

PRESERVE THE ISLE



*Advance the protection and stewardship of natural resources
and agricultural land to enrich the economy, preserve
ecological balance, and protect scenic heritage.*



PRESERVE THE ISLE

Protection of natural resources and the County's traditional rural lifestyle ranked among the top priorities identified by the public during the *Envisioning the Isle* public forums. The community ranked preservation of the environment, protection of flood-prone and other vulnerable areas, preservation of agriculture, and preservation of rural character as among some of its top values.

These values are consistent with the County's Comprehensive Plans over the past thirty years. These provided the basis of support for the County's proactive approach to preserve both its natural and agricultural resources through its existing growth management tools and environmental protection regulations. The most prominent growth management tool is the Development Service Districts (DSDs) which

focus development and public services into three key areas in the County while preserving the remaining areas for agricultural uses. The County seeks to protect environmentally sensitive features mainly through its land development ordinances, such as the Floodplain Management Ordinance, Wetlands Ordinance, Coastal Primary Sand Dune Ordinance, and the Chesapeake Bay Preservation Area (CBPA) Ordinance.

In order to identify the most beneficial means in the future for achieving the goal of "Preserve the Isle," it is first necessary to assess existing conditions, trends and key issues that should be addressed through future actions. The County's natural resources, rural character and agricultural industry are assessed in the following sections.



FARMERS BEST BY JESSICA CASPER

COMMENTS FROM THE PUBLIC FORUMS

PUBLIC FORUM 1

WHAT ARE THE BIGGEST ISSUES FACING ISLE OF WIGHT COUNTY IN THE FUTURE?

- "Environmental issues (loss of green space, protected species, storm concerns, etc.)"
- "Allowing and encouraging business and entertainment growth while preserving the beauty and agricultural aspect of our County (keeping farming possible by not over-taxing our farm land and businesses)"

PUBLIC FORUM 2

WHERE AND HOW DO WE GROW? ALTERNATIVE SCENARIOS:

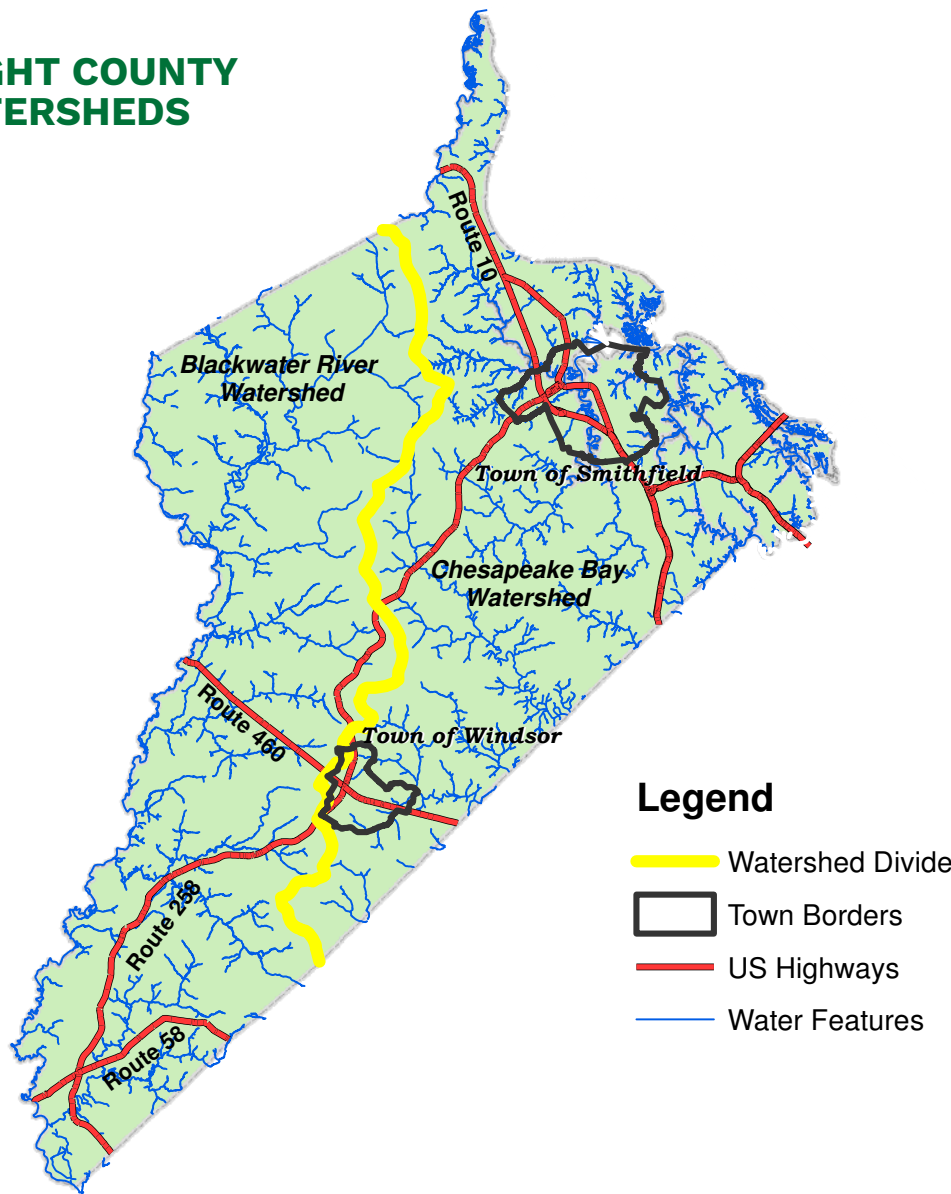
- "Isle of Wight 'roots' are agricultural in nature and this scenario bolsters this heritage."
- "More environmental protection, wetlands, wildlife, and tree preservation, is important."

PUBLIC FORUM 3

ARE THERE SPECIFIC AREAS YOU WOULD LIKE TO SHARE COMMENTS ON?

- "More Conservation/ environment protection in the areas anywhere in the County"
- "Leave the County as rural and farmer friendly as possible"

ISLE OF WIGHT COUNTY MAJOR WATERSHEDS



Legend

- Watershed Divide
- Town Borders
- US Highways
- Water Features

Natural Resources

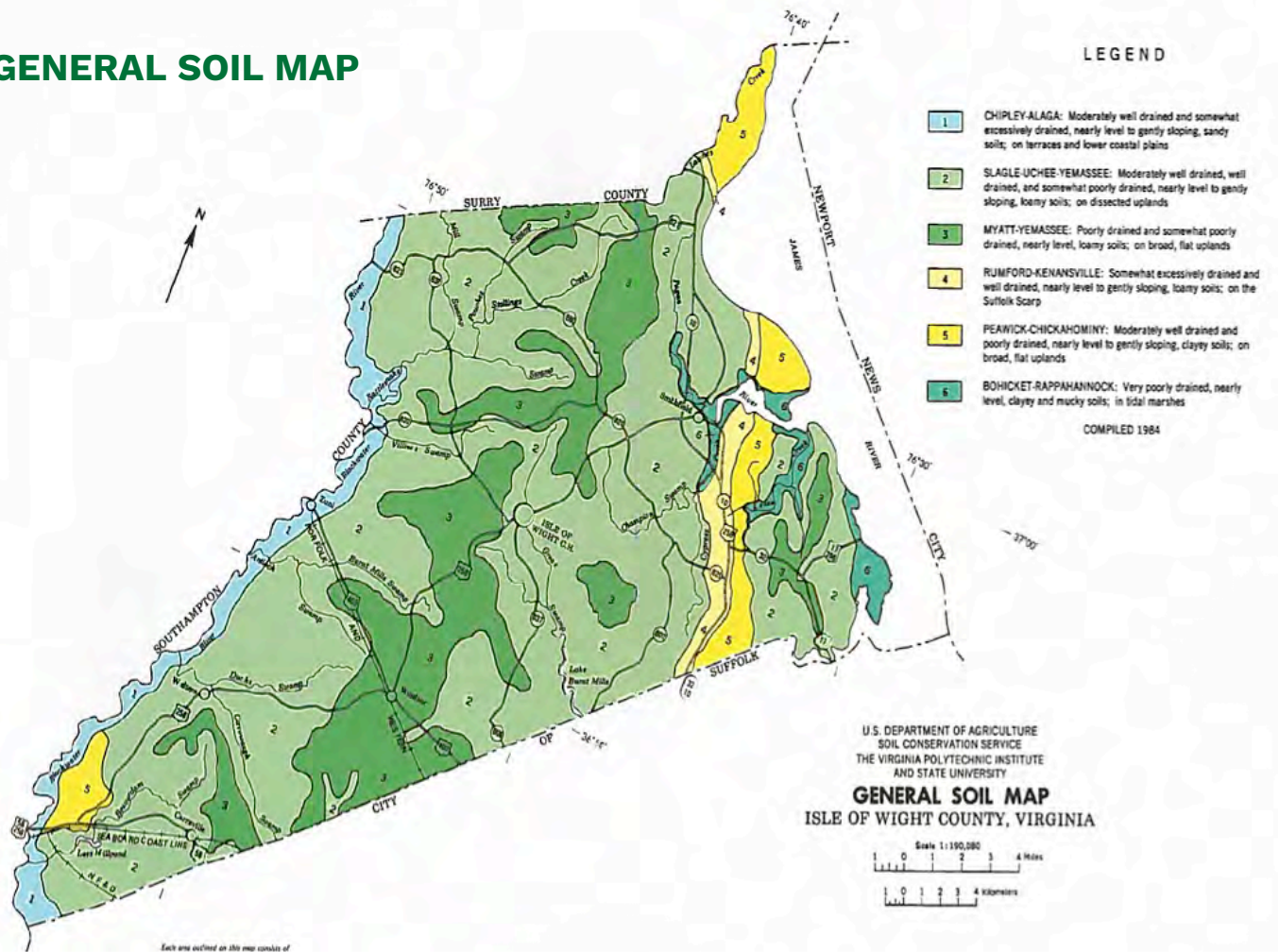
Community members cherish the County's abundant environmental features which include miles of natural shoreline, acres of tidal marsh, and scenic rural farmland. Due to its largely natural, rural character, the overall environmental health of the County is currently good:

- The Hampton Roads region, including Isle of Wight County, continues to meet the new EPA air quality standards.
- Due to its primarily undeveloped nature, there are few identified contaminated soil or groundwater sites. There is only one known Resource Conservation and Recovery Act (RCRA) program contamination cleanup site in the historical industrial area in the Camptown DSD.
- Isle of Wight is in the Eastern Virginia Groundwater Management Area where

groundwater levels are currently in a state of decline. Groundwater withdrawals of 300,000 gallons or more a day may be subject to additional permitting requirements by the Department of Environmental Quality (DEQ). More information can be found at www.deq.virginia.gov.

- The County continues to enforce federal, state, and local environmental regulations which preserve its wetlands, limit water pollution from stormwater runoff, prevent soil erosion, and prevent property loss in the County's floodplain areas.
- Surface water quality generally supports the federal water quality standards for six required uses, including: aquatic life, fish consumption, public water supplies (where applicable), recreational uses, shellfishing and wildlife.

GENERAL SOIL MAP



There are stream segments that are listed as not fully supporting these uses according to the Virginia Department of Environmental Quality 301(b) water quality reports. Causes of impairment include the presence of bacteria, excessive nutrients or heavy metals such as mercury or PCBs. No surface water segments fully support all of the designated uses.

- The State regulates and issues permits for point source discharges into waterways, air permits, solid waste/hazardous waste storage sites, and above ground and underground storage tanks. Location information for current permits can be found online at www.deq.virginia.gov.

Isle of Wight County lies within the Coastal Plain physiographic region of Virginia, which is characterized by a fairly flat, terraced landscape that slopes east toward the Atlantic Ocean. The predominant vegetation type is both pine and mixed hardwood forest frequently underlain by sandy soils. Other common soil types include deposits of terrace gravels, marine clays, silt, and limestone. The County is divided between two major watersheds including the lower James River watershed which drains to the

Chesapeake Bay, and the Blackwater River watershed which drains to the Chowan River in North Carolina.

The County’s extensive natural resources include:

- Tidal and nontidal wetlands which contribute to the total of 47 square miles of water features;
- 5,181 acres of tidal marsh;
- Extensive public and private oyster grounds in the James River, which are known as naturally productive oyster beds;
- 222 linear miles of upland tidal shoreline;
- Large interconnected networks of waterways, wetlands, woodlands, wildlife habitats, and other natural areas; and
- Mineral resources including commercially mined sand and marl used in the highway and building construction industries.

The County’s extensive inventory of natural resources is a natural attraction for further development as people seek to be part of this beautiful environment. According to the Comprehensive Coastal Resource Management Portal (CCRMP) tool managed by the Virginia Institute of Marine Science (VIMS), the

primary land uses along tidal shorelines in the County include residential, agriculture, and forestry uses. With residential development comes the desire to build piers, boat docks, and shoreline stabilization features along its coastlines to provide access to the water and protect property from erosion. Along with the increasing number of private waterfront access facilities, the County recognizes its limited supply of existing public water access facilities and the rising demand for increased public access. The County's ongoing efforts to provide additional public facilities is addressed in the "Serve the Isle" chapter of the Plan. The most current map of the County's public and private waterfront access features can be found online using CCRMP.

The same water features that so many seek to be near also pose potential hazards to property values, such as poor soils, potential flooding, vulnerability to coastal storm damage, and property erosion. As sea levels continue to rise over time, flooding hazards will remain a concern as the County continues to develop.

Development can likewise pose a threat to the natural features the community so highly prizes, if not done correctly. In the past, wetland areas were filled in to create more land for development. Natural vegetation was removed for excessive parking areas or expansive lawns. Onsite wastewater systems were installed in poor soils, allowing bacteria or nutrients to enter into groundwater and surface water. Preserving the County's native vegetative cover, respecting the capacity of its soil types, and protecting its wetland areas can help the County sustain its rural character and maintain its natural abilities to reduce runoff, filter pollutants, recharge groundwater supplies, protect water quality, provide wildlife habitat and store floodwaters.

Local soils frequently encounter high water tables, with the water levels in some soils coming to within 0.5 feet of the ground surface, making basements generally impractical. Many local soils are rated as severe in terms of suitability for septic drain fields, because the soils are subject to any number of unfavorable conditions, including wetness, ponding, flooding, slow percolation, and poor filtering characteristics. Some soils are also rated high for shrink-swell potential, meaning soils shrink when dry and swell when wet; this requires construction of enhanced foundations to mitigate for the variable nature of soil structure. More detailed information on the County's soils can be found in the *1986 Soil Survey of Isle of Wight County, Virginia* by the US Department of Agriculture.



VIEW OF BREAKWATERS AND TOMBOLO FEATURES ALONG THE SHORE OF THE JAMES RIVER IN ISLE OF WIGHT COUNTY. BREAKWATERS ARE A PREFERRED METHOD OF SHORELINE STABILIZATION.

Soils along the County's shorelines can be highly erodible, resulting in high rates of erosion from wave action or storm events, threatening adjacent properties. A recent survey of upland tidal shorelines in the County by VIMS in 2017 found that of the 222 linear miles of shoreline in the County, approximately 13 miles are defended by structural shoreline erosion control structures such as riprap, breakwaters and bulkheads.

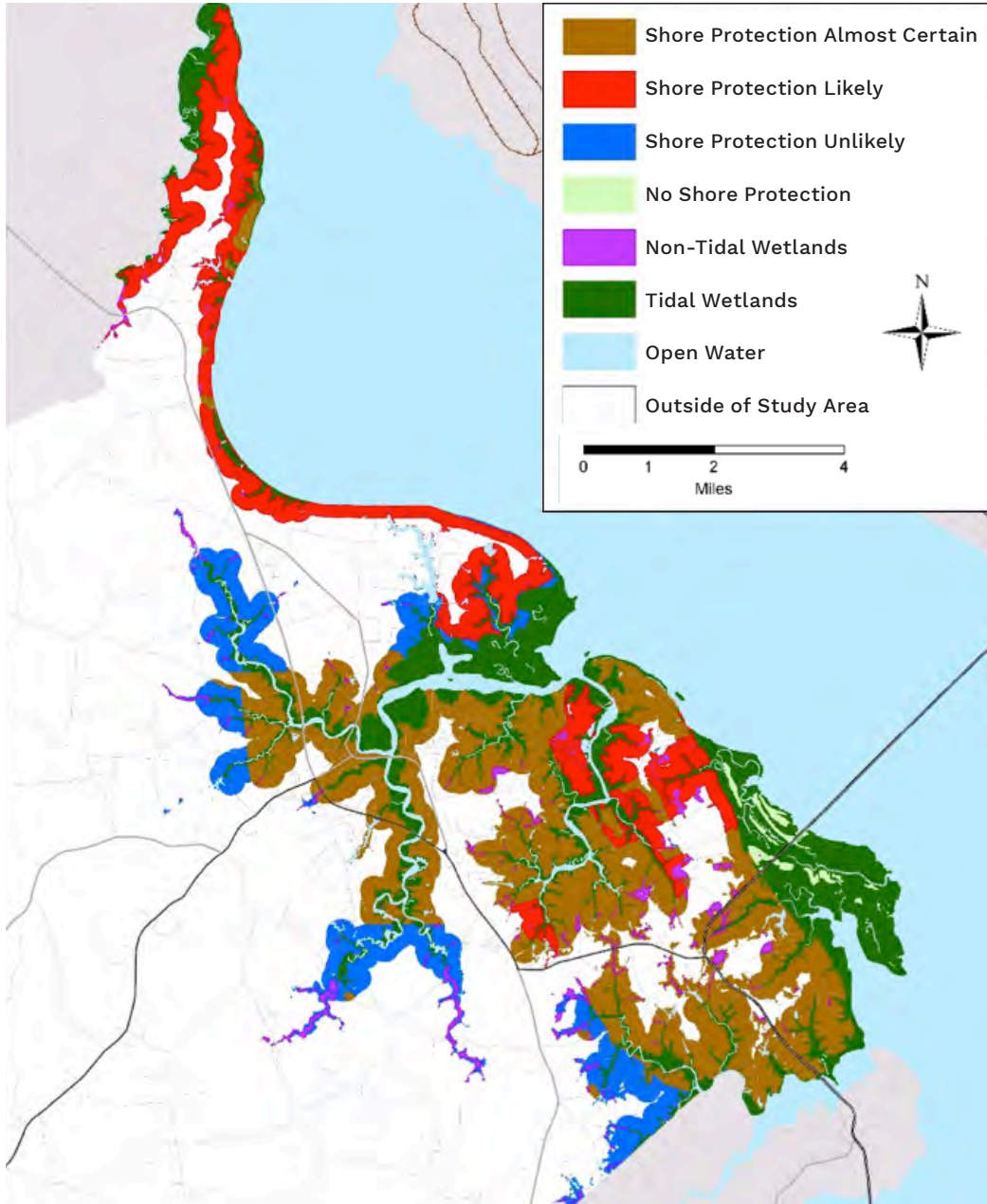
Use of riprap and bulkheads are considered the least desirable methods for defending shorelines. The Commonwealth of Virginia has recently approved a new policy that strongly favors living shorelines, or shorelines protected by marshes and low-profile rock sills, breakwaters, and similar methods. In addition to providing effective erosion control, living shorelines also filter runoff from upland areas and provide floodwater storage which protect water quality. However, living shorelines generally are not feasible for large, violent waterways such as the James River.

The Hampton Roads region, which includes Isle of Wight County, is vulnerable to flooding and sea level rise due to the combination of rising seas and subsidence (the sinking of land). These conditions have been thoroughly documented by a multitude of government agencies, including the National Aeronautics and Space Administration (NASA) in 2017. Subsidence is an issue that affects Isle of Wight County due to historic large withdrawals of groundwater by local industry.

A series of sea level rise planning maps resulted from research and projections by VIMS in 2010 on the sections of shoreline subject to sea level rise in the coming decades. The abstract for this research can be found at: <http://risingsea.net/ERL/VA.html>.

VIRGINIA SEA LEVEL RISE PLANNING MAPS

HRPDC — ISLE OF WIGHT



Areas in Isle of Wight County at risk of sea level rise between now and 2100 include the low-lying reaches of Lawnes Creek, James River, Jones Creek, Pagan River, Cypress Creek and Chuckatuck Creek, and their tributaries. The CCRMP tool can be found at http://cmap2.vims.edu/CCRMP/IsleOfWight2017/IsleOfWight_CCRMP_Viewer.html.

How the County’s landscape develops over time necessarily impacts the quality of water in its streams, rivers, and swamps. Protecting the floodplains and wetlands which act as filters for runoff and storage for stormwater can help protect water quality as well as help protect property from damage from flooding and erosion. Protection of prime farmland soils can

sustain the local agricultural economy, while limiting development on poor quality soils can preserve water quality while protecting future homeowners from unnecessary repairs and costly onsite wastewater system replacement.

The County currently protects both property values as well as its environmentally sensitive features using the following mechanisms:

- **CBPA Ordinance** which includes the development standards for sensitive areas in the Chesapeake Bay Watershed which are shown on the CBPA map included as an appendix to this Plan;

KEY FACTS AND TRENDS

- Although the area of the County within the Chesapeake Bay watershed is subject to additional land development controls, the area within the Blackwater River watershed is not.
- Although Brewers Creek and Chuckatuck Creek have water quality improvement plans approved by US Environmental Protection Agency (EPA), there are no similar studies or plans currently in place for other impaired surface water segments in the County.
- Common water quality issues in the County include high levels of bacteria, nutrients, or heavy metals, especially along the James River.
- Tide gauge readings from Sewell's Point in Norfolk recorded nearly 1.4 feet of relative sea level rise since 1927, equivalent to a change of 1.52 feet over 100 years, indicating overall sea level rise with potential inundation risks to coastal areas in the County.
- Tidal Marsh Surveys conducted by VIMS between 1981 and 2017 show a loss of approximately 197 acres of tidal marsh in the County, or 3.7% of its total marsh area, indicating a need to implement better tidal marsh and water quality protection measures in its shoreline erosion control management decisions as the population and water access facilities continue to grow.
- The County does not currently have a formalized green infrastructure network plan to preserve its large undisturbed forests, preserve scenic landscapes, provide habitat, reduce stormwater runoff, maintain air quality and moderate temperature.

- **Stormwater Management Program** which requires new development to store and treat runoff;
- **Floodplain Management Ordinance** which controls new development in the County's floodplains;
- **Wetland Ordinance** which limits development in tidal wetland areas;
- **Coastal Primary Sand Dunes Ordinance** which protects fragile shoreline features;
- **Subdivision Ordinance** which sets standards for subdivision activity in environmentally sensitive areas; and
- **Zoning Ordinance** which includes development plan criteria for areas with natural resources.

Agricultural Preservation

Since its creation in 1634, agriculture has been an essential factor in Isle of Wight County. It is said that in 1608 Captain John Smith crossed the James River for bushels of corn that were grown on Isle of Wight soil. In 2019, over 85% of the County remains in agricultural and rural land uses. Preserving our farmlands, natural areas, and cultural resources is fundamental to protecting the County's quality of life, enhancing its economy, and maintaining the character that residents and visitors so highly value.

Between 2007 and 2012, the County's agricultural community experienced an increase in the number of farms from 195 farms to 213 farms, or a 9% increase. The total land area dedicated to agriculture in the County also increased by 3%. In the same time period, the average total sales per farm increased by 81% according to the Census of Agriculture. Between

2012 and 2017, the number of farms increased again from 213 to 237, representing an 11% increase. The average total sales per farm also increased by 27%. The average farm size in 2017 was 340 acres, representing a decrease from the average farm size in 2012 of 355 acres. In comparison, the 2007 Census of Agriculture reported an average farm size of 377 acres, indicating a continuing trend of shrinking farm sizes. However, the total number of acres in farmland in Isle of Wight County continues to increase with a 7% gain in agricultural land from 75,642 acres in 2012 to 80,672 acres in 2017. The increasing number of farms and land devoted to agriculture over the last ten years demonstrates the strength of the County as an agribusiness location.

Land committed to agricultural use is a finite resource that can be threatened by development. Farmers need access to a stable, significant land base in order to thrive, but preserving land is not enough to ensure the future viability of the County's agricultural industry. Farmers also need flexibility and technical assistance to prosper in a competitive global and regional economy.

To take advantage of new opportunities, it is sometimes necessary to diversify, which can mean growing something new, growing the same thing in a new way, or adding value to what is already being grown. It may also mean inviting the public onto the property to facilitate direct sales of the farm's harvest, sometimes in conjunction with educational or entertainment activities. County farmers are engaged in agritourism, value-added processing, and direct farm marketing; however, recent trends suggest that these activities may need to broaden in scale and scope in order to continue to provide profitable income to farmers.

KEY FACTS AND TRENDS

- Agriculture and forestry remain several of the County’s top industries, due to several locational advantages including environment and supportive policies.
- Because agriculture-related businesses remain a target industry for the County, the County should consider providing a dedicated revenue stream for the PACE program to protect prime agricultural lands and rural character.
- The County has extensive rural areas with the potential for the creation of additional agricultural and forestal districts.

The County currently utilizes several tools to protect and promote its local agriculture industry, including the following:

- Rural Agricultural Conservation (RAC) Zoning District regulations which encourage farming while discouraging non-agricultural land uses that are incompatible with farm operations. This form of zoning promotes agriculture uses and structures while limiting the number of non-farm uses such as dwellings and other activities that can compete for productive farmland;
- Residential subdivision restrictions in the RAC zoning district to reduce development pressure on agricultural lands;
- Development Service Districts (DSDs) which serve as growth target areas, reserving areas outside the Districts for agricultural uses;

- Agricultural and Forestal District Program which includes four separate districts;
- Current land use taxation program to help alleviate the financial burden on farm, forestry and open space lands;
- Agritourism ordinance adopted in 2016 which provides additional opportunities to generate revenue for agricultural operations;
- Agritourism marketing program through the Tourism Department, including weekly farmer’s markets and a “Visit the Farms” direct marketing assistance program; and
- Purchase of Agricultural Conservation Easement (PACE) program which is currently unfunded.

On May 19, 2005, Board of Supervisors adopted an ordinance establishing the Purchase Agricultural Conservation Easement Program (PACE). The primary purpose of the ordinance is to promote and encourage the preservation of farmland in Isle of Wight County. Through PACE, the County acquires development rights in designated areas within the County through the purchase of agricultural land preservation easements. Landowners who meet certain eligibility criteria may sell an easement to the County while holding fee simple title to the land and continuing to farm. The County acquires development rights by executing installment purchase agreements with the landowners. To date, there are 619.08 acres enrolled in the PACE program. In 2011, the Board of Supervisors ceased funding the program due to budget constraints.

POLICIES AND ACTIONS

“Preserve the Isle” summarizes the community’s vision for preserving its natural resources and rural character while also protecting property values. The following table identifies policies and appropriate actions that will best achieve the goal. The final chapter of the Plan, “Create the Isle,” establishes timeframes and responsible parties for the implementation of each action step.

POLICY

Isle of Wight County will simultaneously protect its sensitive natural resources and property values by pursuing best development practices that respect soil capacity and protect water features, tidal and nontidal wetlands, floodplains, and coastal areas.

ACTION

- Expand public sewer service in the County’s three designated growth districts to minimize installation of on-site septic systems in the County to reduce potential groundwater and surface water pollution.
- Develop a policy requiring homeowners to connect to public sewer systems when such services become available in their neighborhoods.
- Identify ways to connect areas with failing septic to public services.
- Review existing environmental ordinances, such as the CBPA, Floodplain and Stormwater Management Ordinances, to ensure they include the best practicable protection measures.

POLICY

ACTION

The County shall maintain agriculture and rural character while enhancing its distinctive community character.

- Develop a riparian buffer protection strategy for those areas in the Blackwater River Watershed.
- Protect water quality from sedimentation and pollutants carried by runoff through the continued enforcement of the local stormwater management program.
- Work with the Virginia Department of Transportation to identify roadside ditches in need of maintenance to prevent flooding of adjacent property.
- Join the voluntary federal Community Rating System (CRS) program to improve local floodplain management and help reduce the homeowner cost of flood insurance under the National Flood Insurance Program.
- Protect shorelines by promoting the use of living shorelines wherever practicable as the preferred method of shoreline stabilization.
- Develop a green infrastructure plan.
- Use information developed for the County by VIMS found in the online CCRMP tool for shoreline best management practice recommendations for individual projects.
- Track reports and research to assess potential impacts to coastal areas due to sea level rise.

- Identify a permanent funding source for the County’s existing PACE program to retain a critical base of active farmland and to further reduce the costs of future development.
- Develop an educational program to encourage the expansion of the County’s Agricultural and Forestal Districts program to areas of prime soils.
- Review and update the County’s zoning and subdivision ordinances to ensure the protection of farmland by minimizing land use conflicts by separating agricultural lands from non-agricultural activities, and retaining a critical mass of agricultural land that promotes effective operations and the overall strength of the agricultural community.
- Discourage expansion of public utilities and other growth-inducing public facilities into agricultural areas to minimize development pressures on those areas.
- Expand economic development efforts to raise awareness of the economic impact of the local farming industry.
- Develop an expanded technical and business assistance program for County farm businesses.