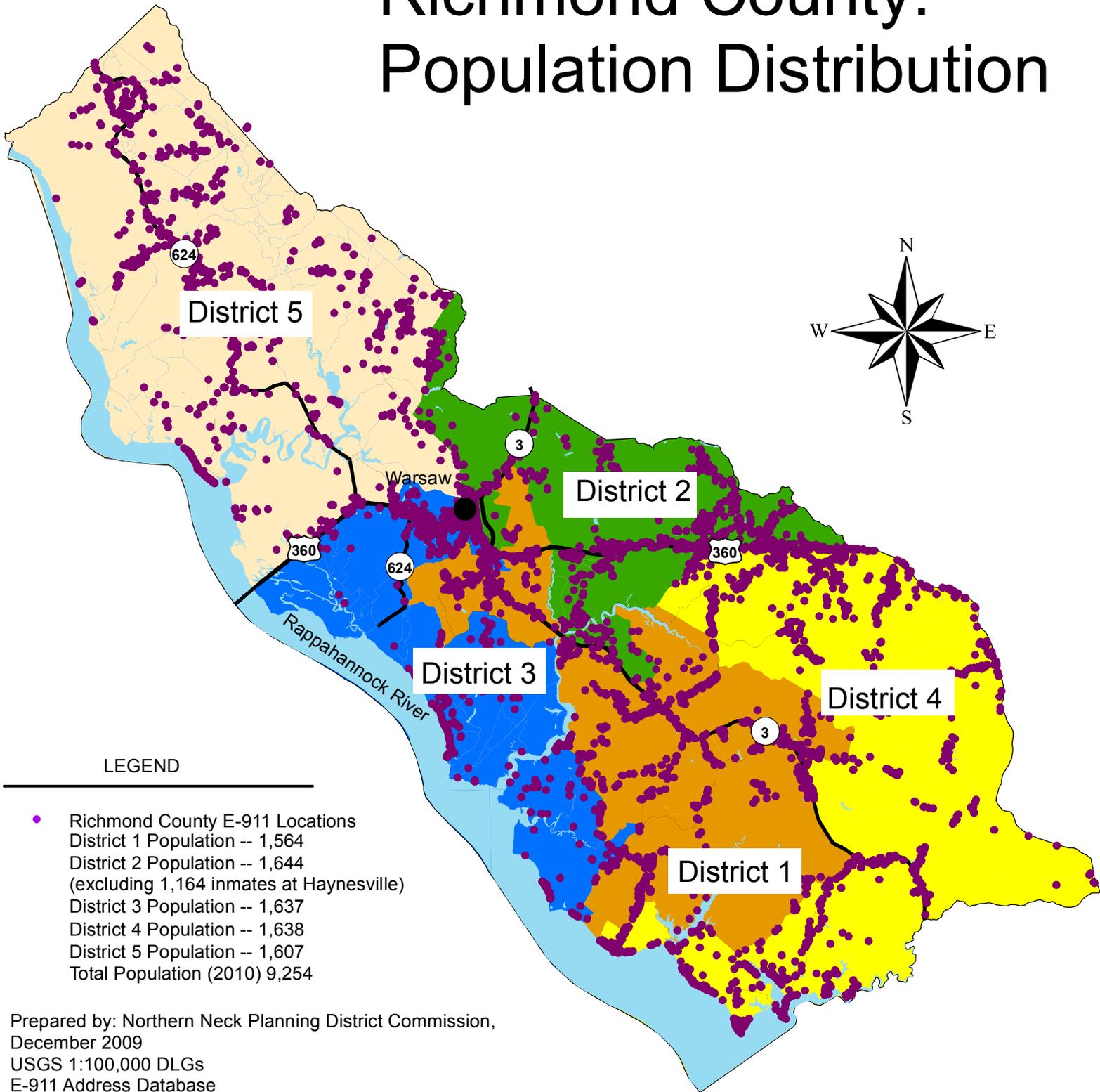
-  Highly Eroded Shoreline
-  Little or Minor Eroded Shoreline
-  Undercut Shoreline

Prepared by: Northern Neck Planning District Commission,
 December 2009
 USGS 1:100,000 DLGs
 "Center for Coastal Resources Management, Richmond County
 Shoreline Situation Report, 2000. Comprehensive Coastal Inventory
 Program, Virginia Institute of Marine Science, College of William and
 Mary, Gloucester Point, Virginia, 23062."



Comprehensive Coastal Inventory
 Center for Coastal Resources Management
 Virginia Institute of Marine Science

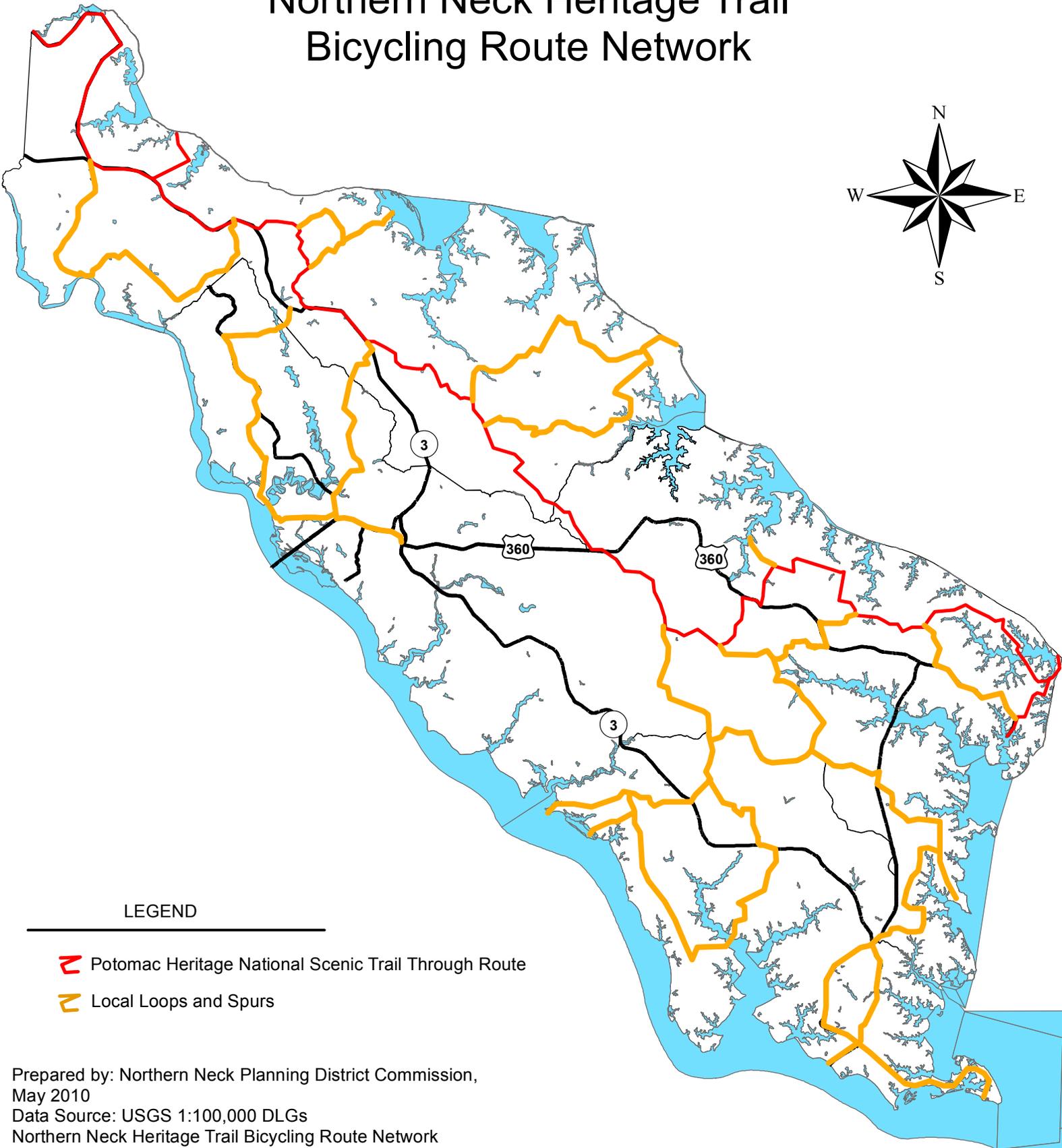
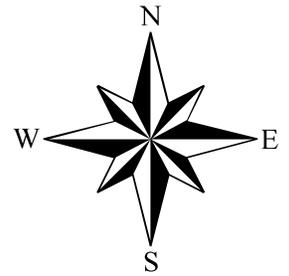
Richmond County: Population Distribution



Prepared by: Northern Neck Planning District Commission,
December 2009
USGS 1:100,000 DLGs
E-911 Address Database
US Census 2010



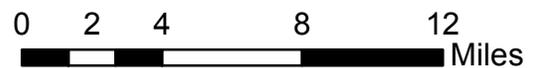
Northern Neck Heritage Trail Bicycling Route Network



LEGEND

-  Potomac Heritage National Scenic Trail Through Route
-  Local Loops and Spurs

Prepared by: Northern Neck Planning District Commission,
May 2010
Data Source: USGS 1:100,000 DLGs
Northern Neck Heritage Trail Bicycling Route Network
National Park Service



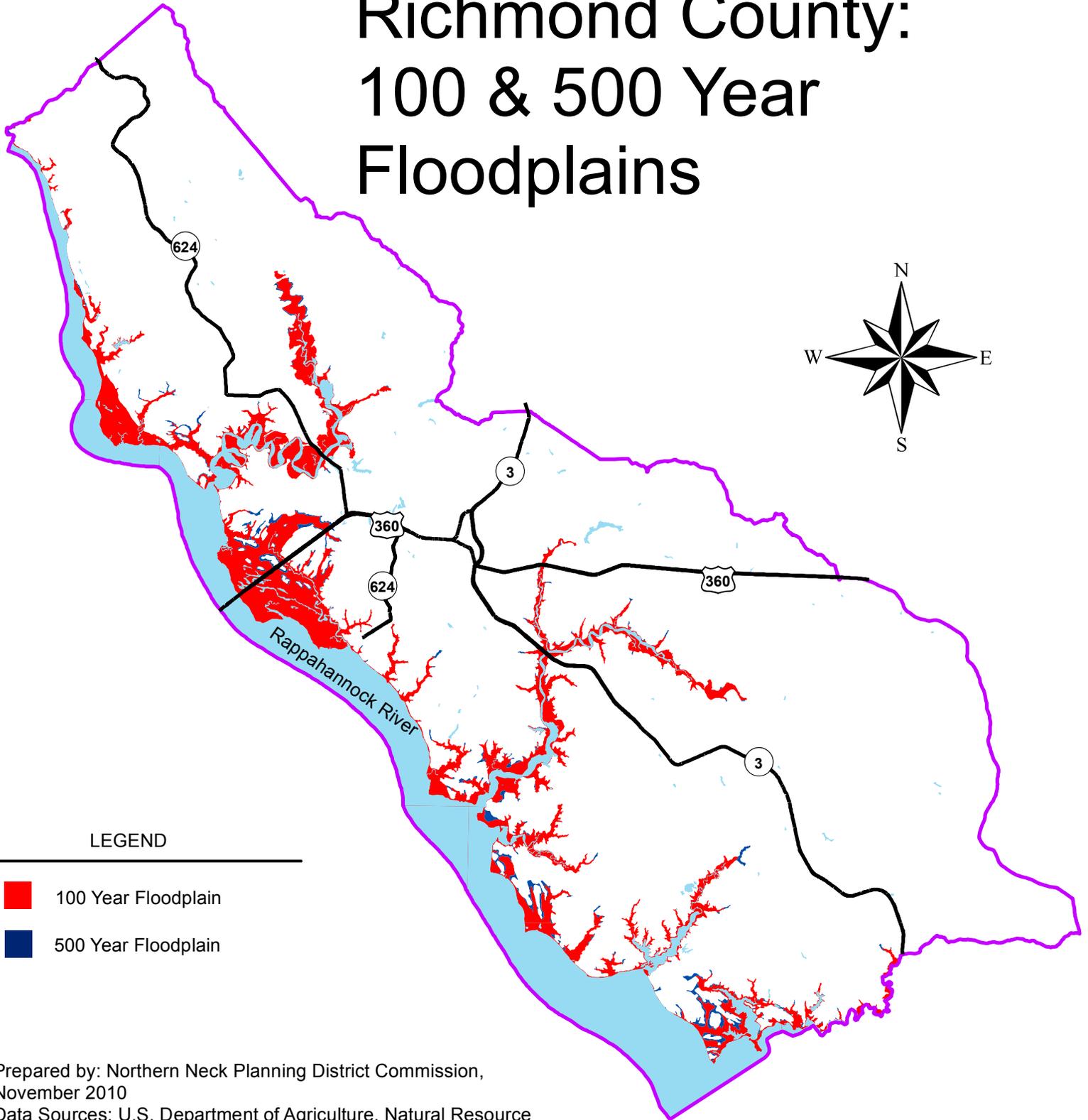
Richmond County: Principal Highway Traffic Counts



Prepared by: Northern Neck Planning District Commission,
April 2010
There were no areas with 10,000-12,999 trips in the County.
Data Sources:
USGS 1:100,000 DLGs
Virginia Department of Transportation, Annual Average Daily
Traffic Count Estimates, 2009



Richmond County: 100 & 500 Year Floodplains



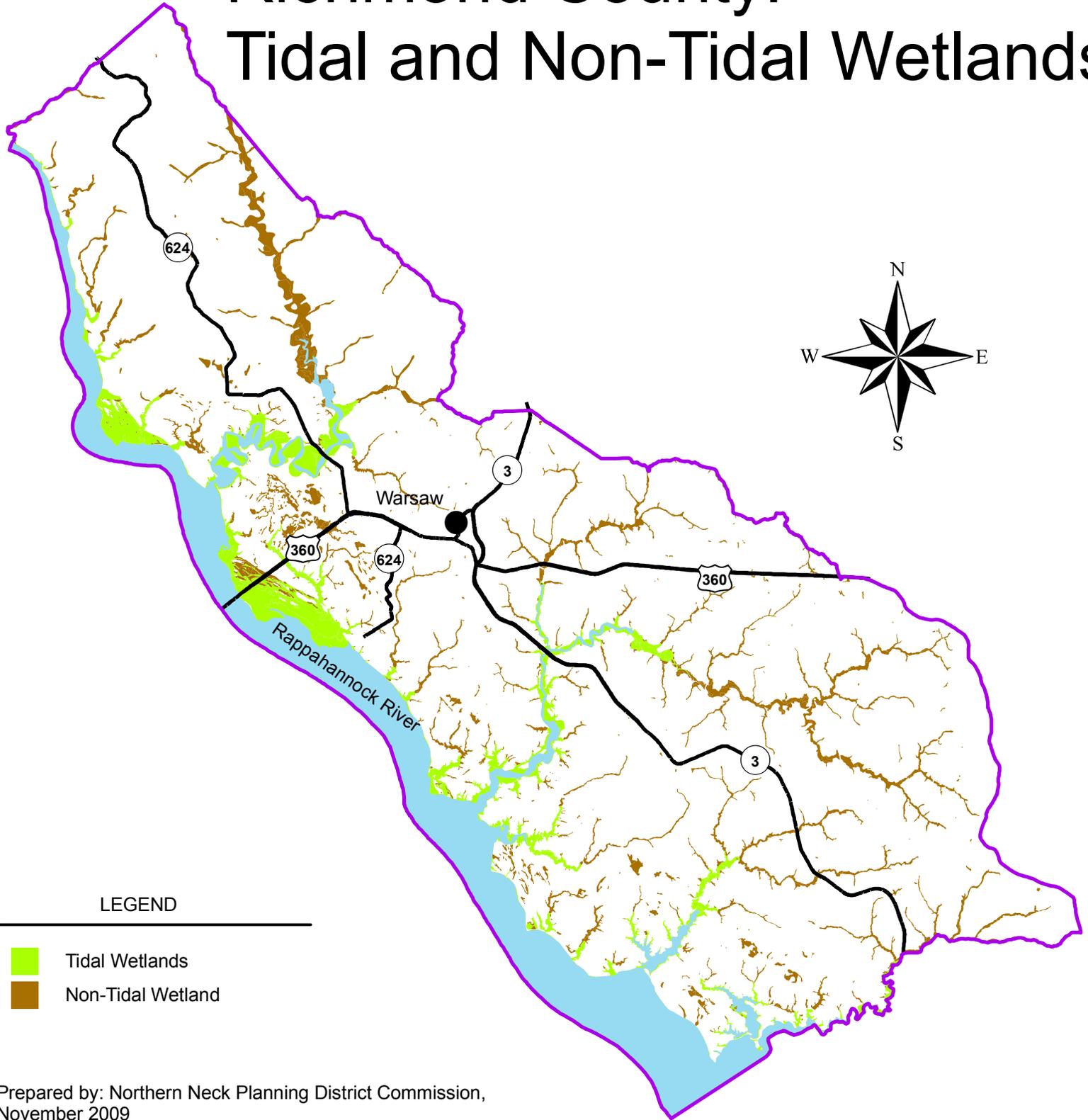
LEGEND

- 100 Year Floodplain
- 500 Year Floodplain

Prepared by: Northern Neck Planning District Commission,
November 2010
Data Sources: U.S. Department of Agriculture, Natural Resource
Conservation Service, SSURGO Soils, 1997
Richmond County Soil Survey, 1982
FEMA 2008
DFIRM 2010
USGS 1:100,000 DLGs



Richmond County: Tidal and Non-Tidal Wetlands



LEGEND

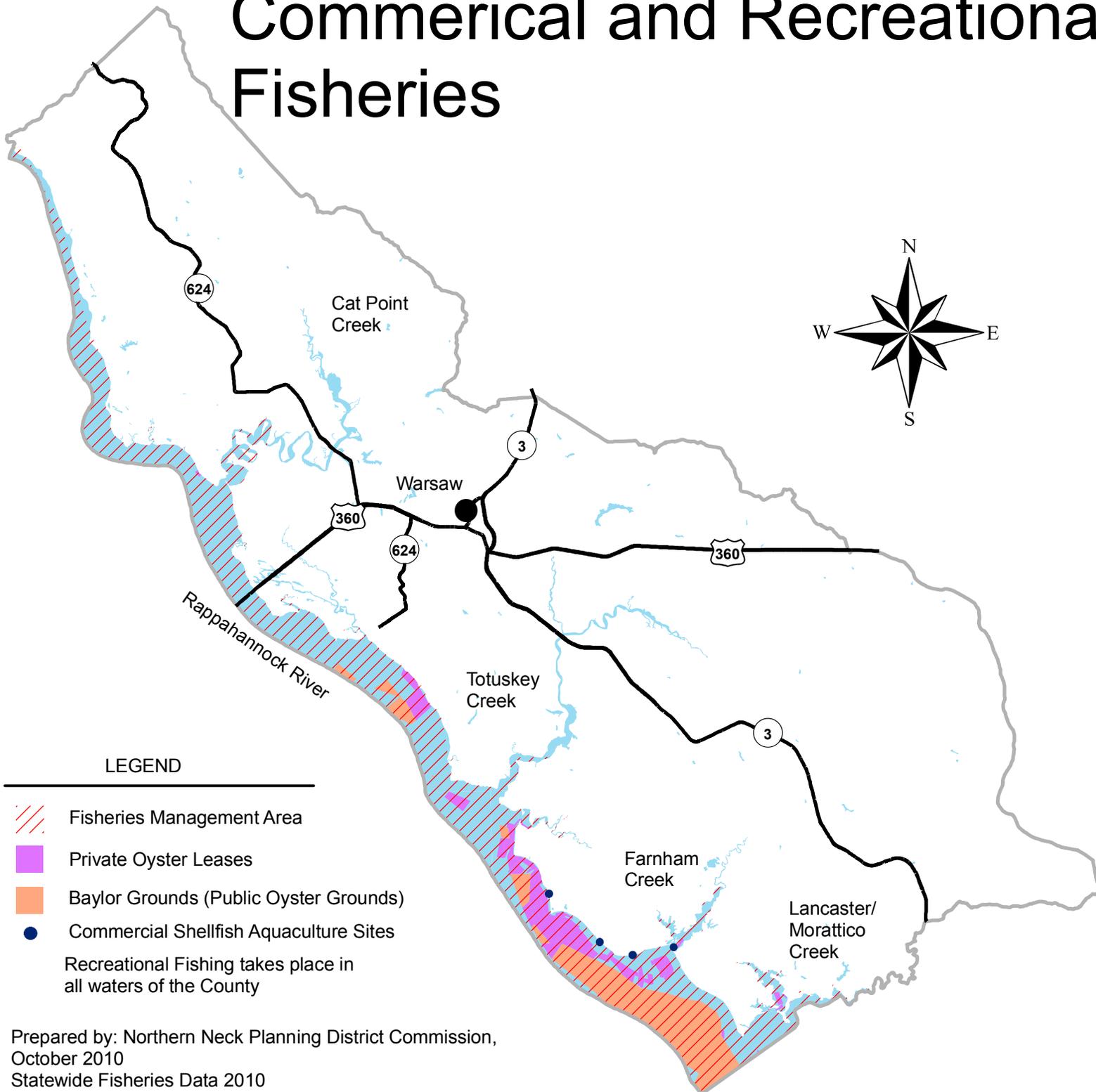
-  Tidal Wetlands
-  Non-Tidal Wetland

Prepared by: Northern Neck Planning District Commission,
November 2009
Data Sources:
USGS 1:100,000 DLGs
United States Department of Interior, Fish and Wildlife Service,
National Wetlands Inventory 1:24,000 Quad Overlay Sheets, 1973



0 1 2 4 6 Miles

Richmond County: Commerical and Recreational Fisheries



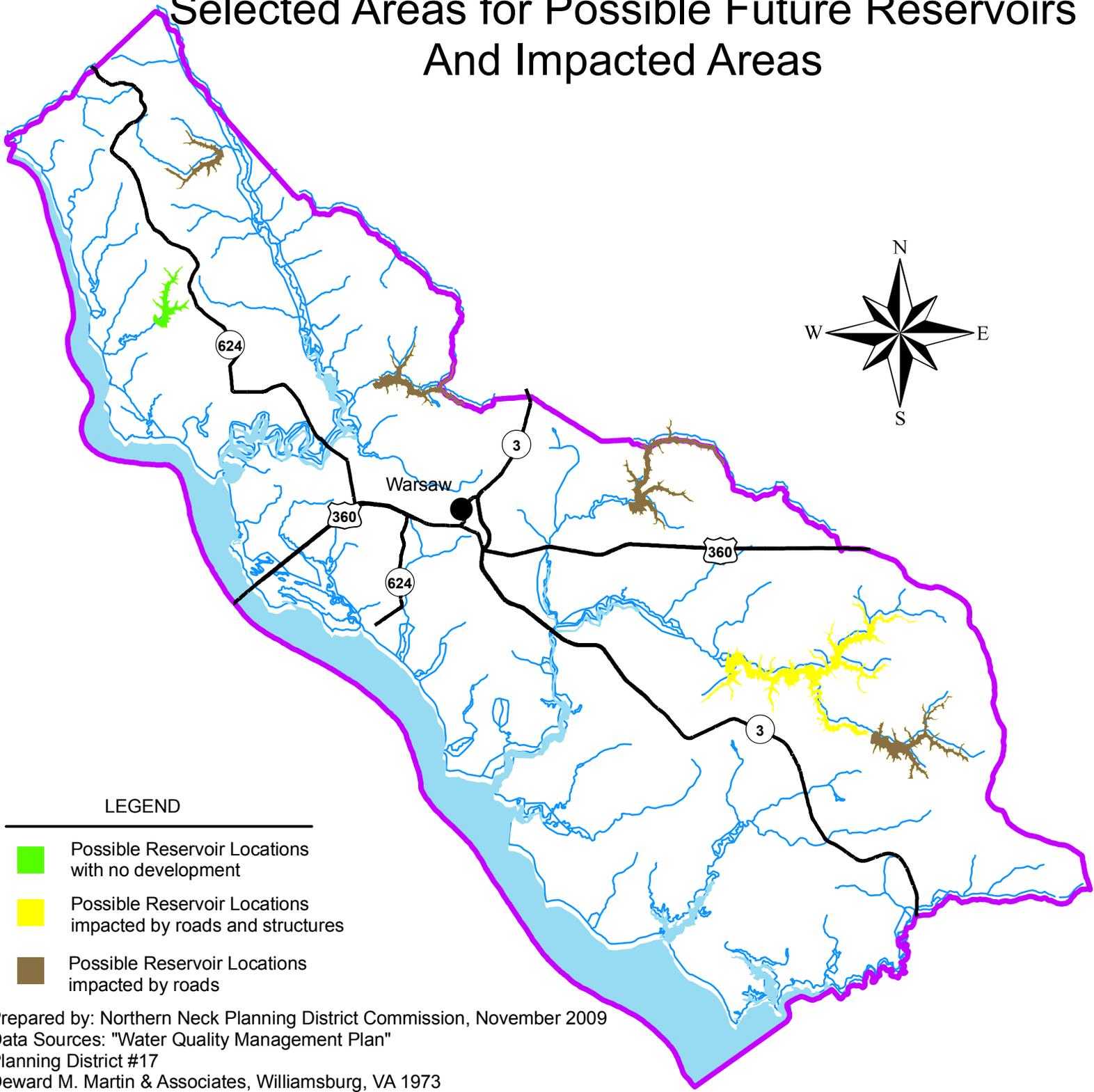
LEGEND

-  Fisheries Management Area
 -  Private Oyster Leases
 -  Baylor Grounds (Public Oyster Grounds)
 -  Commercial Shellfish Aquaculture Sites
- Recreational Fishing takes place in all waters of the County

Prepared by: Northern Neck Planning District Commission,
 October 2010
 Statewide Fisheries Data 2010
 Data Sources: U.S. Department of Agriculture, Natural Resource
 Conservation Service, SSURGO Soils, 1997
 Richmond County Soil Survey, 1982
 USGS 1:100,000 DLGs



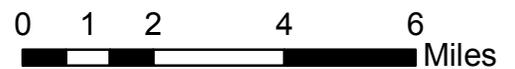
Richmond County: Selected Areas for Possible Future Reservoirs And Impacted Areas



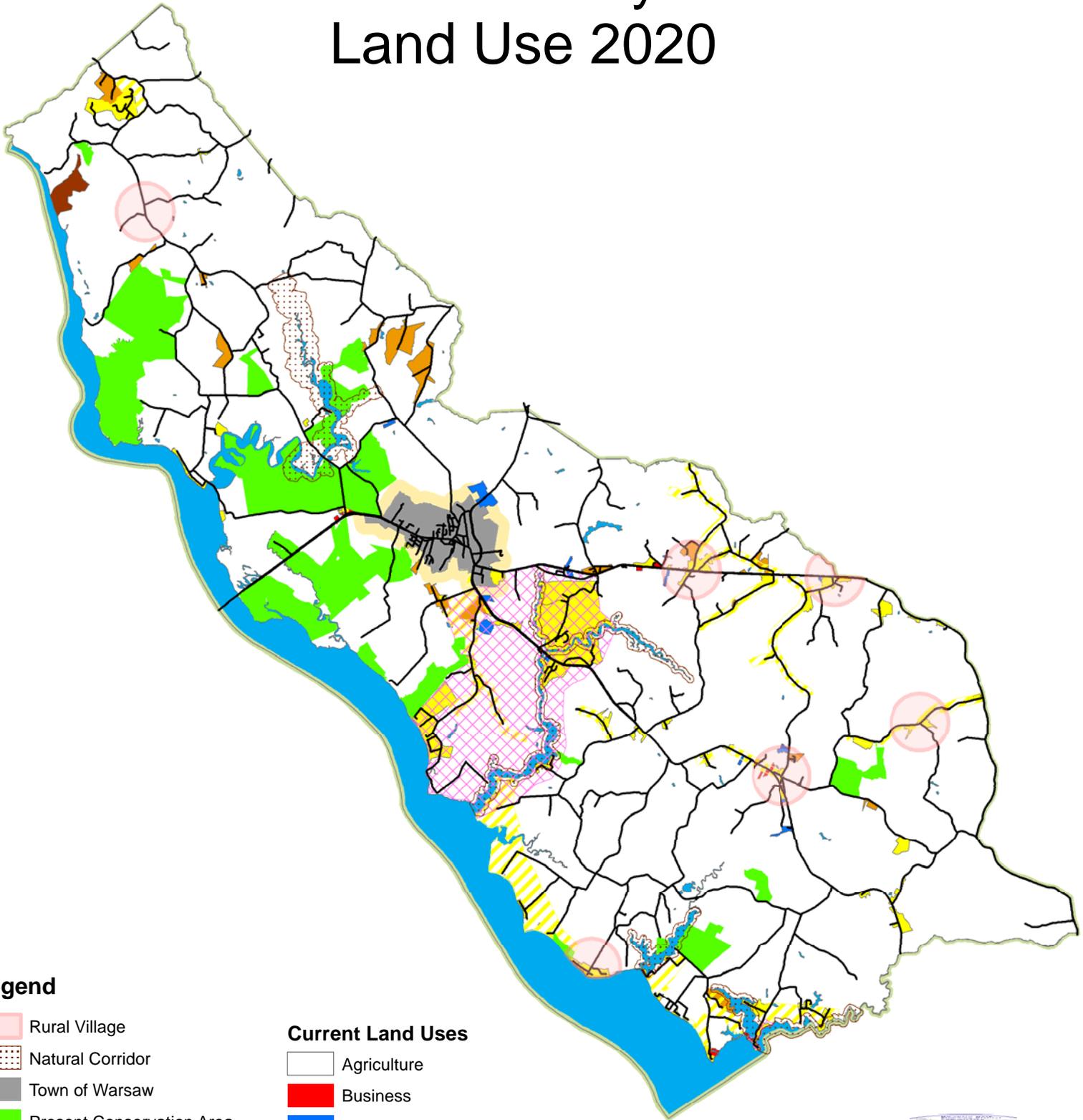
LEGEND

- Possible Reservoir Locations with no development
- Possible Reservoir Locations impacted by roads and structures
- Possible Reservoir Locations impacted by roads

Prepared by: Northern Neck Planning District Commission, November 2009
 Data Sources: "Water Quality Management Plan"
 Planning District #17
 Deward M. Martin & Associates, Williamsburg, VA 1973
 USGS 1:100,000 DLGs



Richmond County Future Land Use 2020



Legend

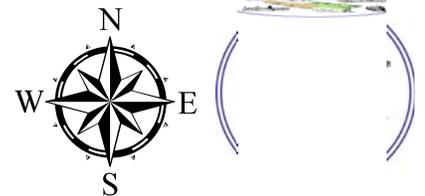
-  Rural Village
-  Natural Corridor
-  Town of Warsaw
-  Present Conservation Area

Proposed Future Land Uses

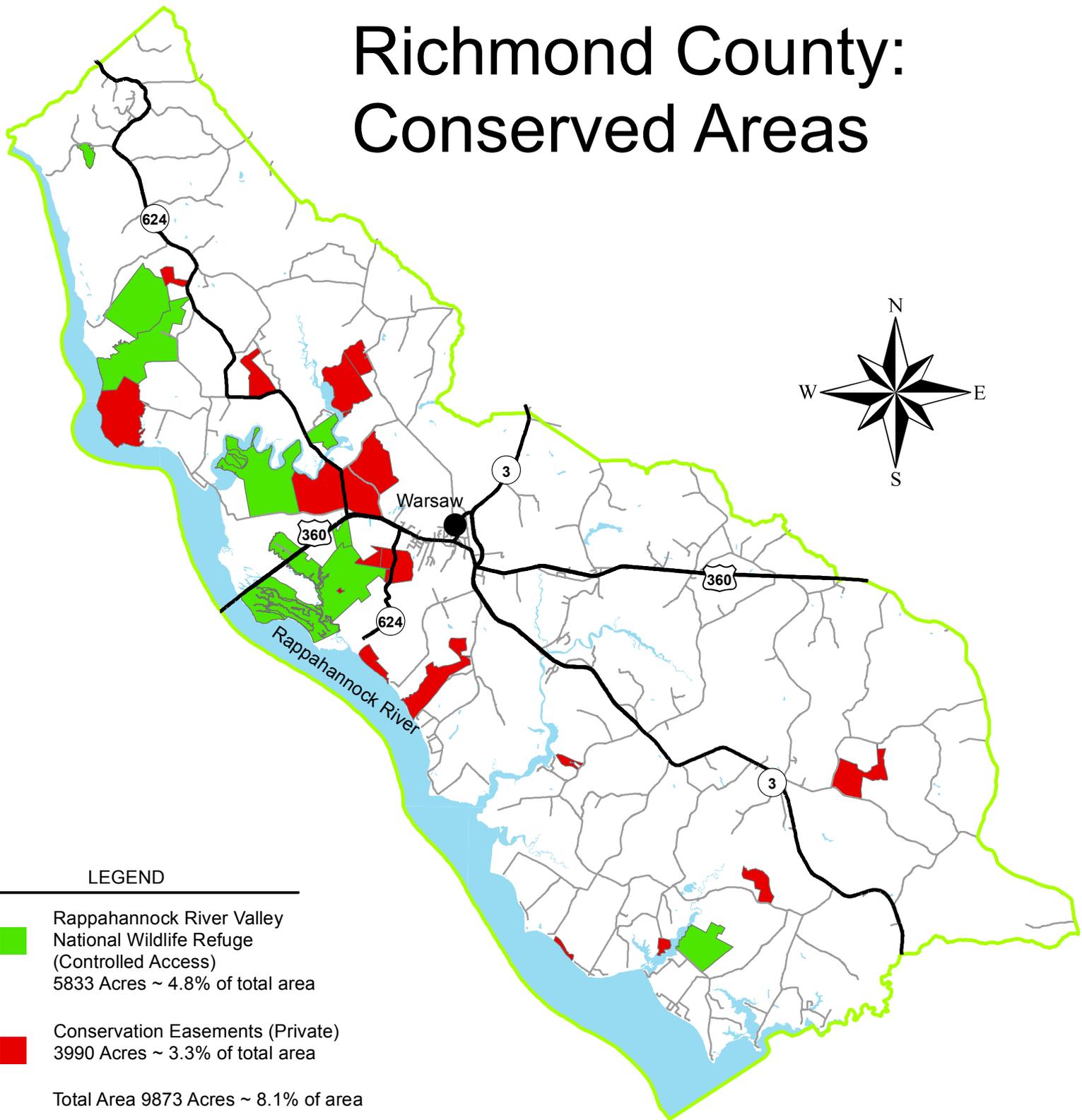
-  Business
-  Low Density Residential
-  Sewered Areas

Current Land Uses

-  Agriculture
-  Business
-  Industrial
-  Residential R-1
-  Residential R-2
-  Residential, Mixed Use R-3
-  Warsaw Growth Area



Richmond County: Conserved Areas



LEGEND

 Rappahannock River Valley
National Wildlife Refuge
(Controlled Access)
5833 Acres ~ 4.8% of total area

 Conservation Easements (Private)
3990 Acres ~ 3.3% of total area

Total Area 9873 Acres ~ 8.1% of area

Prepared by: Northern Neck Planning District Commission, November 2009
 Data Sources: U.S. Department of Agriculture, Natural Resource
 Conservation Service, SSURGO Soils, 1997
 Conserved Areas, DCR 2008
 Richmond County Soil Survey, 1982
 USGS 1:100,000 DLGs



GOALS, ISSUES, OBJECTIVES, AND RECOMMENDATIONS

The language of community planning uses terms such as goals, issues, objectives, recommendations, plans, and policies, each of which may have a specific meaning in the Comprehensive Plan. A goal is a broad statement indicating the direction the community would like to move in order to deal with a specific issue. Goals should represent consensus arrived at through public discourse because, once adopted, they become official policy of the local government. An **issue** may be defined as a matter of community concern based on community needs. It can relate to a specific problem, or an opportunity, or it might pertain to the entire county. The community may express its intent to deal with an issue by formulating a **goal**.

An **objective** further narrows the goal into accomplishable segments. In working to accomplish objectives a community moves towards achieving their goals.

A **recommendation** addresses how the community might proceed in achieving the goals or objectives of the community. Under Virginia's planning statutes, a Comprehensive Plan for a county consists of a Land Use Plan, Highway Plan, and Community Facilities Plan. The statutes also provide for the inclusion of plans for special conditions or a special area as part of the Comprehensive Plan. In this case, the plan for preserving the Chesapeake Bay is included as one of the special conditions to be recognized in the Comprehensive Plan. The planning statutes also establish a procedure for preparing and adopting such plans. In general, the statutes require (1) that a Comprehensive Plan be general in nature; (2) that it relate to physical development or the potential for such development; and (3) that it address the broad (comprehensive) needs of the community. Once a Comprehensive Plan, or element thereof, has been adopted, the focus then turns to implementing the policies or actions set forth therein.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

Historic and Archeological Resources

1. GOAL: To protect the integrity and value of archaeological and historic resources in Richmond County.

ISSUE: Saving archaeological and historic sites from destruction can be done. The County recognizes that archaeological and historic sites are non-renewable resources. Once a site has been disturbed, or worse, destroyed, it can never be restored. The information it contained can never be retrieved and so the stories that might be revealed by a study of that site can never be recovered.

The conversion of archaeological and historic sites can be compatible with development. With this, the County should protect its rich archaeological record in a way that is compatible with development. The County should also seek to protect important historic structures from degradation and destruction.

OBJECTIVES:

- (1) To protect important Richmond County archaeological sites from degradation and destruction.
- (2) To protect Richmond County's important historic structures from degradation and destruction.
- (3) To protect historic cemeteries from destruction.
- (4) To support the mission and activities of the Richmond County Museum.

RECOMMENDATIONS:

- (1) Establish and maintain a County archaeological site, cemetery site and historic structures inventory; promote the conservation of these sites in partnership with the County historic museum.
- (2) Promote the implementation of best management practices (BMPs) for all agricultural and forest operations adjacent to known archeological sites. While these practices are intended to maximize yield, they are also in the best interest of conserving buried sites.
- (3) Recommend that the Board of Supervisors work with landowners to designate historical sites for additional protection where appropriate; if development is proposed on or adjacent to known sites preserve sites through set-aside or buffers around archaeological locations.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

- (4) Encourage the County school system to develop and include discussions of the County's archaeological history in social studies units, as appropriate under the Virginia Standards of Learning (SOLs).
- (5) Encourage the granting of archaeological, historical and conservation easements.

Natural Resources and the Environment

2. GOAL: Protect the health, integrity, and value of the natural resources and environment of Richmond County.

ISSUE: The community has expressed a clear desire to protect the integrity of the natural resources with specific concern focused on the surface (streams, rivers and lakes) water. Potential impacts on water quality come from current activities such as forestry and farming, stormwater that runs off from the built environment, and the onsite treatment of residential wastewater. Some protection of the resources is afforded through the implementation of the Chesapeake Bay Preservation Act and the Virginia Wetlands Act. But additional considerations must be given as actions on the uplands pose threat of impact to water quality.

Concerns with agriculture include the over application of nutrients, biosolids and pesticides. With respect to development, there is potential for impacts to water quality as land once not available for development because of suitability for septic is now viable due to the acceptance of engineered and alternative systems. In addition, there is concern with the increased desire to develop waterfront property. All of these pose threats to the living resources (crabs, oysters, submerged aquatic vegetation) and overall water quality. Chemical and nutrient applications in both agricultural and residential settings pose health threats to water quality.

Most of the shoreline of Richmond County is free of serious erosion with the exception of (1) an area of approximately one mile, which is located between Maguire Creek and Little Carter Creek; and (2) a smaller area between where Lancaster and Morattico Creeks join near the southern part of the County. The most vulnerable areas appear to be located where winds from the Chesapeake Bay blow directly up the Rappahannock River.

OBJECTIVES:

- (1) To protect surface water quantity and quality from sedimentation, pollution, or degradation.
- (2) To protect wetlands/marshlands/beaches from damage or destruction through proper development and enforcement of existing regulations.
- (3) To maintain and preserve prime farmland, forest land, and soils.
- (4) To maintain a healthy environment and sufficient habitat for game and wildlife in the County.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

- (5) To minimize the impact of agricultural/residential fertilizers, herbicides, and pesticides by working with the Soil and Water Conservation District and local stakeholders to ensure that nutrient and pesticide management and conservation planning is in place.
- (6) To develop a stormwater management program to mitigate the impact of stormwater runoff.

RECOMMENDATIONS:

- (1) Strive to enforce all applicable natural resource/environmental regulations and programs (i.e. Chesapeake Bay Preservation Act).
- (2) Encourage the implementation of best management practices (BMPs) for land development (control storm water run-off) and all agricultural and forestry operations.
- (3) Encourage the Planning Commission to conduct site visits and address the water quality concerns of residential development through the subdivision review process, on a site-by-site basis.
- (4) Encourage the utilization of open space or habitat corridor designations for sensitive lands, the development of which may lead to impacts on water quality and/or wildlife habitat.
- (5) Encourage County officials to utilize, in a comprehensive fashion, the resources provided by the Northern Neck Soil and Water Conservation District, the U.S. Natural Resource Conservation Service and Farm Service Agency, Division of Forestry, VA Cooperative Extension Service and other agencies which work with farmers and foresters to promote soil conservation and water quality.
- (6) Promote the use of natural shoreline protection strategies, where appropriate.
- (7) Promote subdivision design to minimize the impact of near shore/water dependent amenities on wetlands and water quality.
- (8) In order to protect and preserve farmland and forest land, encourage the concentration and clustering of residential development through the application of appropriate zoning.
- (9) Encourage forestry planning and reforestation in the forestry operations in Richmond County.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

- (10) Investigate the advantages and disadvantages of creating Agricultural and Forestry Districts in Richmond County.
- (11) To encourage state, federal, local, and private cooperative efforts to develop purchase or transfer of development rights programs to conserve and protect habitats and natural areas.
- (12) Support strategies designed to protect the biodiversity within tidal marsh areas, such as through the control of *Phragmites australis*.
- (13) Support volunteer and non-profit organizations in the education of the public and clean-up initiatives to protect and improve of the County's natural resources and environment.
- (14) Work with VA Department of Conservation and Recreation (DCR), neighboring localities, and local planning agencies to define most effective and efficient manner to implement local Stormwater Management Programs.

3. GOAL: Protect the quantity and quality of groundwater and drinking water of Richmond County.

ISSUE: The Northern Neck Planning District Commission (NNPDC) took the lead on the development of a Regional Water Supply Plan for the Northern Neck. The intended outcome of this planning effort was to:

- Assess current and future water supply conditions
- Contribute to the development of a comprehensive, state-wide, water supply planning process that:
 - Ensures adequate and safe drinking water is available.
 - Protects all other beneficial uses of the state's water resources.
 - Encourages the development of alternative water sources.

For Richmond County and all other Northern Neck localities this plan focuses on groundwater because all community water sources are groundwater dependent making the term drinking water synonymous with groundwater for the region. At present, concern for groundwater/drinking water is mostly focused on protecting the aquifers. Concerns can be categorized and summarized as:

- Current developed/residential land and the potential for more development resulting in:
 - Failure of existing onsite waste water treatment.
 - Lack of adequate septage treatment and disposal.
 - Unmitigated Stormwater Runoff from commercial and residential development.
 - More development requiring onsite waste water treatment.
 - Fuel storage above and below ground.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

- Development of roads and parking lots impacting both infiltration rates and quality of runoff.
- Maintenance of onsite sewage disposal systems.
- Agricultural land use:
 - Agricultural chemical application to crop land and the high capacity of the soil for leaching of nitrates and pesticides/herbicides.
 - Management of livestock feeding operations.
 - Management of livestock manure disposal.
- Over withdraw:
 - Resulting in depth to groundwater increasing in the region posing a capacity threat to more shallow wells.

With respect to use and quantity, the regional planning by the NNPDC concludes that the resources in the region meet current and projected regional demands. However, primary demand on the aquifer does not come from within the Northern Neck. The aquifers relied on by Northern Neck users are shared by Virginia's Middle Peninsula and Southern Maryland who demand water at a level 6 to 10 times greater than the regional demand.

Neither Richmond County nor any other Northern Neck localities (or Middle Peninsula) are designated as Groundwater Management Areas. The lack of this designation leaves little control over the amount of water being withdrawn from the resource, a lack of knowledge on the current quality/quantity of the groundwater and trends, and mitigation or response planning in the case of events that may impact the resource. Efforts are underway to add this designation to the area.

Past planning efforts identified a number of potential surface water reservoir areas that could be used for water supply in the event that ground water resources became inadequate. A recent survey shows that all but one site have been impacted by development with the construction of roads, buildings or homes. (See Map 17) The loss of five of the six reservoir sites to development is a troubling trend. Impacts to these sites consist of structures erected or roads located within the bounds of a proposed reservoir.

OBJECTIVES:

- (1) To protect groundwater resources, quantity and quality, from degradation and over withdrawal.
- (2) Minimize the impact of agricultural/residential fertilizers, herbicides, and pesticides by working with the Soil and Water Conservation District and local stakeholders to ensure that nutrient and pesticide management and conservation planning is in place.

RECOMMENDATIONS:

- (1) Support the County, in partnership with regional stakeholders (including the Middle Peninsula), to pursue designation of the region as a Groundwater Management Area.

PART IV GOALS, ISSUES, OBJECTIVES AND RECOMMENDATIONS

- (2) Develop strategies to protect remaining potential reservoir site and watersheds.
- (3) Create reservoir protection districts designed to protect areas for future reservoirs and accompanying watersheds.
- (4) Continue to inventory and promote the proper capping and abandoning of wells that are no longer in use.
- (5) Support volunteer and non-profit organizations in public education on groundwater, drinking water and private well protection, as they relate to land use and potential impacts.
- (6) Assist low income housing with access to safe drinking water. Develop a program to protect improperly constructed wells.
- (7) Identify effective and economical approaches to retrofit existing septic and onsite sewage systems to provide additional treatment and compliance with the Bay Act.
- (8) Provide access for septage at local municipal sewage treatment facilities. Work with the Town of Warsaw to receive and process septage from the County.

Land Use

4. GOAL: Protect the rural character and the viability of pursuing farming, fishing, and forestry.

ISSUE: The landscape of Richmond County has historically been a key component to supporting the County's leading economies (farming and forestry) and way of life for its residents. Pressure on the availability of land to continue this use remained relatively low though the late 20th century. Population changes in the region and outside of the Northern Neck are likely to have an impact on the economy and how and where development is considered viable.

The economics of the farming and forest industries have changed dramatically over recent decades reducing the numbers of "small" family farms. As people leave the industry, their property is made available for sale, opening the door to change in land use. Common in rural regions are commercially held large land tracts that, if no longer targeted for natural resource based activities, are typically put up for sale and development. Sale of these tracts can lead to drastic changes in land use thereby altering community character. These changes are often not in line with community/local planning.

With changes in the regional population, it is expected that transportation infrastructures will see improvement. This reduces travel times and increases accessibility of rural land once not

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considered commutable. This, along with the desire to mirror the waterfront development of other localities and the ability through the increased use of “alternative” onsite waste water treatment to build on land once considered unsuitable for development, places increased pressure for land use change that can be in conflict with the goal to protect rural character and the viability of natural resource based activity. Most of the recently proposed developments in the county are not slated to be built near the town of Warsaw, the area identified as the desired growth area.

OBJECTIVES:

- (1) Encourage development in areas that currently or could more easily be supported by current infrastructure (transportation, public water and sewer).
- (2) Use land use regulations to protect the character of the existing residential and agricultural areas and guide proposed development.
- (3) Make use of the Rappahannock River and its tidal tributaries for recreational access while protecting existing habitat, wetlands, marshlands, and shorelines.

RECOMMENDATIONS:

- (1) The Future Land Use Map shall be utilized when considering land use decisions.
- (2) Dense residential, commercial, and industrial developments should be limited to areas where public services/infrastructure can be provided in an efficient manner.
- (3) Work to influence development or land use change such that it is compatible with adjacent land parcels.
- (4) Investigate land use/development strategies, including purchase of or transfer of development rights programs, which protect prime agricultural and forest lands.
- (5) Continue to utilize land use taxation as a method to encourage the continuation of agricultural and forestry land uses.
- (6) Conduct a review of zoning and land development codes and ordinances on a regular basis to ensure compatibility with various goals, objectives, and recommendations of this Plan.
- (7) The County should continue to use open space requirements in the County's Subdivision Ordinance.

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- (8) Consider proposed land use change or development using existing land use regulations and development tools to support the decision making process.
- (9) Coordinate the County land use plan with the Town of Warsaw to ensure a more efficient and compatible land use development plan.
- (10) Identify lands suitable for access to public water and acquire right of entry for boating and beach access.
- (11) Conduct a feasibility study for the creation of new agricultural limited zoning or modification of existing agricultural zoning to encourage cluster design techniques and require open space that will allow the remaining land to be used for recreation, agriculture, forestry or preservation of environmentally sensitive features.

Affordable Housing

5. GOAL: Support the construction, rehabilitation and maintenance of affordable housing, sufficient to meet the current and future needs of residents of all levels of income in the County.

ISSUE: Housing affordability is generally defined by the ratio of average sale price to average household income. When home purchases are made using conventional home financing, housing is considered affordable when the ratio falls between 2.5 and 3.2 to 1 (2.5-3.2:1). A higher or increasing ratio means home sale prices are rising in comparison to the income of the purchaser. Based on 2008, data the ratio in Richmond County has been reported as 5.29:1.

Locality	Median Household Income 2008	Average Sale Price (2005-2008)	Ratio	Maximum Affordable	Affordability Gap
Richmond County	\$42,224	\$223,438	5.29	\$118,227	\$105,211
Westmoreland	\$44,591	\$280,292	6.29	\$124,855	\$155,437
Northumberland	\$47,713	\$392,600	8.23	\$133,596	\$259,003
Lancaster	\$41,886	\$462,990	11.05	\$117,281	\$345,709

While Richmond has the lowest ratio in the Northern Neck, it is elevated above what is defined as affordable in the 2009 Housing Needs Study for the Northern Neck.

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The market pressures that are forcing the increase in home sale price are factors external to the County and the region and have pushed prices up at a rate higher than increases in local wages. Though these pressures have been less on Richmond County (as the lowest regional ratio documents), the data suggests that affordability of homes in the County is decreasing. The lower affordability ratio in the County is partly due to much of the initial external pressure (post 1990) being placed on more readily accessible waterfront property in the rest of the Northern Neck, but there are other forces at work as well.

The other side of the external pressure coin is proximity to major transportation arteries (U.S. Routes 301, 3, 17 and 360, and I-95) and the potential for improvement in information systems. Continuing improvement of transportation systems and easing commutes will likely result in increased pressure from working families with higher incomes looking for relief from housing costs where they currently live. Improved communications (broadband internet, for example) increases the ability of people to work from home and telecommute and live in the region with an increased buying power.

These factors create two housing markets. The 2009 study defines one market being a local market that residents utilizing local wages can compete for and the second a market, non-local, retirees, seasonal buyers, and commuters using non-local wages compete for. These two markets can, for the most part, be split as nonwaterfront property and waterfront property. Of particular concern is that the affordability ratio has trended upward in the Northern Neck even for non-waterfront average home price going from 2.75:1 in 2000 to 4.26:1 in 2008. This means that people living and working in the County are losing ground even in the local market where they are expected to be able to compete. Richmond County's non-waterfront local market ratio is 4.69:1 (average sale price to median household income).

Value Non-local Waterfront	\$436,943
Value Local Non-Waterfront	\$198,221
Richmond Median Household Income	\$42,224
Affordability Ratio	4.69
Maximum Affordable	\$118,227
Gap to Non-Waterfront Affordable	\$79,994

The projected increase in housing demand in the region and County (the increase in number of houses needed) is modest and likely can be absorbed by the rate of new home construction that has occurred over recent years. However, the forces and demands on the types of housing can still impact the affordability. Of particular concern and noted in the 2009 study is the expected sizable increase in demand for single family homes with incomes under \$25,000 and the largest increase in demand from the sector over the age of 65 across income levels. The rising ratio of affordability works against availability for most of these households. Additional concerns noted by the 2009 study include: new home construction in the face of flat population statistics (new residential building on undeveloped lands versus purchasing existing home stock) and the lack of available rentals.

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OBJECTIVES:

- (1) Encourage the development of efficient, well planned, and safe residential areas where electric, sewer and water services are provided in the County.
- (2) Work to expand sewer service in the County to serve more areas.
- (3) Encourage the establishment of programs to support improvement and upgrades to bring substandard housing up to minimum building code standards.
- (4) Recognize the housing needs of the community and support the provision of adequate housing and infrastructure to meet the needs.

RECOMMENDATIONS:

- (1) Support programs to encourage maintenance of owner-occupied homes and renter-occupied units (for example septic pump-outs, weatherization, energy efficiency, drinking water testing).
- (2) Encourage non-profit organizations, such as Habitat for Humanity, to become involved in housing improvement projects.
- (3) Educate developers on federal and state resources (Community Development Block Grants, Farmers Home Administration, U.S. Dept. of Housing and Urban Development) that can subsidize the development of affordable housing.
- (4) Consider the impact of developing a mobile home park.

Economic Development

6. GOAL: Enhance the economic base and employment opportunities in Richmond County.

ISSUE: The region has relied on natural resources as a foundation of an economy focused on farming, forestry and seafood. Manufacturing has also played a role in the development of Richmond County and other Northern Neck localities but in recent decades has decreased.

The declining ability to make a living in the resource based industries (including the loss of nearly all seafood related work) as well as the loss in the manufacturing base are trends that will take considerable regional effort to turn around. This trend along with the kind of employment opportunities that have replaced those traditionally associated with the region make the economic picture in the area complex. Recent jobs have been in the service industry and few pay the same wage as those they have replaced.

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The County and region are also faced with economic infrastructure deficits that need to be addressed in order to be competitive in attracting new businesses to the area. Transportation for overland shipping remains a large issue for the region. The Northern Neck has no rail, no commercial river port, and no major air facilities. Over the road trucking is not optimal because of access limitation due to the need to cross major rivers. This is further complicated by traffic congestion and constriction along single lane rural roads (primarily VSH-3).

As the issues and trends described in this section continue, they create a drain on the availability of a qualified workforce. One reason many recent high school or college graduates leave is a lack of viable work opportunities within the County. Many residents or former residents who may have once been appropriately employed in the region have now had to look elsewhere for gainful employment.

OBJECTIVES:

- (1) Aggressively market the Commerce Park to potential firms.
- (2) Work with the town of Warsaw to implement the Town's revitalization plan.
- (3) Encourage and support the expansion of existing businesses and industries, as well as agri-business.
- (4) Aggressively market the County's potential as a destination for tourism specifically related to river recreation, historical resources and agri-tourism.
- (5) Work with Rappahannock Community College to continue their efforts to provide appropriate industry related technical training workforce development.

RECOMMENDATIONS:

- (1) Hire a full time economic development specialist.
- (2) Assist with funding for the revitalization of the Town of Warsaw.
- (3) Support regional development of tourism related economies.
- (4) Where opportunities present themselves, support the continued development of the Commerce Park.
- (5) Improve the effectiveness of organizations such as: Richmond County Industrial Development Authority, Small Business Development Center,

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the Resource Conservation and Development District, and the Chamber of Commerce.

- (6) Support the regional efforts to re-establish the viability of seafood economic industry (opportunities to harvest crabs and oysters).
- (7) Recommend that the Planning Commission study the impact of new housing development on the local economy.

7. GOAL: Provide opportunities for broadband access to the businesses and citizens of Richmond County.

ISSUE: Internet access in the Northern Neck was limited to dial-up only connections with speeds not in excess of 56,000 bits per second, unless expensive wireless service was purchased. Such limited speed or bandwidth severely hampered the transfer of large amounts of information. Technological developments have now made it possible to transmit data at speeds in excess of 5 million bits per second, nearly 100 times faster than those achieved via dial up. This technology is commonly referred to as broadband. As broadband technology emerged, internet service providers invested in infrastructure to provide the service near population centers.

Areas near the Town of Warsaw have undergone infrastructure upgrades and now have access to broadband. Yet, due to the cost of updating infrastructure, many outlying areas throughout the County do not have access to broadband. Regional efforts are currently underway to secure grant funding to increase opportunities for access in unserved regions.

Planners know high speed, reliable, internet access is vital for attracting new businesses to the area. Providing broadband access to the Town and County also provides enhanced educational and work from home opportunities to the citizens of the County.

OBJECTIVES:

- (1) Extend broadband services throughout the County.
- (2) Increase broadband opportunities to businesses.

RECOMMENDATIONS:

- (1) Support regional initiatives to acquire grant funding for broadband infrastructure extension.
- (2) Support telecommuting as a way to attract business to the County.

Community Services and Facilities

8. GOAL: Develop a capital improvement plan to support community services and improve community planning.

ISSUE: To achieve the type of growth and residential development, economic development and housing goals set out in this Plan, adequate community facilities and services (examples; expanding water and sewer service, development of recreational programming and facilities) need to be provided. In addition, a capital improvement plan may support future transportation planning, a vital need as a community develops.

Since the 2001 revision of the Comprehensive Plan the County has maintained most community services and facilities and improved in some areas; emergency services are no longer entirely volunteer, the sheriff's department staff has increased and the YMCA now has a permanent location to provide programming.

The 2020 plan review process acknowledges these accomplishments but identifies a lack of planning for continued service and facility improvement as well as increasing the scope of program/service provision as a barrier to improving the quality of life for residents over the next decade.

Response to a survey implemented to support the review of the comprehensive plan suggests that a range of almost half to slightly greater than half of the people in the county expressed a high level of satisfaction with the quality of life. Specifically cited as components of their high satisfaction rating is the low incidence in crime and the rate of residential development. When questioned on satisfaction concerning specific community services such as fire and police as well as school/educational programs the percentage of residents experiencing high satisfaction increases.

OBJECTIVE:

Develop a broad capital improvement plan.

RECOMMENDATIONS:

- (1) Consider comprehensive planning goals and objectives during plan development so that planning covers current facilities maintenance and improvement needs and future infrastructure and programming needs including; recreational facilities and programming, water and sewer service expansion, surface water reservoir, purchase of or transfer of development rights programs and communication infrastructure.
- (2) Work with the Town of Warsaw to identify and plan for infrastructure needs that benefit both the town and the County.

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- (3) Continue to pursue loan and grant opportunities from State and Federal sources to improve school and community physical facilities where and when needed.
- (4) Continue to support the development of the Richmond County Community Park.

Transportation

9. GOAL: Support the provision and continued development of an adequate and safe transportation network to serve the residents and visitors of the County.

ISSUE: The transportation system has major impacts on the character and nature of the growth and development of an area. The location of water and sewer will increase the opportunity and rate of development in areas. Local and regional transportation infrastructure impacts the validity of land use in some locations or encourages specific land use.

The transportation system should connect the various communities and activities dispersed throughout the County. The components of the transportation system should be designed to accommodate the travel demands of the people both within the County and between the County and other areas. It should also be noted that an effective transportation system or network is one that provides for the movement of people, goods, and services within an adequate time-span, in the safest, most convenient and environmentally sensitive manner.

OBJECTIVES:

- (1) Continue the search for funds to improve access to industrial sites as needed.
- (2) Encourage coordination and cooperation between County officials, the Town of Warsaw, and the Virginia Department of Transportation in developing the Six-Year Secondary Highway Plan and Primary Transportation Plan.
- (3) Analyze existing transportation patterns on major corridors and assess the need for future transportation improvements, such as a limited access US-360 bypass around the Town of Warsaw, as well as alternative modes of transportation.
- (4) Promote Bay Transit as a form of public transportation.

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RECOMMENDATIONS:

- (1) The County should ask VDOT to prepare a series of major corridor studies, such as one regarding the need for a limited access US-360 bypass around the Town of Warsaw, as well as studies to address the need for and feasibility of alternative modes of transportation.
- (2) The Board of Supervisors should continue to work with VDOT and appropriate organizations to identify and prioritize improvements for the State Six-Year Secondary Highway Plan and Primary Transportation Plan.
- (3) Continue to seek funds for a RideShare parking facility.

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LAND USE

(See Part III Maps Pg. 18)

The Future Land Use Plan for Richmond County, while it is general in nature, reveals the components of land use that are expected to comprise the overall framework of the County. Most of the land is shown to be continued for use for agriculture or forestry.

The plan envisions limited residential development along existing roads, predominantly in the southeastern half of the County. Roads in higher elevations, where soils are better, are seen as the predominant area for low density residential, while additional residential development is envisioned along the shorelines of the Rappahannock and its navigable tributaries where environmental and soil conditions will permit. Rural villages are planned at six locations: Farnham, Haynesville, Mulch, Newland, Sharps, and Village.

Commercial and industrial designations are limited in the plan, since it is the intent to direct most of this type of growth to the Town of Warsaw. The remaining areas of the County are set aside for agriculture, forestry and residential development. For a more detailed description of the land use plan, the reader should refer to the attached map and this Land Use Plan. These locations, while not parcel specific, are delineated to accommodate population projections and future development needs for the County. This section describes the kinds, locations, and intensities of land uses recommended for Richmond County. The County's natural environmental limitations and the government's capacity to provide public services are reflected in the plan, which rests in principle upon the Goals, Issues, Objectives, and Recommendations stated in the Richmond County Comprehensive Plan.

Intensive development is rare except within and adjacent to the Town of Warsaw. Here, there may be a likelihood that urban type development will spill over into the County. The Richmond County Board of Supervisors purchased 57 acres of land that is now within the Town of Warsaw for development of a Commerce Park. This property is zoned for industrial and manufacturing uses and is considered to be the primary site for business and commerce within the Town of Warsaw and the County. The Richmond County Board of Supervisors also purchased 85 acres of land adjoining the Commerce Park for development of a multi-function community park. The County feels that these two parcels will provide an excellent opportunity for job creation and development of cultural and recreational resources.

Onsite sewage treatment and disposal is a critical factor in determining the suitability of land for development. While septic systems were once the primary means of sewage disposal, changing technology and a new regulatory environment now provide additional ways to deal with this important issue. Property once thought unsuitable because of soil limitations for septic use may now be considered for development, in some cases. Because onsite sewage disposal systems are the principal means for residential sewage disposal, the natural capacity of the soils to treat and allow water to move downward (percolation) must be carefully evaluated. Soils that are not sufficiently well drained to provide both treatment and disposal may require additional engineering and pre-treatment.

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Analysis by the Northern Neck Planning District Commission indicates that nearly three-fourths of the County has severe limitations for conventional onsite sewage treatment and disposal. The land that is the most favorable (19.9 %) is concentrated on higher grounds and mostly along existing roads in the central and northeastern portion of the County where the soils are well drained. Planning for future residential development indicates that these are the most suitable areas for consideration while development in the lower "necklands" will present challenges that must be overcome with advanced technology or may even require the extension of central sewage in order to protect public health and the environment.

The following land uses or activities have been identified as part of this Comprehensive Plan:

Agriculture

The raising of crops and animals has dominated the economic viability of Richmond County for more than three hundred years. Farm land is a positive resource for many reasons, which include the following:

- farming serves as a base for the local economy;
- farming continues through family-run operations;
- farmland remains available for future crop production;
- farming continues and operations have diversified to include nurseries, truck-farming, and vineyards;
- aesthetic values spill over to the entire community;
- farming reduces runoff and prevents erosion.

Primary agricultural (including forestry) lands should be protected. Development should be allowed only if the best and most productive cultivated and forest lands are not divided and/or taken out of production. Intensity of use, density, lot size and other factors should be carefully considered and tailored to suit particular parcels of land. By structuring regulations to promote the maintenance of existing farm land and allowing the development of adjoining lands, both the farmer and developer will benefit. Agricultural land use also dominates the visual landscape of Richmond County. While forests cover approximately 59% of the County, agriculture is the most visible land use because the transportation network is adjacent to these lands. Many of the original roads found in Richmond County were constructed to accommodate movement of people, equipment, and crops associated with agricultural activities. In addition, roads are usually placed on better soils and land. It has been only during the later part of the twentieth century that these roads have evolved toward use for automobile-oriented commuting. From these roads, both the residents of the County and tourists visiting the County observe the pastoral agricultural vistas indicative of the rural landscape. The Comprehensive Plan identifies protection of both the rural atmosphere and prime agricultural lands as one of its goals.

Prime farmland is targeted for development because in most cases it will support some type of onsite sewage disposal system. Pressures to convert this land to residential and business development will continue to rise. The Comprehensive Plan focuses on two strategies to preserve farmland: 1) to encourage the safekeeping of land for farming, forestry and open spaces; and 2) to ensure that development, when it does take place, be compatible with the

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remaining agricultural and forest land uses. Compatible development includes small-scale, clustered residential uses, passive recreational uses, and open space.

Business

Business and commercial development contributes economically to a solid community life in several ways. Convenient shopping, job opportunities, and a viable tax base are the most important components of business development. Regional shopping areas are beneficial because they attract a wide and diverse selection of business ventures. In addition, regional development is attractive because of the potential tax revenues generated. Most business and commercial activity has occurred within or in close proximity to the Town of Warsaw. The Comprehensive Plan notes that development should continue primarily within the Town of Warsaw, and locations that have been designated for business and commercial growth that fall within the recently annexed areas, such as the Commerce Park. Limited business and commercial opportunities also exist in several village and rural areas. The Town of Warsaw is currently in the process of producing a town revitalization plan.

Community Recreation

The County recognizes the need for additional public recreational facilities. The Richmond County Board of Supervisors purchased 85 acres of land adjoining the Commerce Park for development of a multi-function community park that would support the County Fair and construction of sporting fields. This land has been annexed by the Town of Warsaw. Development plans for this land can be found in the Town of Warsaw Comprehensive Plan. The community of greatest population within the County is the Town of Warsaw. The National Wildlife Refuge also provides limited recreational opportunities for the public.

Conserved Areas

(See Part III Maps Pg. 19)

Conserving open land is an important component in the County's strategy to meet goals that focus on maintaining rural character, supporting the viability of the rural economies of farming and forestry, and the protection of water quality. The voluntary protection of land and open space can be accomplished in a number of ways with the transfer of some component of usage rights through a legally enforceable agreement, often called an easement, one of the most common. Fee simple purchase is also an important and popular way to preserve land. Examples of each can be found in Richmond County. Currently, 9,873 acres (8.1% of the County's total land area) are protected. 5,833 acres are held in ownership by the U.S. Fish and Wildlife Service and are collectively known as the Rappahannock River Valley National Wildlife Refuge. 3,990 acres are held in private conservation easements.

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Enterprise Zone

Virginia's Enterprise Zone program was established in 1982 by the General Assembly as a partnership to stimulate job creation and private, real-property investment. Approximately 11,000 acres in the Northern Neck have been designated as the Northern Neck Regional Enterprise Zone. Many properties within the Town of Warsaw, currently zoned for business and industrial uses, are within the State enterprise zone. Specific information on Virginia's program can be found by following the link:

http://www.dhcd.virginia.gov/CommunityDevelopmentRevitalization/Virginia_Enterprise_Zones.htm

Richmond County incentives within the enterprise zone include:

- Match grants within the Town of Warsaw to improve building façade
- County and Town investment in water and sewer upgrades within the zone
- Ten-year decreasing tax exemption of the assessed value of rehabilitated properties
- Three-year 50% tax credit on the assessed value of new construction for projects of greater than \$100,000

The local governing body of any city or county can make written application for zoning designation during periodic zone designation competitions that are governed by the State that may consist of up to three noncontiguous areas.

Historic

The Historic and Scenic Preservation Overlay District in the Zoning Ordinance has been established to provide for the protection and enhancement of significant scenic byways and to protect against the destruction of, or encroachment upon, historic areas, archaeological sites, buildings, monuments or other features. The Historic designation recognizes buildings and structures of architectural significance that contribute or will contribute to the cultural, social, economic, political or architectural heritage of Richmond County.

Industrial/Manufacturing

The Industrial/Manufacturing land classification was established to encourage this type of development being built in designated areas. Industrial/manufacturing development will provide job opportunities and support community functions by generating tax revenues. Like commercial development, most industrial use has occurred within and adjacent to the Town of Warsaw. The Comprehensive Plan recognizes that this trend will continue due to the infrastructure already in place and access to major transportation corridors. The County currently has a zoned Commerce Park located near major highway corridors (VSH-3 & US-360), and the recently constructed VSH-3 improvement road within the Town of Warsaw. The Commerce Park consists of fifty-seven (57) acres, and is located near other industrial/manufacturing sites such as Wood Preservers and Northern Neck Lumber. The County envisions that this area will be the primary location for industrial/manufacturing development. Water and sewer lines have been extended into this area. Bay Transit, a provider of public transportation, has constructed maintenance and garaging facility for its fleet of vans. In addition, industrial development may occur in existing villages and any new villages. Land use devoted to industrial activities located in the more rural areas of Richmond County, however, may be permitted if properly buffered and sensitively sited.

Marine-Service Areas

Water-related endeavors are a mainstay of commercial and recreational activity in Richmond County. As more people seek to utilize the Rappahannock River and its tributaries, a greater need arises to provide supplies, fuel, bait, repairs and other services, including convenient boat launching facilities with parking for vehicles and boat trailers. To provide these services, convenient locations, known as Marine-Service Areas, have been designated at the mouth of three major creeks that join the Rappahannock River. The Marine-Services Area designation does not preclude the development of full service marinas elsewhere; it simply indicates ideal areas where these facilities could be located.

Natural Corridors

Natural Corridors indicate unique tributaries that are abundantly rich in diverse plant and animal life. Growth and development in areas adjacent to these corridors may adversely impact the sensitive ecosystems found there. The Chesapeake Bay Preservation Act Regulations governing development in Resource Protection Areas (RPAs) provides a certain level of protection, but ultimately may not be sufficient to adequately protect these natural corridors. Permitted water-dependent facilities and fragmentation of the upland habitat by residential subdivisions will impact these natural corridors negatively. Consideration of voluntary forestal districts and conservation easements by property owners along these corridors could afford much needed protection to these areas. Also, *major* residential subdivision (as defined by the Zoning Ordinance) or development proposed along these natural corridors should be required to provide, in the plan development process, a water quality impact assessment that addresses any potential degradation to the natural corridor. The major water quality impact assessment should be based, not only on proposed improvements provided by the developer such as roads, community pier, stormwater management facilities, etc., but also take into account, as well, those impervious structures such as driveways, residential buildings, community facilities, etc. that will be constructed in the future. Four areas, Cat Point Creek, Totuskey Creek, Farnham Creek, and Lancaster Creek, have currently been identified as natural corridors.

Cat Point Creek is nationally recognized as having a pristine and unique aquatic habitat. The land along both shores of the creek, and in particular the wetlands, support a dynamic and diverse ecosystem. The Commonwealth of Virginia's Division of Soil and Water Conservation has assigned Cat Point Creek a high priority for its efforts to protect against non-point source pollution. The natural and historic significance of Cat Point Creek may not be equaled anywhere in Virginia.

The second natural corridor is Totuskey Creek including both the main body of Totuskey Creek and Little Totuskey Creek. The Totuskey natural corridor shares many of the same traits as Cat Point Creek. Recent residential development, including sixteen condominiums with pier and boat dockage, has occurred along the shores of Totuskey Creek, illustrating the trend of expanding waterfront development in the County. In addition, a major subdivision has already been approved in the Totuskey basin. Additional boat traffic has been observed in recent years, and a continued increase in use may have potentially negative impacts on water quality and wildlife habitat.

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The third designated natural corridor is the main body of Farnham Creek. Even though a relatively densely populated area (Wilna Point – “Little Florida”) is located at the mouth of Farnham Creek, the majority of the creek’s shoreline remains undeveloped and shares many of the same pristine characteristics as Cat Point and Totuskey Creeks. Little Florida is subject to severe storm damage due to its location. Frequent overwash and flooding have caused extensive damage to existing residences, requiring some homeowners to elevate their homes on pilings for protection. This area is currently served by individual onsite sewage systems that cease to properly function when flooding occurs, contributing to degradation of the natural corridor and pointing out the critical need for a central sewerage system.

The fourth natural corridor is the main body of Lancaster Creek, stretching from the Simonson area northeast to include the body of water known as Chinn’s Millpond. Lancaster Creek is similar to Farnham Creek in that it contains a relatively densely populated area (Simonson and “Pearson’s Island”) at its mouth. This is another low-lying area that is in critical need of central sewerage. Lancaster Creek is also unique because it forms the boundary between Richmond and Lancaster Counties. Aside from the development at its mouth, the Richmond County side of Lancaster Creek has maintained a relatively undeveloped and pristine shoreline, especially along its upper reaches, which are surrounded by a large area of actively managed forest lands.

The Natural Corridor areas cover much the same landmass as the Resource Protection Areas. The overlap of these two designations underscores the environmental importance placed by the County on protection of these areas. Development should be limited in these areas. This natural resource provides amenities for recreation and eco-tourism. While natural corridors may be desirable for waterfront development, steep slopes present an obstacle. Development in these areas is severely limited, not only for the creation of lots, but for the long-term maintenance of lots if developed.

All four creeks are truly unique tributaries because of the diverse plant and animal life found along the waterways and the surrounding shorelines. The lack of concentrated development near these creeks has allowed the natural systems to be maintained and enjoyed by all citizens of Richmond County and the Commonwealth of Virginia. For development purposes, this classification gives the County the right and justification to closely review the impact and character of development plans or reject requests for intense development for these areas.

Potential Reservoirs

An adequate supply of safe drinking water is a critical and basic need that must be addressed when considering future land use. Richmond County depends wholly on groundwater as its sole source of potable water. However, this most important resource is not without limit and thought must be given to providing safe and sufficient drinking water for future generations.

Increasing demands and withdrawals may present the necessity for developing alternative water supplies. The greatest threat to our groundwater supply comes from outside the County (and Northern Neck) where expanding growth and development are withdrawing increasing amounts of groundwater. Richmond County should give careful consideration to future construction of surface water impoundments (reservoirs) as a way of insuring that adequate drinking water is available to meet its future needs when groundwater is no longer able to meet the demand.

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Several potential surface reservoir sites have been identified that may serve as County or regional water sources. The County recognizes the 1973 “Water Quality Management Plan” in its identification of possible reservoir sites and their potential for development. The inclusion of the potential reservoir sites in the Comprehensive Plan assures that future land uses in and adjacent to the sites will be evaluated. For example, intensive development proposed for lands near potential sites will be determined on a case-by-case basis. Current groundwater levels are satisfactory, and widespread protection of all six (6) possible reservoir sites would not be feasible. However, at the time of this revision, five of the six potential reservoir sites have now been impacted by development. Further evaluation of the remaining site as well as potential new sites should be considered in order to preserve the viability of surface water impoundment as a way of meeting the County's future water needs. Once identified, the County should take additional measures to protect the watersheds of the highest priority sites. The cost of purchasing land and constructing a water supply facility is monumental. The Comprehensive Plan, however, also realizes that the citizens of Richmond County deserve, require, and demand a safe and adequate water supply.

Public-Use Areas

Public-use areas that provide access to the waters and natural areas of the County are important to residents for boating, fishing, hunting, hiking, and other recreational activities. The Public-use areas identified on the map include existing and proposed points of public access. Most of the public-use designation now in place has been reserved for waterfront areas because more of the traditional water-access locations will be removed from public use as more development occurs. Proposed areas may need to be purchased or protected through conservation easements or similar strategies. The County should partner with the Rappahannock River Valley National Wildlife Refuge (RRVNR) to ensure that refuge lands will be made available for public use.

Residential

There are basically two areas that will be concentrated on for residential development. The first area includes lands along the secondary highways near US-360, east of Warsaw. Residential development has already occurred along these roads and should be the location of continued residential development. The second area of concentrated development should be within or adjacent to the Town of Warsaw. Development within the Town of Warsaw should be an expansion of existing residential characteristics and densities in and around the town. Both of these general areas have the following characteristics: little or no limitations to the widespread provision of onsite sewage systems or public water and sewer; minimal, if any, impact on the Resource Management Area provisions of the Chesapeake Bay Preservation Act; absence of highly erodible soils and steep slopes; adjacency to existing residential development; and proximity to the main transportation routes. A 2010 expansion of the Warsaw Sewage Treatment Plant should provide additional capacity for growth in these areas.

Limited residential development is recommended in areas adjacent to the shorelines of the Rappahannock River and its tributaries. Development in these areas should be in scattered clusters because of the sensitive environment and the development regulations that are imposed through the Chesapeake Bay Preservation Act and the County's Subdivision and Zoning Ordinances. Shoreline areas have the following restrictive traits: significant limitations from the Resource Protection Area provisions of the Chesapeake Bay Preservation Act; slight constraints

resulting from highly erodible soils and steep slopes; notable considerations in relation to floodplains and shoreline erosion potential; and long distances from major supporting commercial development in and around the Town of Warsaw. Development along the shoreline must be compatible with the natural resources found there. In some instances, past development along the shoreline has occurred in areas not well suited for development. Two examples of this type of development in poorly suited areas are Wilna Point (Little Florida) and Pearson's Island. If future development of these areas is allowed, strong consideration should be given to requiring central sewage and water as a way to protect the environment and these valuable natural resources.

Residential, Low- and Medium-Density

The need for affordable housing in low- and medium-density development continues to be a dominant factor driving residential development in Richmond County. Future residential development in low- and medium-density areas should have adequate public service, which includes the provision of emergency services such as police, rescue, and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forests, playgrounds, recreational facilities, and other public requirements. To enhance the quality of family life in residential (low- and medium-density) areas, disturbing noises, increased traffic, the hazard of moving and parked vehicles, and interference with quiet and open spaces for child-play should be minimized.

Residential, High-Density

High-density residential development can provide affordable housing opportunities for all income levels. Apartment, townhouse, and condominium projects are all high-density residential developments. The Town of Warsaw provides for potential areas of high-density development since infrastructure needs can be supplied in an efficient manner. There is also opportunity to provide limited high-density residential growth pockets throughout the rural areas of Richmond County. When high-density residential development is proposed in the rural areas of the County, care should be taken to ensure that adequate water and sewer facilities are provided by the developer, and that the rural atmosphere of the area is not adversely altered. Small-scale high-density residential development may be appropriate in a farmstead setting, provided the look and feel of a rural farmstead is not disrupted. Rural villages should be encouraged and utilized for high-density residential use, and new villages could be created that include high-density residential uses. Adequate facilities and measures to enhance the quality of family life mentioned in the low- and medium-density residential section of this plan are also expected in the high-density residential areas.

Resource Protection Areas

(See Part III Maps Pg. 5)

As part of the County's effort to help prevent water quality degradation in the Chesapeake Bay, Resource Protection Areas (RPAs) have been established. Areas within the RPA consist of sensitive lands at or near the shoreline that have intrinsic water quality value due to the ecological and biological processes they perform. They may also be sensitive to outside influences that cause significant damage to the quality of state waters. In their natural condition, the lands provide for the removal, reduction, and assimilation of sediments, nutrients, and potentially harmful or toxic substances in runoff entering the Bay and its tributaries. Tidal

PART V CURRENT AND FUTURE LAND USE

wetlands, non-tidal wetlands, tidal shores, and 100-foot land buffers surrounding these lands are all components of the RPA, while all land that falls outside of the RPA is considered to be in a Resource Management Area (RMA). In 1990, Richmond County adopted the Chesapeake Bay Preservation Area Ordinance to protect these sensitive areas from the impacts of development.

Rural Villages

Rural Village areas should provide for a mixed and diverse development pattern accommodating residential, commercial, industrial, civic, and open space uses. The residential component of the village should contain both low- and medium-density, as well as high-density residential development which can utilize the services a village setting can provide. Commercial uses in a village should provide convenient shopping for residents while also creating job opportunities. Industrial development within the village should be consistent with the village setting. Public and civic uses are encouraged and if new village areas are created, then these should be part of the overall plan for the village. New village growth should include village greens, parks, and public-use areas to provide the decorum and amenities that give the villages their unique sense of place.

Warsaw Growth Area

The 1994 Comprehensive Plan Future Land Use Map identified the Warsaw Growth Area as being those lands that could be annexed by the Town of Warsaw by ordinance. Effective January 1, 1999, the Town of Warsaw annexed those portions of the designated growth area that have the greatest potential for immediate development. Richmond County recognizes those annexed areas as the best location for intense development of all types for many years to come. Richmond County, through its Comprehensive Plan seeks to direct intense growth and development to those annexed areas and away from the predominately rural parts of the County. Richmond County also recognizes those un-annexed portions of the Warsaw Growth Area as having the potential for long-term growth and development. The reader is referred to the Town of Warsaw Comprehensive Plan for additional information.

DEVELOPMENT AND POLICY PLAN

The purpose of this section is to outline policies that can assist the County in decision-making on important community factors such as land use, the environment, economic development, transportation, housing, and community services. These policies should be viewed as a guide for elected and administrative officials as they plan and carry out the duties of their offices.

Since these policies are guidelines for decision-making, they are not legally binding. County ordinances, such as the subdivision ordinance, zoning ordinance, building code, etc., are the legal tools by which development is directed and controlled. County ordinances work in conjunction with the Comprehensive Plan to ensure that future development is "coordinated, adjusted, and harmonious" with the vision stated in the comprehensive plan. By adopting the Comprehensive Plan, the Board of Supervisors will be encouraging economic growth, fiscal management, and protection of the local environment.

Chesapeake Bay Watershed

Efforts to restore the Chesapeake Bay's water quality were put to paper in 1983 and 1987 when the states of Virginia, Maryland, and Pennsylvania, as well as the District of Columbia, entered into a partnership with the Chesapeake Bay Commission and the U.S. Environmental Protection Agency (EPA) to protect and restore the Chesapeake Bay's ecosystem. In 2000, these groups reaffirmed their Chesapeake Bay Program partnership and recommitted to achieve the goals set previously. The Chesapeake 2000 Agreement established a number of specific goals with deadlines for the clean up of the Chesapeake Bay. One of these goals is to reduce nutrient and sediment pollution loading to the Chesapeake Bay and its tidal tributaries to levels lower than those imposed by the Clean Water Act, no later than 2010.

Because of the failure to reduce the nitrogen and phosphorus nutrient levels as well as the sediment levels prescribed by the partnership by 2010, and because impaired segments of the Bay remain on the states' Clean Water Act Section 303(d) lists, the EPA is now establishing a federal Total Maximum Daily Load (TMDL) for nutrients and sediment for the Chesapeake Bay and its tidal tributaries. The TMDL is expected to be final in summer of 2011 and will allocate pollution loadings of nutrients (nitrogen and phosphorus) and sediment to all jurisdictions in the Bay watershed, including New York, Pennsylvania, West Virginia, Delaware, Maryland, Virginia and the District of Columbia. These states, along with the District of Columbia have committed to have pollution control measures in place no later than 2025 that will lead to the restoration of the Chesapeake Bay.

Richmond County's location in the Chesapeake Bay Watershed will influence how land is developed, not only along rivers and creeks, but on inland properties as well. The impact that land use changes or expansions of existing infrastructure (i.e., development) will have on water quality will have to be mitigated entirely and requires more process cost to incorporate in planning and expense to bear for implementation. Residential and commercial development

PART VI DEVELOPMENT AND POLICY PLAN

practices will be required to implement new and emerging stormwater management practices. Agricultural activities will be further scrutinized and most likely impacted by nutrient management strategies.

The Chesapeake Bay Preservation Act is adopted as an element of this Comprehensive Plan.

General Policies Concerning Preservation of the Chesapeake Bay

It is the policy of Richmond County to promote and uphold the laws, policies and regulations promulgated by state and federal governments designed to enhance the quality of water entering the Chesapeake Bay through tributaries located within the County. Accordingly, Richmond County has adopted the following general policies concerning the preservation of the Chesapeake Bay and its tributary state waters. It shall be the policy of Richmond County:

- a. To protect and enhance the quality of state waters pursuant to the Chesapeake Bay Preservation Act through the administration and enforcement of applicable provisions of the Bay Act and associated regulations.
- b. To encourage and promote the protection of existing high quality state waters and restoration of all other state waters to a condition or quality that will permit all reasonable public use while supporting the propagation and growth of aquatic life.
- c. To safeguard the waters of the Commonwealth and Richmond County from pollution.
- d. To prevent an increase in pollution as well as to reduce existing pollution.
- e. To promote water resource conservation through education efforts in order to provide for the health, safety, and welfare of the present and future citizens of the Commonwealth and Richmond County.

Elements of the Chesapeake Bay Preservation Act Local Program

The Chesapeake Bay Preservation local program focuses primarily on land in those areas of the County that are most sensitive to damage or pollution as a result of improper use or accident. The program establishes broad development strategies designed to implement the above policies and to address the conditions identified in Part II of this document. These strategies are organized around the same headings used in other parts of this study.

A Shoreline Management Strategy

(1) Consider amendments to the zoning ordinance already applicable within RPAs that shall establish performance standards for the installation of water-dependent/marine related facilities. The performance standards should focus on practices that shall promote conservation of natural shorelines and serve as deterrents to shoreline erosion as well as the establishment of a woody buffer within the area of land disturbance immediate to the shoreline structure(s).

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- (2) Assist private landowners in their application to the Commonwealth of Virginia Game and Inland Fisheries Department to establish "no wake" zones, where appropriate, to prevent shoreline erosion damage.
- (3) Consider a grant proposal to: map those shorelines of the County with low wave energy in order to encourage the use of alternative and/or living shoreline erosion controls in these areas, develop cost share assistance to land owners (other incentives) to encourage use of these practices, develop education for marine contractors in the construction of alternative and/or living shorelines as erosion control structures.
- (4) Protect tidal marsh areas through enforcement of wetlands regulations. The County should establish onsite mitigation measures and an in-lieu fee system as recommended by the Virginia Marine Resources Commission (VMRC). Add wetlands to the appropriate inventory as they are delineated in detail and confirmed by the appropriate federal or state agency as part of the review process.
- (5) Support the establishment of "No Discharge" zones to prevent the discharge of waste from boats.

Developing and Using the Land within Physical Constraints

- (1) Coordinate subdivision development with VDOT and the Health Department to insure that new residential lots are established only in areas with adequate road access and with suitable plans for adequate drinking water and sewage treatment and disposal.
- (2) Through zoning and other policies, discourage the establishment of public or private service facilities and utilities, such as wastewater disposal facilities, within or near any of the flood zones where they might create a hazard if damaged during a storm.
- (3) Use the County's online GIS mapping system to define and delineate steep slopes.
- (4) Consider the addition of steep slopes to the Zoning Ordinance and delineate to use for protection of sensitive steep slopes.

Managing Development while Protecting the Potable Water Supply

- (1) Recognizing that it is the responsibility of the DEQ and Health Department to monitor the installation of withdrawals of groundwater, the County shall maintain liaison with and cooperate with these agencies to identify potential problems.
- (2) Establish criteria to define large potential groundwater users and require of them, as part of the documentation for new subdivisions and commercial places, the submission of a groundwater withdrawal plan.

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- (3) Coordinate with the Northern Neck Soil and Water Conservation District (NNSWCD) to insure the application of agricultural chemicals follow an approved nutrient management plan and/or conservation assessment as defined in the Bay Act and best management practices as appropriate.
- (4) Continue to review all proposed development plans for conformity with the Chesapeake Bay RPA/RMA regulations.
- (5) Coordinate with the Health Department to develop policy/guidance regarding the identification and requirements for proper capping and abandonment of wells.
- (6) Promote homeowner education that emphasizes the importance of soil testing, the benefits of slow release fertilizers, and integrated pest management in order to reduce nitrogen and phosphorus and other pollutant runoff.
- (7) Coordinate with NNSWCD to insure that all equine owners have an approved nutrient management plan.
- (8) Promote homeowner education regarding water conservation methods.
- (9) Amend the subdivision ordinance to restrict the installation of individual wells in new subdivisions as follows: 1) require installation of an approved public water supply to serve any proposed subdivision with 15 or more lots. 2) Subdivisions with proposed lot numbers of 5 to 14 would be required to install a central water system with a design stamped by a Professional Engineer licensed to practice in Virginia. 3) Individual wells may be used on subdivisions with less than 5 lots.

Gaining Access to Waterfront Areas while Preserving Sensitive Environmental Areas

Coordinate and cooperate with the State in use of present state-owned boat landings to ensure that the sites are well maintained and properly used in ways that will not increase pollutants entering state waters.

Recognizing and Working with Intensively Developed Areas

The Richmond County Board of Supervisors has not designated any areas within the County as an intensely developed area (IDA), i.e., an area where development is concentrated and little of the natural environment remains. It is a large county in area with a small population and a very low density of persons per square mile. Only within the corporate limits of Warsaw is there development that could be called *intensive* but this component of the Bay Act does not apply in Richmond County or the Town of Warsaw.

Because of Warsaw's potential to grow with the economy, it is possible that growth may spill over into areas of the County. In such cases, the County should have regulations and policies in order to provide for such growth within the framework of the overall County Plan. Accordingly:

PART VI DEVELOPMENT AND POLICY PLAN

- (1) This plan proposes that the County designate certain areas near the Town as potential growth areas and, within those areas, manage growth within the same careful framework that is set out herein for other parts of the County.
- (2) Within the growth areas, all development should be done in a manner consistent with the County's goals and policies to protect the Chesapeake Bay and other state waters.

Potential Land Use and Water Quality Protection Conflicts

Potential conflicts between land use and water quality quite naturally lie in those areas where the population is most concentrated or most likely to be concentrated, or where land is used for special purposes including intensive uses as well as agricultural uses. Among the specific areas more subject to potential conflicts and the possible causes of such conflict are the following:

- (1) Totuskey Creek: Storm water runoff from the Town of Warsaw and waste water discharging from a secondary treatment plant are significant potential sources. The Town has upgraded the water treatment plant to meet current state standards. Industrial activities outside the town limits, mostly wood products and fertilizer-related operations, might warrant monitoring considerations, but these facilities are on large tracts and have on-site containment.
- (2) Cat Point Creek: Storm water runoff from the Town of Warsaw, waste water discharge from the Town of Montross, and industrial activities represent the most significant conflicts in this drainage basin.
- (3) County wide: Fertilizer, herbicides, and pesticides used on agricultural lands can percolate into the water table and be carried into creeks by storm water runoff. Impacts are mitigated through the full implementation of erosion plans, nutrient management plans, and integrated pest management plans. The Northern Neck Soil and Water Conservation District, U.S. Natural Resource Conservation Service and Farm Service Agency, Virginia's Division of Soil and Water Conservation, and Cooperative Extension Service aid in the development and implementation of these plans, which are all designed to reduce the adverse impact on water quality as a result of agricultural activities.
- (4) County wide: Onsite sewage disposal systems for residential and limited commercial use, if not properly installed and maintained, can result in both contamination of ground water and, in the case of extreme failure, contaminates being carried via runoff. The County's 100% reserve drain field site provision addresses this issue by providing a repair area for use when the original system fails. The Bay Act requirement to pump septic tanks every five years is a part of the system maintenance and prevents system failure. The Health Department provides oversight and maintains records of all onsite sewage disposal system permits issued in the County. On July 1, 2009, the Virginia Department of Health began regulating the operation and maintenance of alternative onsite sewage systems. These alternative systems use advanced technology and engineering to provide a higher level of treatment allowing them to be used, in some cases, on sites that no longer support traditional "septic systems".

Major Regulatory Elements of the Preservation Act

Resource Protection Areas

Richmond County is committed, and required by law, to uphold all Resource Protection Area (RPA) regulations. These regulations provide immediate protection to all tidal wetlands along the shores of streams and to known non-tidal wetlands adjacent to tidal wetlands. As a practical matter, the protected areas extend along all of the major and minor creeks and branches that run throughout the County. This protection area includes a buffer area around all previously defined wetlands, which acts as a vegetative *strainer* to pollutants that may otherwise be carried to streams and wetlands by surface runoff waters. Overall, the RPA area plus the buffer accounts for approximately 11% of the County's land area.

Resource Management Area Regulations

Resource Management Area regulations were also established with the 1983 Chesapeake Bay program compliance reviews. The Richmond County Board of Supervisors determined that all remaining area of the County not in the RPA would fall under the Resource Management Area (RMA). The strategy in the RMA is to allow development, but under a set of performance standards that are designed to reduce the quantity of potential pollutants that reach the RPAs and ultimately the Bay.

County-wide Land Use Policies

Policies are proposed to upgrade, over a period of time, specific point sources that either contribute or could contribute to further degradations of the Chesapeake Bay. While the details of these policies would be defined by an operating document, the broad general policies should be along the following lines:

- (1) Public and private sewage treatment plants shall be located, constructed, and operated in a manner so as to insure against possible contamination of the Bay through operational error or natural disaster.
- (2) Solid waste disposal, public or private, shall comply with all state and local requirements.
- (3) Underground tanks used for storage of chemicals or petroleum products shall be monitored according to state requirements. Replacement of defective tanks with approved materials shall be done within a reasonable time.
- (4) Land development in areas that are sensitive to erosion and land developed along shorelines or in any other environmentally sensitive area will be monitored carefully through the administration of site plan review and enforcement of RPA/RMA regulations.
- (5) Land development for subdivisions should be encouraged to be designed using innovative land development techniques, which promote the preservation goals of this plan. Examples are cluster subdivisions, planned unit development, and related design types.

Implementation Guidance for the Chesapeake Bay Preservation Act

The following steps are suggested as a framework for implementing the goals and strategies of this plan:

Legislative and Policy

- (1) Adoption of this Act as an element of the Comprehensive Plan.
- (2) Board of Supervisor regular review of zoning and ordinances to support the implementation of the Bay Act
- (3) Adoption of amendments to the Richmond County Zoning Ordinance and other development ordinances in order to incorporate the concepts of this plan into appropriate land use legislation.

Administrative

- (1) Continue to use the County's GIS system as the appropriate database for monitoring applications, special permits, and zoning ordinance changes. Support upgrades to the system including ecologically important areas, steep slopes, and updated flood plain information.
- (2) Continuing to work with the State and identify opportunities where they can lead in administering any areas of this plan where they have established resources for such administration.
- (3) Coordinate with the Northern Neck Soil and Water Conservation District regarding the monitoring of land applied agricultural chemicals and enforce Best Management Practices as appropriate.
- (4) Continue to support and enforce the Chesapeake Bay Act Regulations.

Coordination

- (1) Work with the Department of Conservation and Recreation (DCR) to monitor and enforce compliance with the Bay Act.
- (2) Cooperate with the Department of Environmental Quality and State Health Department in the enforcement of regulations that apply to wells and other withdrawals from groundwater sources.
- (3) Coordinate and cooperate with the Virginia Marine Resources Commission (VMRC) and the Department of Game and Inland Fisheries (DGIF) in use of present state-owned boat landings.

Development

- (1) Continue to administer regulations in the Resource Protection Areas and Resource Management Areas designed to prevent destruction of wetlands and to enhance their value by filtering runoff through buffers and managing development within the Resource Management Area to minimize run-off from land use.
- (2) Continue to review all proposed development plans for conformity with Chesapeake Bay RPA/RMA regulations and Best Management Practices including new stormwater management regulations.

Planning

- (1) Continue to develop planning strategies designed to promote the protection of tidal marsh areas including the establishment of an in-lieu fee system for loss of tidal wetlands resulting from shoreline protection structures.
- (2) Prepare draft amendments to the Richmond County Zoning Ordinance and other development ordinances in order to incorporate the concepts of this plan into appropriate land use legislation.
- (3) Review and update the Comprehensive Plan, including this component, at regular intervals not to exceed five years.

Regulatory Tools for Comprehensive Plan Implementation

Zoning

On January 27, 1926 the Supreme Court of the United States heard the Case 272 U.S. 365 (1926), more commonly Euclid v. Ambler. It was the first significant and landmark case regarding the relatively new practice of zoning. At the time of Euclid, zoning was a relatively new concept, and indeed there had been rumblings that it was an unreasonable intrusion into property rights for a government to restrict how an owner might use property. The court, in finding that there was valid government interest in maintaining the character of a neighborhood and in regulating where certain land uses should occur, allowed for the subsequent explosion in zoning ordinances across the country. Less than two years later, the Supreme Court decided Nectow v. City of Cambridge. In Nectow, the Court overturned a zoning ordinance for violating the 14th Amendment due process clause. Together, the Village of Euclid and Nectow cases formed the basis of Supreme Court authority on zoning law. <http://en.wikipedia.org>

Early zoning laws risked being declared unconstitutional because it had the potential to limit property rights. To safeguard against that outcome, the drafters required the actual regulations to be based on a logical and “comprehensive plan” for the betterment of the whole community – to provide the means to connect the circumstances and the locality to the zoning law.

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The comprehensive plan is insurance that the ordinance bears a “reasonable relation between the end sought to be achieved by the regulation and the means used to achieve that end.”

The power of a locality to regulate the use of land through zoning and other regulations arises from the locality’s police power in order to protect the *public* health, safety and welfare. This principle was adopted by the Virginia Supreme Court in 1926, when it said that the “legislature may, in the exercise of the police power, restrict personal and property rights in the interest of public health, public safety, and for the promotion of the general welfare.” (*Gorieb v. Fox*, 145Va. 554(1926)),

§15.2-2200 of the Code of Virginia states the purpose of zoning as follows: to encourage localities to improve the public health, safety, convenience and welfare of its citizens and to plan for future development of communities to the end that transportation systems be carefully planned; that new community centers be developed with adequate highway, utility, health, educational, and recreational facilities; that the need for mineral resources and the needs of agriculture, industry, and business be recognized in future growth; that residential areas be provided with healthy surroundings for family life; that agricultural and forestal land be preserved; and that the growth of the community be consonant with the efficient and economical use of public funds.

§15.2-2283 states:

To this end, ordinances shall be designed to give reasonable consideration to each of the following purposes where applicable:

- (i.) to provide for adequate light, air, convenience of access, and safety from fire, flood, crime, and other dangers;
- (ii.) to reduce or prevent congestion in the public streets;
- (iii.) to facilitate the creation of a convenient, attractive and harmonious community;
- (iv.) to facilitate the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewage, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements;
- (v.) to protect against destruction of or encroachment upon historic areas;
- (vi.) to protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air, danger and congestion in travel and transportation, or loss of life, health, or property from fire, flood, panic, or other dangers;
- (vii.) to encourage economic development activities that provide desirable employment and enlarge the tax base;

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(viii.) to provide for the preservation of agricultural and forestal lands and other lands of significance for the protection of the natural environment;

(ix.) to protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities

(x.) to promote the creation and preservation of affordable housing suitable for meeting the current and future needs of the locality as well as a reasonable proportion of the current and future needs of the planning district within which the locality is situated; and

(xi.) to provide reasonable protection against encroachment upon military bases, military installations, and military airports and their adjacent safety areas, excluding armories operated by the Virginia National Guard. Such ordinance may also include reasonable provisions, not inconsistent with applicable state water quality standards, to protect surface water and ground water as defined in § 62.1-255.

§15.2-2280 states:

The governing body of any county or municipality may, by ordinance, classify the territory under its jurisdiction or any substantial portion thereof into districts of such number, shape, and size as it may deem best suited and in each district it may regulate, restrict, permit, prohibit, and determine the following:

- (1) The use of the land, buildings, structures, and other premises for agricultural, business, industrial, residential, flood plain, and other specific uses;
- (2) The size, height, area, bulk, location, erection, construction, reconstruction, alteration, repair, maintenance, razing, or removal of structures;
- (3) The areas and dimensions of land, water, and air space to be occupied by building, structures and uses, and of courts, yards, and other open spaces to be left unoccupied by uses and structures, including variations in the sizes of lots based on whether a public or community water supply or sewer system is available and used;
- (4) The excavation or mining of soil or other natural resources.

For the purpose of zoning, the governing body of a county shall have jurisdiction over all the unincorporated territory in the county and the governing body of a municipality shall have jurisdiction over the incorporated area of the municipality.

To be effective, a zoning ordinance must be formulated with proper consideration of the adopted comprehensive plan, existing land use, the suitability of land for the various types of development, the trends of growth and change in the community, the present and future needs of the community, the conservation of natural resources, the conservation of properties and their values, and encouragement of the most appropriate uses throughout the locality. An adopted zoning ordinance will help to create and maintain a convenient,

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attractive and harmonious community only with proper administration and enforcement. The best-written ordinance will not produce the desired results if not administered in a fair and equitable manner.

Zoning should be viewed as a tool for implementation of the goals and objectives of the comprehensive plan. A zoning ordinance is and should be subject to change as an area grows and develops. Proper amendments are necessary to maintain the viability of a good working ordinance. Any amendment should be based on stated policies to be found in the comprehensive plan.

A zoning ordinance is generally viewed as the most important of the land use regulatory tools. While a subdivision ordinance may determine how a property is divided within a jurisdiction, it is the zoning ordinance that determines the size, shape and use of these divisions of land. It is of utmost importance to have all land use regulations function in a coordinated manner to ensure development occurs in accordance with the comprehensive plan of the locality. Zoning will continue to dominate the land use regulation arsenal of Richmond County.

It is recommended that a study be undertaken to determine the feasibility and need for creating a rural agricultural limited zoning district or modify current agricultural zoning to provide for conservation. Such an action could be designed as a voluntary but by-right option that prescribes open space preservation by allowing compact cluster development designs that increase lot numbers by reducing lot size requirements. Such a concept should be attractive to both the developer and conservationist. It would also support the County's and citizens clearly stated desire to preserve the rural character of the County along with farming and forestry.

Subdivision Ordinance

Richmond County's Subdivision Ordinance was first adopted in 1974 and was amended in 1980, 1984, 1989, and 1991. The subdivision ordinance provides for the orderly development of an area by regulating the establishment of lots, the laying out of streets, the provision of utilities, and other aspects of the process by which land is subdivided. The manner in which the land is subdivided must be approved by the local government before the subdivision can be officially recorded and before lots can be sold. A subdivision ordinance should provide for the coordination of new streets and lots with existing and proposed development to insure well-designed, orderly neighborhoods. Where new streets are required to serve a subdivision, it shall be the responsibility of the developer to provide such streets and the responsibility of the county to require adequate bonding to ensure completion and maintenance of the streets until such time that the Virginia Department of Transportation assumes maintenance responsibility.

It is recommended that the County require the establishment of a Home Owners Association Road Maintenance Fund for any subdivision in which the Board of Supervisors approves the creation of private roads. It is also recommended that the County amend the Subdivision Ordinance to require all utilities, including onsite sewage

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systems and water supplies, that serve two or more residences, to be placed on commonly owned land under the perpetual maintenance and management of a legal entity, such as a Homeowners Association. Multiple conveyance and distribution lines shall be installed at one time by the developer and run from each lot to the utility or system. At the time of installation, individual conveyance lines shall be identified and permanently marked at regular intervals to clearly indicate the lot of origin.

The Richmond County Subdivision Ordinance was revised in 1989 to accommodate the provisions found in the Chesapeake Bay Preservation Act. It should now be amended to include those provisions cited by the Phase III Program Review conducted by the Chesapeake Bay Local Assistance division of the Virginia Department of Conservation and Recreation in 2009 and 2010 as necessary to bring Richmond County into full compliance with the Chesapeake Bay Preservation Act.

It is recommended that the Subdivision Ordinance be reviewed, and maps of subdivision patterns created by-right and through rezoning be studied, to determine if growth is occurring in an orderly and harmonious way that benefits the residents of the County. Criteria should include: provision of public safety taking into account access to fire and emergency medical services and major transportation networks; provision of affordable housing; provision of access to conveniences and public facilities such as schools; and the efficient use and investment of public funds.

Capital Improvements Program

The local Planning Commission may, under the direction of the governing body, prepare and annually revise a capital improvements program based on the comprehensive plan. The capital improvements program plans for future capital expenditures for the provision of public facilities. Such facilities greatly affect the development pattern within the community. The capital improvements program plans for the provision of schools, parks, utilities, and other facilities as they are needed. The program is generally prepared to plan for both short and long term goals and is updated annually to show progress toward achievement of its goals. The capital improvements program projects future needs, plans for stages of development, sets priorities, and estimates fiscal requirements. It is recommended that the County adopt and implement this program (see Goal #8). It is recommended that the Board of Supervisors prepare a Capital Improvements Program projecting for the needs of a potential reservoir site.

Taxation Policies

A law which has been adopted by the General Assembly authorizes counties to adopt a land use taxation system in which certain lands used for agricultural, horticultural, forestry, or open space and recreation purposes are taxed on their present use value rather than full market, or potential value. Ideally, those employed in such activities could receive a tax reduction to encourage them to maintain the land in its present use rather than being virtually forced to sell tracts of land for more intense development due to rising taxes and the temptation of the sales price. The law also requires a "roll back" tax

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payment as a penalty when the land use is changed to an unauthorized use before the legal time limit has elapsed.

Richmond County adopted Land Use Value Taxation in 1989. This program should be continually monitored to ensure it is providing a viable means of protecting agricultural land, open space, and forestland.

It is recommended that a study be conducted as to whether adoption of voluntary Agricultural and Forestal Districts be considered as an alternative method to implement the land use assessment taxation program.

Land Use Site Assessment

Richmond County should continue its online GIS mapping system to include those details that should be considered for land uses in general for the purposes of maintaining or creating Zoning Districts as well as for change in land use, i.e., development.

The County should collaborate with the Northern Neck Planning District Commission, Northern Neck Soil and Water Conservation District, Natural Resource Conservation Services, Farm Service Agency, U.S. Department of Game and Inland Fisheries, Virginia Natural Heritage Program, Virginia Department of Historic Resources, and other federal, state or local agencies recognized as subject experts, in order to add to the evaluation tools for appropriateness of site development.

In addition, it is recommended that checklists for development, based upon these physical, cultural, and historic features of the land, as established by the above organizations, be developed for County staff, Planning Commission, Board of Supervisors, and potential developers. Such checklists in combination with the Future Land Use Plan and/or Map of Richmond County will serve as aids in local decision-making.

One of the important issues raised during the public workshops and touched on in the comprehensive plan introduction is the importance of private property rights. Future land use decisions along with strategic planning should always consider and attempt to minimize impacts that may adversely affect landowners. When, for the good of the County and its citizens, it becomes necessary to take an action that may be considered adverse to any citizen or group of citizens, great effort must be taken by the County to notify and receive comment from such affected citizens.

Furthermore, it must be demonstrated that the benefit to the County and its citizens clearly outweighs the objections of the affected landowners. Care must be taken to not deprive landowners of all economically viable use of their property. Historically, case law supports zoning decisions that have been made reasonably and where those decisions do not deny all economically viable use of an entire parcel. Land use decisions made by Boards of Supervisors are considered to be legislative acts and are therefore, valid.

Land Evaluation Site Assessment

A Land Evaluation Site Assessment program (LESA) program can provide analysis of specific property to determine the potential best-suited use of the property. The Land Evaluation (LE) rates the quality of soil for agricultural use incorporating four existing U.S. Department of Agriculture (USDA) rating systems: land capability classification, important farmlands classification, soil productivity, and soil potential. Site Assessment (SA) then involves the weighing of a number of attributes including: agricultural land use, agricultural viability factors, land-use regulations and tax concessions, options to the proposed new use, impact of the proposed use on agriculture, compatibility with local plans, and existing urban infrastructure. A LESA program can numerically score a property in a manner that can provide an objective analysis with regard to the advisability of maintaining the property for agricultural production or allowing a change of use to accommodate more intensive development. It is realized that no numerical system can account for each and every factor important in land use matters. Rare or unique features of a parcel may be more important than either the LE or SA score; for example, preservation of unusual cultural, historic, or environmental resources could take precedence over development of any kind. A system such as LESA can, at best, be designed to incorporate routine considerations. An appropriate approach is to use the LESA as a tool within a review process that allows decision makers the flexibility to weigh all the factors, not just those that have been included in a broad-brush analysis. LESA scores should not constitute the sole basis for decisions, but they could provide decision makers with a sound body of information from which to begin their deliberations.

Historic Easements

Virginia law provides for protection against destruction of or encroachment upon historic and archeological areas. Such protection can be included in the zoning ordinance or it can exist independently in the form of a historic easement. The historic and archeological easement is a means for private owners of historic properties to preserve these properties for public enjoyment and education without giving up their ownership.

The easement should include a dedication of restrictions on future use and development of the property and place it in trust with a public or semipublic agency. The property owner, however, retains the right of continued ownership and usage as long as uses are consistent with the restrictions. There is also a provision for tax deductions. The County may wish to encourage owners of historic and archeological properties to consider their options in preserving identified historic sites and structures in the County.

Conservation Easements

A conservation easement is a legal document in which private property title is retained by the owner, with only those rights which the owner specifically agrees voluntarily to forego in the easement being transferred to the recipient of the easement. An easement is signed and recorded like other deeds and it is a covenant running with the title to the land by which the owner agrees to protect the existing character of the property.

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An easement may be given by the landowner for the purpose of preserving open space, which may be wetlands, marshlands, agricultural land, woodland, and other scenic or open spaces. A conservation easement is a flexible document and may be written to protect varied types of land depending on the desires of the owner. Entire parcels or portions of property may be entered into an easement. While conservation easements are usually designed to restrict certain types of development, the extent of the restrictions depends on the desires of the landowner. The terms of the easement are negotiated with the owner and can be drawn to accommodate the future plans of the owner.

An easement is a vehicle for protecting natural and cultural resources without losing control of a property. A landowner who gives an easement on a parcel of land is assured that the land will remain as they have known it and will be protected from the pressure of urbanization. The owner can continue with the traditional use of the land and submit it to new uses not prohibited by the easement.

Easements may provide tangible financial benefits to the landowner. A landowner's assessment for real estate tax purposes is based on the fair market value of the land, measured by the potential sale price of the land for its highest and best use. If an easement is placed on a property, its potential for development is removed and Virginia law requires that this must be recognized in assessing property for real estate taxes; in practice this takes place in future reassessments.

The gift of a qualified open space easement in perpetuity is a "charitable" deduction for federal and state income tax purposes. The value of the land is based on an appraisal that determines the value of the land before and after the easement donation. The difference in the two appraisals is the value of the easement and that amount may be deducted from state and federal income taxes. Open space easements may also result in a reduction in federal estate taxes. When the land passes to heirs, it must be assessed at a value that takes into account the development restrictions of the easement. Heirs may retain property they otherwise may have been forced to sell to pay estate taxes.

Easements may be held by non-profit corporations that have been in existence for more than five years. Many organizations currently hold easements in the Northern Neck area. Finding the appropriate organization to hold the easement is crucial to the success of the objectives driving the need for easement. Local governments can hold easements and the Richmond County Board of Supervisors, in 2009, agreed to consider, individually, co-holding easements as a means of protecting natural and cultural resources. The County should also become an active proponent of the use of conservation easements as a means of preserving valuable agricultural and forestal lands and crucial wildlife habitats. County staff should direct interested landowners to the appropriate non-profit organizations engaged in holding easements.

While regulations such as zoning may restrict development of certain lands, there are no guarantees that the zoning may not be changed by the governing body to allow development. An easement in many ways removes the political pressures associated with

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traditional land use regulations. Landowners enter into easement agreements voluntarily and the conditions of the easement are determined not through the political process, but via a negotiated agreement.

Conservation easements have been cited by some as the ultimate private property right in that the landowner determines the future use of his or her land, in perpetuity.

Fee Simple Acquisition of Real Property

A locality may acquire real property in order to conserve it for public use. The property may be of an active use classification such as parks, nature trails, shoreline access, or other uses where the public physically comes to the property in order to enjoy certain resources. A passive use classification would include properties that were to be set aside for future use and development such as sites for schools, industrial parks, government facilities, and other such uses. Of course, once these properties were developed they would no longer be classified as passive. A potential continuous passive use could be a watershed area that was purchased to surround a potential surface water reservoir. The watershed purchase would allow the governing body to control and restrict development within the watershed that may be detrimental to the water quality of the reservoir.

The governing body should carefully study and ultimately designate on the future land use map those properties to be considered for acquisition. With development pressures and the market driven rising cost of property, waterfront property in particular, one can anticipate that desirable property will become increasingly expensive. Richmond County need only look to adjoining counties to appreciate the cost of delaying purchase of properties for public use. The public, in certain localities, is being "locked out" of those areas such as waterfront property by private subdivision ownership. Once the most desirable properties are developed, local governing bodies can no longer bear the extraordinary cost of acquiring such land for public use.

Richmond County is blessed with an extremely diverse shoreline that ranges from exposed Rappahannock River frontage to narrow winding tidal and non-tidal creeks and their associated marshlands. The public has access to the water at three public boat launch sites that are designed primarily for use by and tailored to motorboats (see Part III Maps page 3). Two other primitive water access sites are open to the public but are seldom used due to lack of parking and other site improvements. A multitude of potential sites suitable for small boat access, swimming, beach/marsh trails, fishing, picnic areas, and other water related activities might now exist.

However, private development can quickly consume such areas and forever restrict public use of these lands. The County should seriously consider the purchase of a length of shoreline along the river or one of the major creeks to preserve in its natural state for enjoyment of all citizens of Richmond County. Such a site should be sought that currently is not developed or that has as little development as possible. Acquiring developed land will certainly be an expensive undertaking. If the purpose of the acquisition is to preserve natural areas, concentrated efforts should be focused on the

most pristine areas available. The County needs to designate the properties adjoining the acquired lands for a use that would be in harmony with the natural area. Commercial, dense residential, industrial, and other similar land uses should be avoided and targeted for more appropriate locations within the County.

A stretch of stream designated as a natural corridor and used as a canoe trail would certainly compliment a public nature preserve acquisition. The County would not necessarily need to purchase the entire length of shoreline along the natural corridor. The County should provide adequate facilities for launching and retrieval of small boats, parking, interpretive and other nature trails, light recreational uses, and such features that would provide the public with convenient access to diverse ecosystems within the natural corridor.

Recent population projections for the tidewater areas of Virginia indicate that the potential exists for an increase of up to two million new inhabitants by the year 2020. If the County delays purchase of suitable areas in the near term, it is possible that significant natural areas will be lost forever. The increased pressure to develop these natural areas is inevitable. The County should aggressively pursue acquisition of suitable natural areas for the enjoyment of all. Without prompt action, we may all lose a component of the desirable quality of life held so dear by the citizens of Richmond County.

When considering purchasing land for public use the County should carefully consider the benefits to its residents and the ability of the County's tax base to afford and maintain those lands. Lands purchased for economic development opportunity, environmental protection such as a reservoir site or for recreation should be a component of a Capital Improvements Program with a long-range term of procurement affixed to them.

Purchase/Transfer Development Rights Programs

Localities can proactively support land conservation by establishing a Purchase of Development Rights (PDR) program. Publicly supported PDR programs pay landowners, working farmers for example, to limit the development potential of their land through a conservation easement. With a PDR program in place, farmers can choose to cash in some of the equity in their land, without losing ownership or their ability to farm the land. This option offers farmers a financially competitive alternative to selling their land for development. Considering the potential savings in construction and maintenance of schools, roads, and other public services, these programs can save localities more than they cost.

Transfer of Development Rights (TDR) programs use a market-based approach to encourage higher density development in growth areas while reducing the development potential of rural areas. Rural areas identified for protection are designated as "sending areas" and growth areas where density is encouraged are designated as "receiving areas." Landowners in the sending areas can sell development rights to developers who plan to build in the receiving areas. Some jurisdictions establish banks for development rights

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they purchase from land owners. Developers may go either to landowners directly to ask to purchase development rights or buy them from the bank. But unless a locality decides to establish a bank for TDRs, the transactions do not require public monies.

Additional Tools

Many of the decisions made by the local government can have a great effect upon land use, even though these decisions do not seem to be directly related to issues of land development. Policies concerning the taxation of real property can have a great effect on land use and land ownership. Ordinances designed to control various kinds of nuisances can also affect land use. Ordinances that provide environmental protection, such as the Erosion and Sediment Control Ordinance, the Wetlands Zoning Ordinance, the Chesapeake Bay Preservation Area Ordinance, or Stormwater Management Regulations also have an effect upon land use. Various types of public programs and expenditures also affect the development of land. When such actions are coordinated with the Comprehensive Plan and the other implementation tools, an orderly, desirable land use pattern can result. Finally, the local governing body can seek to coordinate private decisions on local development with the plan proposals.

Conclusion

The Comprehensive Plan is for the future physical development of the territory within the locality's jurisdiction. The maps, land use policies (including the Chesapeake Bay Preservation Plan), goals, and recommendations herein should clearly paint a picture of where growth and development are to be directed, what lands and waters are most worthy of conservation or preservation due to the value the community places on their historic, economic, or cultural heritage or their roles in protecting the public health, and whether Richmond County will be a desirable community where families and businesses can flourish.