SOCIO-ECONOMIC IMPACTS OF CONSERVED LAND ON VIRGINIA'S EASTERN SHORE

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1. EXECUTIVE SUMMARY

The primary objective of this report is to provide decision makers at the State of Virginia, Accomack County, and Northampton County with a high-level analysis of the fiscal and economic impacts of conserved land on the Eastern Shore of Virginia. The findings shown in this report are based on existing land-use and fiscal conditions in each county as of fiscal year end 2016. The results of this analysis provide a fiscal baseline against which any future development policy, strategy, plan, or project approval can be tested. Consequently, the fiscal baseline that is reported herein provides local government officials and others involved in the land conservation and economic development process in both Accomack and Northampton counties the starting point for asking and deriving answers to critical questions about the future of land acquisition and conservation in each county.

The findings of the economic impact analysis are summarized as follows and are shown in Table 1-1:

- Economic activity associated with organizations involved in land conservation on the Eastern Shore is estimated to be $21.88 million in 2016, adding an additional value of $8.76 million to the Eastern Shore's gross regional product;

- Economic activity associated with aquaculture industries on the Eastern Shore is estimated to be $156.7 million in 2016, adding an additional value of $114.4 million to the Eastern Shore's gross regional product;

- Economic activity associated with visitor spending in Accomack and Northampton counties is estimated to be $51.38 million in 2016, adding an additional value of $26.35 million to the Eastern Shore's gross regional product;

Table 1 - 1: Summary of Economic Impact Analysis, 2016

Description	2016 Total output	2016 Value added to Gross Regional Product
Direct Organizations	$ 21,876,000	$ 8,755,000
Aquaculture Industries	$ 156,703,000	$ 114,432,000
Visitor Spending	$ 51,375,000	$ 26,348,000

Source: Organization Data, JobsEQ, Virginia Tourism, IMPLAN, Center for Regional Analysis

The findings of the fiscal impact analysis are summarized and are presented in Table 1-2:

- Total estimated real property taxes paid to Accomack County, Virginia in 2016 from land with conservation easements is estimated to be $303,653; and

- Total estimated real property taxes paid to Northampton County, Virginia in 2016 from land with conservation easements is estimated to be $322,694.

Table 1 - 2: Real Estate Revenue – Conservation Easements
Counties of Accomack and Northampton, Virginia
2016

		2016 Estimated Real Estate Taxes	
	Description	**Accomack County**	**Northampton County**
A	From Buildings	$ 88,340.20	$ 94,334.48
	From Fair Market Value (FMV) of Land	$ 294,407.35	$ 511,970.56
B	From Use Value of Land	$ 215,312.31	$ 228,359.56
	Difference between FMV and Use Value	$ 79,095.04	$ 283,611.00
=A+B	Estimated Property Taxes Paid	$ 303,652.51	$ 322,694.04
	Estimated Property Taxes Foregone	$ (79,095.04)	$ (283,611.00)

Source - Raw Data: Accomack County, Virginia Assessor's Office; Northampton County, Virginia Commissioner of the Revenue's Office

Source - Table Construction and Analysis: The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Estimated real property taxes foregone reflects the "lost" tax revenue to each county as land with a conservation easement has a lower use-value tax assessment recorded on the books of each county. Foregone real estate tax revenues were estimated to be $79,095 in Accomack County and $283,611 in Northampton County in 2016. These foregone tax revenues are not necessarily lost, per se, as the Code of Virginia allows land owners to place conservation easements on property. Estimated property taxes foregone in Table 1-2 represents the difference in revenue between land assessed at the fair market value and land assessed at the lower use-value.

To provide a benchmark for projecting the future budgetary impacts of acquiring either fee simple or lands with conservation easements, a twenty-year fiscal forecast of revenues and expenditures from 2016-2036 was conducted for both Accomack County and Northampton County. This twenty-year fiscal forecast included all revenues collected by each county (not just real estate taxes) and all expenditures incurred by each county to provide public services to residents, businesses and their workers, visitors, and tourists to each county. The fiscal forecast for Accomack County is shown in Table 1-3 and in Table 1-4 for Northampton County.

Table 1 - 3: 20-Year Fiscal Forecast – Accomack County, Virginia

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Summary					
Total Projected Revenues	$48,917	$50,635	$52,322	$53,908	$55,348
Total Projected Expenditures	$48,567	$49,835	$51,072	$52,211	$53,165
Net Projected Surplus (Deficit)	$350	$799	$1,250	$1,697	$2,183

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Table 1 - 4: 20-Year Fiscal Forecast – Northampton County, Virginia

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Summary					
Total Projected Revenues	$29,387	$29,553	$29,700	$29,798	$29,790
Total Projected Expenditures	$28,152	$28,268	$28,364	$28,411	$28,354
Net Projected Surplus (Deficit)	$1,235	$1,285	$1,336	$1,387	$1,436

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Based on each county's current pattern of revenues generated and expenditures for the provision of public services demanded, it is estimated that both Accomack County and Northampton County will experience a modest *annual* surplus of revenues over expenditures each year over the next twenty-years. Included in this estimated annual surplus for each county is the foregone real estate tax revenues from conservation easements, conserved land, and other tax-exempt properties. Thus, the presence of land with conservation easements, conserved land that is tax-exempt, and other tax-exempt entities (such as houses of worship, federal, state, and local entities, and other non-profit and not-for-profit entities) on the land-book of each county (at their current percentage share of the total land book in each county) is not projected to reverse the estimated annual net revenue surplus to each county over the next twenty years.

Finally, the fiscal impact of conservation easements in both counties was analyzed. Real estate tax revenues, local sales and uses taxes, and hotel and motel taxes were calculated and compared against four categories of public service expenditures: general government administration; public safety; public works; and parks, recreation and culture. Local sales and uses taxes and hotel and motel taxes were included to account for spending from visitors and tourists to the Eastern Shore. The findings of this fiscal impact analysis are presented in Table 1-5.

Table 1 - 5: Net Fiscal Impact – Conservation Easements
Accomack and Northampton Counties, Virginia
Fiscal Year End 2016

Jurisdiction		Findings
Accomack County		
Revenues	$	2.38
Expenditures	$	1.00
Net Fiscal Impact	$	1.38
Northampton County		
Revenues	$	1.15
Expenditures	$	1.00
Net Fiscal Impact	$	0.15

Source: The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

For every $1.00 spent in Accomack County annually to provide public services to support land with conservation easements, revenues to Accomack County were estimated to be $2.38. In Northampton County, for every $1.00 spent annually in the provision of public services to support land with conservation easements, revenues to Northampton County were estimated to be $1.15. The findings of the fiscal impact model indicate that lands with conservation easements do not place a fiscal burden on either county.

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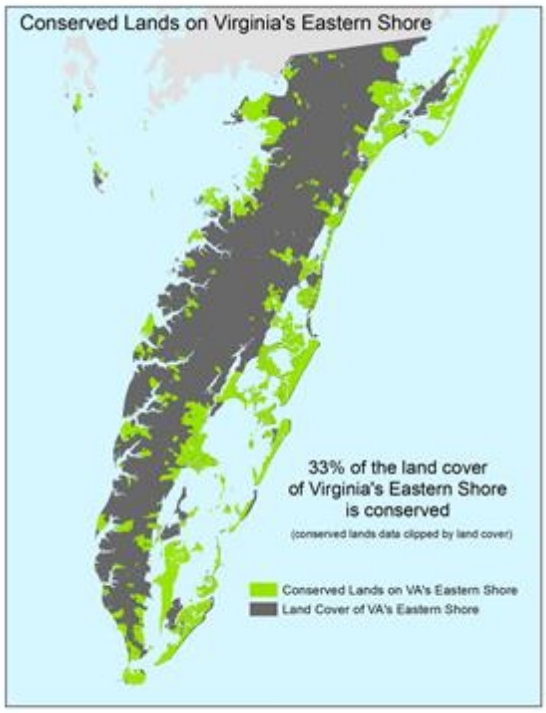
2. Introduction

The purpose of this assignment was two-fold. The first part was to conduct research to better understand how land conservation programs and practices on Virginia's Eastern Shore have an effect on local economic conditions. The study area for this research was Accomack County and Northampton County. These two counties comprise the geographic area of Virginia's Eastern Shore. A map of the study area showing conserved lands on Virginia's Eastern Shore is shown in Figure 2-1. The Virginia Coastal Zone Management Program (VCZMP), a program within the State of Virginia's Department of Environmental Quality (VDEQ), calculated that approximately 33 percent of the land in these two counties are considered to be conserved.

Figure 2 - 1: Map of Conserved Lands on Virginia's Eastern Shore



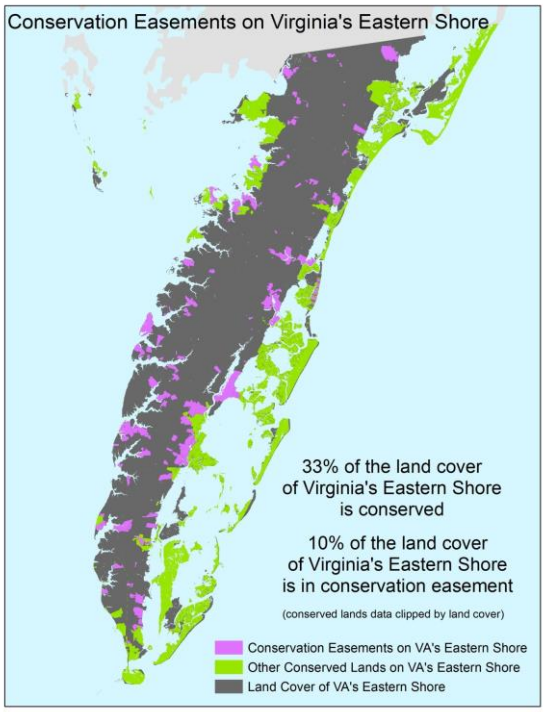
Source: Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality.

The second part of this assignment was to conduct an economic and fiscal analysis to measure and quantify the impact of conserved land and conservation easements on the "bottom-line" of the budgets of Accomack and Northampton counties. In Figure 2-2, the VCZMP calculated that 10 percent of the land cover of Virginia's Eastern Shore is in conservation easements.

As can be seen in Figure 2-3, approximately 7.4 percent of the land comprising the Eastern Shore counties of Accomack and Northampton consists of land that is considered conserved and not subject to development restrictions associated with wetlands or the barrier islands.[1]

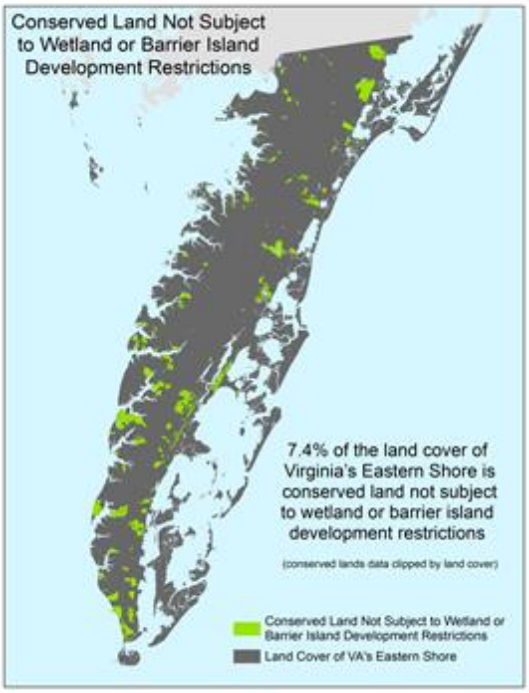
[1]*Source:* Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality.

Figure 2 - 2: Map of Conserved Lands with Conservation Easements



Source: Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality.

Figure 2 - 3: Conserved Land not Subject to Development Restrictions



Source: Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality.

A description and quantification of the direct and foregone tax revenues associated with conserved land and conservation easements on the Eastern Shore of Virginia is discussed in section three of this report. The economic impact to the economy of Northampton and Accomack counties from conservation-related industries and conservation-related tourism is presented in section four. A literature review of economic and fiscal impact studies relating to conserved lands, and the documentation of available datasets used by local conservation entities is presented in section five. The net fiscal impact of all conserved land on the Eastern Shore is described in section six. Finally, the fiscal impact of potential future additional fee simple or conservation land acquisition is presented in section seven. The underlying methodology employed to compute the economic and fiscal impact analyses conducted for this report is described in the appendix.

3. Description and Quantification of Direct and Foregone Tax Revenues

Introduction

There are subtle yet distinct differences in the definition between conserved land, conservation easements, agriculture and forest districts, and tax-exempt properties. In this section, the definition of each category is described. Data from real estate tax assessment rolls in Accomack and Northampton counties were identified, collected and analyzed for each category. Foregone real estate tax revenues from each category of land were estimated and the findings are presented.

Definition of Conserved Land

The use of the phrase "conserved land" and "conservation easements" are often used interchangeably in the literature on land conservation and preservation. "Conserved land" generally refers to the purpose, function or use of land that has been set aside or designated for the protection and preservation of land in its natural state whereas "conservation easement" or "conservation easements" typically refer to a legal restriction placed on the land as to control its current or future use. The general purpose is the same but the method is different. Simply stated, all lands that have a conservation easement on those lands are conserved but not all conserved lands have conservation easements recorded on the deed of ownership. For example, some public land (such as land owned by the federal government or a state or a county government) are considered conserved for the purpose of their use but do not have conservation easements placed on that public land.

The phrase "conserved land" is sometimes also used interchangeably in the literature with the phrase "open-space land." According to the Virginia Open-Space Land Act, the phrase "open-space land" means "any land which is provided or preserved for (i) park or recreational purposes, (ii) conservation of land or other natural resources, (iii) historic or scenic purposes, (iv) assisting in the shaping of the character, direction, and timing of community development, or (v) wetlands..."[2] Thus, it is important to note that not all open-space land is conserved.

[2]Virginia Open-Space Land Act. Section 10.1-1700. Definitions.

Some open-space land is simply used for recreational purposes (e.g., public parks) and some open-space land is conserved (e.g., for the protection of clean air sheds, watersheds, wetlands, wildlife habitats, etc.).

Definition of Conservation Easements

Conservation easements are used to retain or protect natural or open-space and to continue in perpetuity the availability of such land for various purposes including agricultural, forestal, recreational, the protection of natural resources, and the preservation of historical, architectural or archaeological characteristics. According to the Code of Virginia, a conservation easement is defined as

> "a nonpossessory interest of a holder in real property, whether easement appurtenant or in gross, acquired through gift, purchase, devise, or bequest imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural or open-space values of real property, assuring its availability for agricultural, forestal, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural or archaeological aspects of real property."[3]

Unless the legal document creating the easement contains a time restriction, conservation easements are perpetual and run with the land.[4] Notwithstanding the perpetual duration of a conservation easement, Chapter 10.1 of Title 10.1 of the Code of Virginia does not restrict, prevent or otherwise limit the power of a court of competent jurisdiction to modify or terminate a conservation easement or to limit the ability of a public body (such as a county) to utilize the power of eminent domain on land that contains a conservation easement.[5]

Definition of Agriculture and Forest Districts

The policy of the State of Virginia as to the purpose of land used in agricultural and forestal production is explained in Chapter 43, Title 15.2 of the Code of Virginia. Specifically, in this chapter,

> "[i]t is the policy of the Commonwealth to conserve and protect and to encourage the development and improvement of the Commonwealth's agricultural and forestal lands for the production of food and other agricultural and forestal products. It is also the policy of the Commonwealth to conserve and protect agricultural and forestal products as valued natural and ecological resources which provide essential open spaces for clean air sheds, watershed

[3]Code of Virginia, Title 10.1 Conservation. Chapter 10.1 Virginia Conservation Act. Section 10.1-1009. Definitions.
[4]Ibid. Section 10.1-1010, paragraph C.
[5]Ibid. Paragraph F.

> protection, wildlife habitat, as well as for aesthetic purposes. It is the purpose of this chapter to provide a means for a mutual undertaking by landowners and localities to protect and enhance agricultural and forestal land as a viable segment of the Commonwealth's economy and as an economic and environmental resource of major importance."[6]

According to the Code of Virginia, "[l]and used in agricultural and forestal production within an agricultural district, a forestal district or an agricultural and forestal district that has been established under Chapter 43...of Title 15.2, shall be eligible for the use value assessment and taxation whether or not a local land-use plan or local ordinance pursuant to [section 58.1-3231 of Chapter 32] has been adopted."[7] Use value assessment refers to the non-fair market value assessment of certain categories of land as is permitted by the Code of Virginia.

Definition of Fair Market Value versus Land Use Assessment

Land assessed at fair market value (FMV) refers to the value of land for taxation purposes and incorporates the concept of highest and best use of the land, as reflected through actual arms-length market transactions. For taxation purposes, land assessed at use value does not consider the highest and best use of land. Perhaps the most succinct and easy to understand definition of use value and the explanation of the land use assessment program as allowed by the Code of Virginia can be found on the website of Accomack County, as follows:

> "The Land Use Assessment Program is administered by the [real estate assessor's] department. This is an assessment program that is permitted by state law and ordinance for Accomack County by the Board of County Supervisors. It allows for the special assessment of property used for agricultural, forest, and horticultural purposes.
>
> The General Assembly has held that the preservation of special use land is vital to the public interest. Taxation on the basis of use-value is an attempt to help preserve rural lands in the face of rapid intensive-use development, to help preserve natural resources, and to help provide for the orderly development of real estate."[8]

The land use assessment program page on the County's website further goes on to say that the:

> "determination of use value ignores the concept of highest and best use and concentrates solely on the current use of the property exclusive of potential alternative uses. In essence, fair market value is a function of actual market

[6]Code of Virginia, Title 15.2 Counties, Cities and Towns. Chapter 43. Agricultural and Forestal Districts Act, Section 15.2-4301. Declaration of policy findings and purpose.
[7]Code of Virginia, Title 58.1. Taxation. Chapter 32. Real Property Tax. Article 4. Special Assessment for Land Preservation, Section 58.1-3231.
[8]Accomack County, Virginia. Department of Real Estate Assessment, Land Use Assessment Program.

> transactions whereas use-value is not based on the workings of the real estate market. As a consequence, use values are usually much lower than fair market value."[9]

According to the Accomack County website, land that is included in the land use assessment program will be removed from the program if the owners of those lands are delinquent in paying their real estate property taxes. Furthermore, land that is included in the land use assessment program is subject to roll-back taxes when the use or function of those lands change to a non-qualifying use or receive a change in zoning to a more intensive use.[10]

Taxation of Land with Conservation Easements in Virginia

In Virginia, land that is subject to conservation easements are assessed for taxation purposes at the use value for open space. According to the Code of Virginia, the use value is the "reduction in the fair market value (FMV) of the land that results from the inability of the owner of the [fee interest in the land] to use such property for uses terminated by the [conservation easement].[11] It is important to note here that the taxation of land with conservation easements in Virginia is different than tax-exempt land that is also conserved. That is, land that is classified as tax-exempt is classified as such due to the ownership of the land by *specific entities*, such as federal, state and local governments, and not because the land itself has been designated or set-aside as conserved land. Thus, certain entities that are classified as tax-exempt entities do not pay real estate taxes on conserved land that they own, however, entities that are not classified as tax-exempt do pay real estate taxes on land that contains conservation easements.

Title 58.1 of the Code of Virginia that deals with the issues of taxation does encourage land conservation programs in the State of Virginia. The purpose of the Virginia Land Conservation Incentives Act of 1999 is to "supplement existing land conservation programs to further encourage the preservation and sustainability of Virginia's unique natural resources, wildlife habitats, open spaces and forested resources."[12] Not all land that is conserved is exempt from real estate taxation and tax-exempt entities by choice have the option to pay real estate taxes on conserved land. For example, The Nature Conservancy is a tax-exempt organization yet they elect to pay real estate taxes on land that is conserved in either Accomack or Northampton counties. At the end of fiscal year 2015 (the latest year that data were available), The Nature Conservancy was the fifth highest paying property taxpayer in Northampton County. In fiscal year 2015, the total assessed value of the holdings of The Nature Conservancy in Northampton County was $9,914,900.[13]

[9]Ibid. Same page.
[10]Ibid.
[11]Code of Virginia, Title 10.1 Conservation. Chapter 10.1 Virginia Conservation Act. Section 10.1-1011, Taxation, paragraph B.
[12]Code of Virginia, Title 58.1. Taxation. Chapter 3. Income Tax, Section 58.1-510. Purpose.
[13]County of Northampton, Virginia. Comprehensive Annual Financial Report (CAFR) for the Fiscal Year End June 30, 2015. Page 148, Table 5, "Principal Property Tax Payers, Current Year and Ten Years Ago."

Foregone Revenues from Conservation Easements – Accomack County

Data on conservation easements from real estate tax assessment rolls in Accomack County were identified, collected and analyzed. The findings of this analysis are shown in Table 3-1. In 2016, there were 181 parcel numbers on the assessment records of Accomack County that were coded as containing conservation easements. These 181 parcel numbers reflect 100 percent of the total conservation easements on the assessment records of Accomack County. These 181 parcels totaled 17,628.6 acres. The total fair market value of these acres was $48,263,500 and the land use value of this acreage was $35,297,100. The difference between the fair market value and the use value of this acreage was $12,966,400.

According to the Accomack County Assessor's Office, the estimated property taxes paid on conservation easements is the sum of the building value and the use value of the land "with the exception that if the use value on the land is higher than the fair market value on the land, then the lower fair market value is used for taxation purposes."[14] The estimated total property taxes paid on the building value and use value of the land on these 17,682.6 acres was $303,652.51. The difference between the fair market value and the use value of the land was estimated to be $79,095.04.

The estimated total real estate market value (residential property + commercial property + agricultural property) in Accomack County in 2016 was $3,885,107,626. Of this $3.89 billion in total estimated actual value, 97.59 percent was the taxable assessed value and 2.41 percent was attributable to the land use value reduction.[15] Of the $3.89 billion in total estimated actual value, the value of the land use reduction attributable to conservation easements ($12,966,400) accounted for less than one percent (0.3337 percent).

[14]Of the 181 conservation easement parcels in 2016 in Accomack County, there were 38 parcels where the use value was higher than the fair market value.

[15]County of Accomack, Virginia. Comprehensive Annual Financial Report (CAFR) for the Fiscal Year Ended June 30, 2016. Page 179, Table 5A, "Assessed Value and Estimated Actual Value of Taxable Real Property, Last Ten Fiscal Years."

Table 3 - 1: Foregone Revenues from Easements in Accomack County

Fair Market Value versus Land-Use Value
Conservation Easements
Accomack County, Virginia
2016

		2016 Estimated Real Estate Taxes
Total Parcel Numbers	181	
Total Number of Acres	17,682.60	
Total Building Value	$14,482,000	$ 88,340.20
Total Fair Market Value (FMV) of Land	$48,263,500	$ 294,407.35
Total Use Value of Land	$35,297,100	$ 215,312.31
Difference between FMV and Use Value	$12,966,400	$ 79,095.04
Estimated Property Taxes Paid *(Total Building Value + Total Use Value)*		$ 303,652.51
Estimated Property Taxes Foregone		$ (79,095.04)

Source - Raw Data : Accomack County, Virginia Assessor's Office

Source - Table Construction and Analysis :
The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Foregone Revenues from Conservation Easements – Northampton County

Data on conservation easements from real estate tax assessment rolls in Northampton County were also identified, collected and analyzed. The findings of this analysis are shown in Table 3-2. In 2016, there were 162 parcel numbers on the assessment records of Northampton County that were coded as containing conservation easements. These 162 parcel numbers reflect 100 percent of the total conservation easements on the assessment records of Northampton County. These 162 parcels totaled 12,554.41 acres. The total fair market value of these acres was $61,683,200 and the land use value of this acreage was $27,513,200. The difference between the fair market value and the use value of this acreage was $34,170,000.

The estimated total property taxes paid on the building value and use value of the land on these 12,554.41 acres was $322,694.04. The difference between the fair market value and the use value of the land was estimated to be $283,611.

Table 3 - 2: Foregone Revenues from Easements in Northampton County

Fair Market Value versus Land-Use Value
Conservation Easements
Northampton County, Virginia
2016

		2016 Estimated Real Estate Taxes
Total Parcel Numbers	162	
Total Number of Acres	12,554.41	
Total Building Value	$11,365,600	$ 94,334.48
Total Fair Market Value (FMV) of Land	$61,683,200	$ 511,970.56
Total Use Value of Land	$27,513,200	$ 228,359.56
Difference between FMV and Use Value	$34,170,000	$ 283,611.00
Estimated Property Taxes Paid		$ 322,694.04
(Total Building Value + Total Use Value)		
Estimated Property Taxes Foregone		$ (283,611.00)

Source - Raw Data : Northampton County, Virginia Commissioner of the Revenue's Office

Source - Table Construction and Analysis :

The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

The estimated total real estate market value (residential property + commercial property + raw land) in Northampton County in 2016 was $1,915,956,050.[16] Of the $1.92 billion in total estimated market value, the value of the land use reduction attributable to conservation easements ($34,170,000) accounted for 1.78 percent.

Tax-Exempt Properties – Accomack County

The Code of Virginia requires counties, cities and towns[17] to classify and quantify the assessed value of tax-exempt properties on the local land books of each jurisdiction.[18] The value of tax-exempt and tax-immune properties in Accomack County for the tax years ending December

[16]County of Northampton, Virginia. Comprehensive Annual Financial Report (CAFR) for the Fiscal Year Ended June 30, 2016. Page 150, Table 7, "Assessed Value and Estimated Actual Value of Taxable Real Property, Last Ten Fiscal Years."
[17]For the purpose of this report, "towns" refer to the incorporated towns.
[18]Code of Virginia, Title 58.1 Taxation. Chapter 2. Department of Taxation, Section 58.1-208. Classification of real property.

31, 2012 through 2015 are shown in Table 3-3. There are two classifications of tax-exempt properties shown in Table 3-3: Governmental and Non-governmental. The Governmental classification includes tax-exempt properties owned by the United States, the Commonwealth of Virginia, regional governmental entities, and local governments (including Accomack County and the fourteen incorporated towns in Accomack County). The Non-governmental classification includes tax-exempt properties owned by religious, charitable, educational, and all other tax-exempt or tax-immune entities.

Value of Tax-Exempt Properties in Accomack County

At the end of tax year December 31, 2012, the total value of tax-exempt properties in Accomack County was $687,160,400. These properties accounted for 15.07 percent of the total real estate assessed value of all properties (both taxable and tax-exempt) in Accomack County. By the end of tax year 2015, the total value of tax-exempt properties had decreased to $683,322,300 yet the ratio of these tax-exempt properties to all properties in the County had increased to 15.78 percent. The increase in the ratio of the assessed value of tax-exempt properties as a percentage of the total value of all property in the County (both taxable and tax-exempt) is a reflection of the softening in the assessed values of taxable real estate in the County over the past five years. This trend is evident when examining the assessment data for 2011. In 2011, the total value of tax-exempt properties in Accomack County was $702,761,100 but this dollar amount represented only 13.79 percent of the total value of all properties in the County.

All sub-classifications of tax-exempt property ownership show a slight curvilinear trend between 2012 and 2015. Of the eight sub-classifications of tax-exempt property ownership in Accomack County at the end of tax year December 31, 2015, the federal government was the largest owner of tax-exempt property in Accomack County, with the total value of their land portfolio equal to $424,171,600 or 62.07 percent of the total value of $683,322,300 in properties classified as tax-exempt. Local governments (consisting of Accomack County and the fourteen incorporated towns in the County) were (as a group) the fourth largest owner of tax-exempt properties, with a total value of their tax-exempt land portfolio at $55,508,000 (or 8.12 percent). The Commonwealth of Virginia was the 6th largest owner of tax-exempt land in Accomack County at $19,542,200 or 2.86 percent.

Table 3 - 3: Value of Tax-Exempt Properties in Accomack County

Total Value of Land and Building Improvements by Classification
Tax Years 2012 - 2015

Exempt/Immune Classification	Tax Year Ending December 31st			
	2012	2013	2014	2015
Governmental				
710-Federal	$ 425,107,900	$ 425,107,900	$ 423,434,900	$ 424,171,600
720-State	$ 18,809,300	$ 20,667,000	$ 19,623,600	$ 19,542,200
730-Regional	$ 394,500	$ 394,500	$ 268,100	$ 268,100
740-Local	$ 55,941,100	$ 56,046,300	$ 55,455,100	$ 55,508,000
750-Multiple	$ -	$ -	$ -	$ -
Sub-Total:	$ 500,252,800	$ 502,215,700	$ 498,781,700	$ 499,489,900
Non-Governmental				
760-Religious	$ 66,448,700	$ 66,564,200	$ 64,459,900	$ 65,178,500
770-Charitable	$ 18,623,100	$ 18,784,400	$ 19,007,000	$ 18,610,400
780-Educational	$ 76,351,600	$ 76,250,700	$ 74,888,100	$ 75,301,900
790-All Other	$ 25,484,200	$ 25,516,500	$ 24,494,900	$ 24,741,600
Sub-Total:	$ 186,907,600	$ 187,115,800	$ 182,849,900	$ 183,832,400
Total:	$ 687,160,400	$ 689,331,500	$ 681,631,600	$ 683,322,300
% of Total to all Real Estate in County	15.07%	15.10%	15.84%	15.78%

Source - Raw Data : Accomack County, Virginia Assessor's Office

Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Foregone Revenues from Tax-Exempt Properties – Accomack County

The estimated foregone tax revenues to Accomack County from all tax-exempt properties in the County for the tax years ending December 31, 2012 through 2015 are shown in Table 3-4. In 2012, the total amount of foregone real estate taxes from these properties was $3,587,353. Of the $3,587,353 in foregone real estate tax revenues, $2,613,681 (or 72.86 percent) were from tax-exempt properties owned by governmental entities and the remaining $973,672 (or 27.14 percent) were from tax-exempt properties owned by non-governmental entities.

By 2015, total foregone real estate taxes from tax-exempt properties had increased by 8.18 percent to $3,880,643. Of the $3,880,643 in foregone real estate tax revenues, $2,840,639 (or 73.2 percent) were from tax-exempt properties owned by governmental entities. The remaining $1,040,003 (or 26.8 percent) were from tax-exempt properties owned by non-governmental entities.

Table 3 - 4: Foregone Revenues from Tax-Exempt Properties in Accomack County

Tax Exempt and Tax Immune Real Property by Classification
Accomack County, Virginia
Tax Years 2012 - 2015

Exempt/Immune Classification	Tax Year Ending December 31st			
	2012	2013	2014	2015
Governmental				
710-Federal	$ 2,226,305.93	$ 2,226,305.93	$ 2,415,891.77	$ 2,420,164.63
720-State	$ 99,745.61	$ 109,591.40	$ 113,886.38	$ 113,414.25
730-Regional	$ 2,090.85	$ 2,090.85	$ 1,554.98	$ 1,554.98
740-Local	$ 285,539.07	$ 286,096.60	$ 305,201.04	$ 305,505.81
750-Multiple	$ -	$ -	$ -	$ -
Sub-Total:	$ 2,613,681.46	$ 2,624,084.78	$ 2,836,534.17	$ 2,840,639.67
Non-Governmental				
760-Religious	$ 345,802.99	$ 346,415.14	$ 364,584.23	$ 368,744.73
770-Charitable	$ 96,031.37	$ 96,886.26	$ 105,268.15	$ 103,018.09
780-Educational	$ 397,366.64	$ 396,831.87	$ 423,566.28	$ 425,595.16
790-All Other	$ 134,471.30	$ 134,642.50	$ 141,214.67	$ 142,645.53
Sub-Total:	$ 973,672.30	$ 974,775.77	$ 1,034,633.33	$ 1,040,003.51
Total:	$ 3,587,353.76	$ 3,598,860.55	$ 3,871,167.50	$ 3,880,643.18

Source - Raw Data : Accomack County, Virginia Assessor's Office

Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

All sub-classifications of foregone real estate tax revenues from tax-exempt properties showed the same curvilinear trend between 2012 and 2015 that was seen in Table 3-3. Of the eight sub-classifications of tax-exempt property ownership in Accomack County at the end of tax year December 31, 2015, the largest amount of estimated foregone real estate taxes was from the properties owned by the federal government, with estimated foregone real estate tax revenues to Accomack County of $2,420,164. Estimated foregone tax revenues from local governments (consisting of Accomack County and the fourteen incorporated towns in the County) were (as a group) the fourth largest with estimated foregone real estate tax revenues of $305,505 in 2015. Estimated foregone real estate tax revenues from the Commonwealth of Virginia was the 6th highest, at $113,414.

Tax-Exempt Properties – Northampton County

The value of tax-exempt and tax-immune properties in Northampton County for the tax years ending December 31, 2012 through 2015 are shown in Table 3-5. There are two classifications of tax-exempt properties shown in Table 3-5: Governmental and Non-governmental. The Governmental classification includes tax-exempt properties owned by the United States, the Commonwealth of Virginia, and local governments (including Northampton County and the towns within the County). The Non-governmental classification includes tax-exempt properties owned by religious, educational, and all other tax-exempt or tax-immune entities.[19]

Value of Tax-Exempt Properties in Northampton County

At the end of tax year December 31, 2012, the total value of tax-exempt properties in Northampton County was $570,329,100. These properties accounted for 16.51 percent of the total real estate assessed value of all properties (both taxable and tax-exempt) in Northampton County. By the end of tax year 2015, the total value of tax-exempt properties had decreased to $563,691,200 yet the ratio of these tax-exempt properties to all properties in the County had increased to 19.82 percent. The increase in the ratio of the assessed value of tax-exempt properties as a percentage of the total value of all property in the County (both taxable and tax-exempt) is a reflection of the softening in the assessed values of taxable real estate in the County over the past four years.

The federal government and State of Virginia sub-classifications of tax-exempt property ownership have been either slightly curvilinear or flat between 2013 and 2015. Of the six sub-classifications of tax-exempt property ownership in Northampton County at the end of tax year December 31, 2015, the category "All Other" had the largest ownership of tax-exempt properties in Northampton County, with the total value of land in this classification equal to $341,665,500 or 60.61 percent of the total value of $563,691,200 in properties classified as tax-exempt.[20] Within the All Other category in Northampton County, approximately 80 percent of the value of this category consisted of the Chesapeake Bay Bridge & Tunnel.

Local governments (consisting of Northampton County and the incorporated towns within the County) were (as a group) the second largest owner of tax-exempt properties, with a total value of their tax-exempt land portfolio at $123,008,500 (or 21.82 percent). The Commonwealth of Virginia was the 3rd largest owner of tax-exempt land in Northampton County at $40,637,000 or 7.21 percent.

[19]The tax-exempt sub-classifications for Northampton County are slightly different than for Accomack County. While Class Code 7 is the designated code for tax-exempt properties in every county, city and town in the State of Virginia, section 58.1-208 of the Code of Virginia gives the local assessing officer the discretion to categorize the sub-classifications. Northampton County does not use sub-classifications 730, 750 and 770.

[20]The sub-classification "All Other" is comprised of real property owned and used by organizations for benevolent, cultural, historical, and patriotic purposes and also may include public parks and playgrounds. (see State of Virginia, section 58.1-208 of the Code of Virginia).

Table 3 - 5: Value of Tax-Exempt Properties in Northampton County

Total Value of Land and Building Improvements by Classification
Tax Years 2012 - 2015

Exempt/Immune Classification	Tax Year Ending December 31st			
	2012[1]	2013[2]	2014	2015
Governmental				
710-Federal	$ 31,855,000	$ 27,686,700	$ 27,668,700	$ 28,058,300
720-State	$ 54,268,200	$ 40,637,000	$ 40,637,000	$ 40,637,000
730-Regional	$ -	$ -	$ -	$ -
740-Local	$ 104,069,200	$ 126,561,600	$ 122,477,600	$ 123,008,500
750-Multiple	$ -	$ -	$ -	$ -
Sub-Total:	$ 190,192,400	$ 194,885,300	$ 190,783,300	$ 191,703,800
Non-Governmental				
760-Religious	$ 27,313,700	$ 22,672,600	$ 22,716,100	$ 22,839,300
770-Charitable	$ -	$ -	$ -	$ -
780-Educational	$ 7,134,500	$ 7,033,500	$ 7,482,600	$ 7,482,600
790-All Other	$ 345,688,500	$ 324,295,000	$ 341,531,300	$ 341,665,500
Sub-Total:	$ 380,136,700	$ 354,001,100	$ 371,730,000	$ 371,987,400
Total:	$ 570,329,100	$ 549,034,500	$ 562,513,300	$ 563,691,200
% of Total to all Real Estate in County	16.51%	19.26%	19.74%	19.82%

Source - Raw Data : Northampton County, Virginia Assessor's Office; State of Virginia, Department of Taxation.
Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Notes : [1] Includes an additional $15,100 reported by the State of Virginia, Department of Taxation. [2] Includes an additional $148,100 reported by the State of Virginia, Department of Taxation.

Foregone Revenues from Tax-Exempt Properties – Northampton County

The estimated foregone tax revenues to Northampton County from all tax-exempt properties in the County for the tax years 2012 through 2015 are shown in Table 3-6. In 2012, the total amount of foregone real estate taxes from these properties was $3,079,858. Of the $3,079,858 in foregone real estate tax revenues, $1,027,038 (or 33.35 percent) were from tax-exempt properties owned by governmental entities and the remaining $2,052,738 (or 66.65 percent) were from tax-exempt properties owned by non-governmental entities.

By 2015, total foregone real estate taxes from tax-exempt properties had increased by 24.55 percent to $3,835,918. Of the $3,835,918 in foregone real estate tax revenues, $1,304,544 (or 34.01 percent) were from tax-exempt properties owned by governmental entities. The remaining $2,531,374 (or 65.99 percent) were from tax-exempt properties owned by non-governmental entities.

Table 3 - 6: Foregone Revenues from Tax-Exempt Properties in Northampton County

Summary of Estimated Property Taxes Foregone
Tax Exempt and Tax Immune Real Property by Classification
Tax Years 2012 - 2015

Exempt/Immune	Tax Year Ending December 31st			
Classification	2012[1]	2013[2]	2014	2015
Governmental				
710-Federal	$ 172,017.00	$ 186,276.12	$ 186,155.01	$ 190,936.73
720-State	$ 293,048.28	$ 273,405.74	$ 273,405.74	$ 276,534.79
730-Regional	$ -	$ -	$ -	$ -
740-Local	$ 561,973.68	$ 851,506.44	$ 824,029.29	$ 837,072.84
750-Multiple	$ -	$ -	$ -	$ -
Sub-Total:	$ 1,027,038.96	$ 1,311,188.30	$ 1,283,590.04	$ 1,304,544.36
Non-Governmental				
760-Religious	$ 147,493.98	$ 152,541.25	$ 152,833.92	$ 155,421.44
770-Charitable	$ -	$ -	$ -	$ -
780-Educational	$ 38,526.30	$ 47,321.39	$ 50,342.93	$ 50,919.09
790-All Other	$ 1,866,717.90	$ 2,181,856.76	$ 2,297,822.59	$ 2,325,033.73
Sub-Total:	$ 2,052,738.18	$ 2,381,719.40	$ 2,500,999.44	$ 2,531,374.26
Total:	$ 3,079,858.68	$ 3,693,904.12	$ 3,784,589.48	$ 3,835,918.62

Source - Raw Data : Northampton County, Virginia Assessor's Office, State of Virginia, Department of Taxation.

Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Notes - [1]Includes a technical adjustment of $81.54 in the Total. [2]Includes a technical adjustment of $996.42 in the Total.

Of the six sub-classifications of tax-exempt property ownership in Northampton County at the end of tax year 2015, the largest amount of estimated foregone real estate taxes was from the properties in the All Other category, with estimated foregone real estate tax revenues to Northampton County of $2,325,033. Estimated foregone tax revenues from local governments

(consisting of Northampton County and the incorporated towns within the County) were (as a group) the second largest with estimated foregone real estate tax revenues of $837,072 in 2015. Estimated foregone real estate tax revenues from the Commonwealth of Virginia was the 3rd highest, at $276,534.

Foregone Revenues from Tax-Exempt Conserved Land – Accomack County

The value of tax-exempt properties in Accomack County shown in Table 3-3 was bifurcated into two categories: (1) the value of tax-exempt land associated with conserved land; and (2) the value of tax-exempt land associated with non-conserved land. In Table 3-7, the total value of all tax-exempt land, the total value of all conserved land, and the foregone real estate tax revenues from each category are show.

Table 3 - 7: Foregone Revenues from Conserved Land in Accomack County

Tax Year 2015

Exempt/Immune Classification	2015 Value of All Tax-Exempt Land in the County	Ratio of 2014 Conserved Land Value to all Tax-Exempt Land	2015 Value of All Conserved Land in the County	2015 Foregone Tax Revenues from all Tax-Exempt Land in the County	2015 Foregone Tax Revenues from Conserved Land in the County	Acres of Conserved Land in the County
Governmental						
710-Federal	$ 424,171,600	10.16%	$ 43,096,650	$ 2,420,165	$ 245,893	13,882.48
720-State	$ 19,542,200	34.55%	$ 6,752,474	$ 113,414	$ 39,188	8,006.66
730-Regional	$ 268,100	0.00%	$ -	$ 1,555	$ -	0.00
740-Local	$ 55,508,000			$ 305,506		
Category A[1]		5.14%	$ 2,854,280		$ 15,709	567.69
Category B[2]		22.31%	$ 12,385,804		$ 68,169	107.34
750-Multiple	$ -	0.00%	$ -	$ -	$ -	0.00
Sub-Total:	$ 499,489,900		$ 65,089,207	$ 2,840,640	$ 368,960	22,564.17
Weighted-Average		13.03%			12.99%	
Non-Governmental						
760-Religious	$ 65,178,500	0.00%	$ -	$ 368,745	$ -	0.00
770-Charitable	$ 18,610,400	0.00%	$ -	$ 103,018	$ -	0.00
780-Educational	$ 75,301,900	2.74%	$ 2,060,523	$ 425,595	$ 11,646	929.31
790-All Other	$ 24,741,600	58.36%	$ 14,439,275	$ 142,646	$ 83,248	9,392.19
Sub-Total:	$ 183,832,400		$ 16,499,798	$ 1,040,004	$ 94,894	10,321.50
Weighted-Average		8.98%			9.12%	
Total:	$ 683,322,300		$ 81,589,005	$ 3,880,643	$ 463,854	32,885.67
Weighted-Average		11.94%			11.95%	

Source - Raw Data : Accomack County, Virginia Assessor's Office

Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Note : [1]Conserved land, not including park, harbor, landing, etc. [2]Park, harbor, landing, etc.

In tax year 2015, the value of all conserved land owned by various governmental entities comprised 13.03 percent of the value of all tax-exempt government land. For the non-governmental entities, this ratio was 11.94 percent.

In tax year 2015, of the $3,880,643 in foregone tax revenues from all tax-exempt land in the County, $463,854 (or 11.95 percent) were the estimated foregone tax revenues from conserved land. Of this $463,854 in foregone tax revenues, $368,960 (or 79.54 percent) reflected foregone tax revenues from conserved land owned by governmental entities. The remaining 20.46 percent (or $94,894) were the foregone tax revenues on conserved land owned by non-governmental entities.

Foregone Revenues from Tax-Exempt Conserved Land – Northampton County

The value of tax-exempt properties in Northampton County shown in Table 3-5 was bifurcated into two categories: (1) the value of tax-exempt land associated with conserved land; and (2) the value of tax-exempt land associated with non-conserved land. In Table 3-8, the total value of all tax-exempt land, the total value of all conserved land, and the foregone real estate tax revenues from each category are show.

Table 3 - 8: Foregone Revenues from Conserved Land in Northampton County

Tax Year 2015

Exempt/Immune Classification	2015 Value Tax-Exempt Land	2016 % Tax-Exempt Land Conserved	2015 Value Conserved Land	2015 Foregone Tax All Exempt Land	2015 Foregone Tax Conserved Land	Acres of Land Conserved
Governmental						
710-Federal	$ 28,058,300	70.79%	$ 19,863,607	$ 190,936.73	$ 135,171.85	2,123.01
720-State	$ 40,637,000	73.86%	$ 30,012,477	$ 276,534.79	$ 204,234.90	12,790.37
740-Local	$ 123,008,500	7.68%	$ 9,445,955	$ 837,072.84	$ 64,279.72	278.50
Sub-Total:	$ 191,703,800		$ 59,322,038	$ 1,304,544.36	$ 403,686.47	15,191.88
Weighted-Average		31.00%			30.94%	
Non-Governmental						
760-Religious	$ 22,839,300	0.63%	$ 144,408	$ 155,421.44	$ 982.70	17.29
780-Educational	$ 7,482,600	4.42%	$ 331,057	$ 50,919.09	$ 2,252.84	50.74
790-All Other	$ 341,665,500	6.44%	$ 22,017,521	$ 2,325,033.73	$ 149,829.23	3,380.95
Sub-Total:	$ 371,987,400		$ 22,492,986	$ 2,531,374.26	$ 153,064.77	3,448.98
Weighted-Average		6.10%			6.05%	
Total:	$ 563,691,200		$ -	$ 3,835,918.62	$ 556,751.24	18,640.86
Weighted-Average		14.40%			14.51%	

Source - Raw Data : Northampton County, Virginia. Office of the Commissioner of the Revenue

Source - Table Construction and Analysis : The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

In tax year 2015, the value of all conserved land owned by various governmental entities comprised 31.00 percent of the value of all tax-exempt government land. For the non-governmental entities, this ratio was 6.10 percent.

In tax year 2015, of the $3,835,918.62 in foregone tax revenues from all tax-exempt land in the County, $556,751.24 (or 14.51 percent) were the estimated foregone tax revenues from

conserved land. Of this $556,751.24 in foregone tax revenues, $403,686.47 (or 72.51 percent) reflected foregone tax revenues from conserved land owned by governmental entities. The remaining 27.49 percent (or $153,064.77) were the foregone tax revenues on conserved land owned by non-governmental entities.

4. Quantification of the Value of the Indirect and Induced Benefits

Introduction

Initial research into the local economy of the Eastern Shore (from a review of published, third-party economic reports on the local economy of this region) was conducted. In this section, the findings of our analysis of the economic impacts related to land conservation on Virginia's Eastern Shore are presented.[21] The analysis conducted was separated into three components based on industry sector and the degree to which we find the relationship between conserved lands and related economic activities *causal* or *supported*. In performing this analysis, we consistently used a conservative approach in estimate the economic impacts of the activities associated with conserved lands; therefore, the estimates provided below represent a lower bound of the potential economic impacts of preserved lands on Virginia's Eastern Shore.

Eastern Shore Entities

For our purposes, a causal relationship can be thought of as "but for the presence" the economic impacts would not exist. Agencies and non-profit entities that focus on land conservation would not have operations on the Eastern Shore if there were no protected lands. Similarly, several tourism-, especially eco-tourism-focused businesses indicated that without the pristine waterways and wildlife habitats that result from land conservation on the Eastern Shore, they would have no reason to be in business. Collectively, we refer to these organizations that have self-identified as being wholly, or almost wholly, reliant on the activities related to land conservation, or the benefits of land conversation, as Direct Organizations.

Supported industries on the Eastern Shore are those that receive exceptional benefits related to land conservation, but could exist without those benefits. In this research, we identified two sectors as supported industries: aquaculture and tourism. The aquaculture industry, including shellfish (largely oysters) farming and finfish fisheries, is supported, at least in part, by improving water conditions related to land conversation, cleanup efforts in the Chesapeake Bay, and other programs. Land conversation is a contributing factor to aquaculture industry success, but it would not be appropriate to claim full credit for this success.

Similar to aquaculture, tourism to the Eastern Shore is supported by the environmental benefits from land conservation. As will be described in more detail in a later section, we associate land conservation with tourism spending when the primary purpose of the trip is outdoor recreation or entertainment/sightseeing. With no disrespect to Eastern Shore communities, there are no

[21]A detailed description of the methodology employed to conduct the economic impact analysis in this section is described in the Appendix.

major amusement parks or similarly scaled entertainment venues to attract entertainment seeking visitors. Sightseeing and entertainment activities on the Eastern Shore are much more connected to the environment and natural wonders. However, this research takes the conservative approach that treats the segment of tourism-related economic activities captured in this study as being supported, not necessarily caused, by conserved lands.

The Economic Impacts of Direct Organizations

The Project Advisory Committee identified several key organizations that are directly engaged in land conservation, or whose business is caused by the benefits of land conservation, on the Eastern Shore. These include government agencies or departments, such as the Chincoteague National Wildlife Refuge, state park operations, public research institutions, and private non-profit organizations such as The Nature Conservancy. As previously noted, our list of Direct Organizations also included several tourist/guide services. We did not include any economic activities by the Virginia Department of Environmental Quality.

To estimate the economic impacts of spending by the entities identified in this research, we utilized the IMPLAN economic input-output model. The IMPLAN model provides estimates of the direct, indirect, and induced effects of spending related to businesses, agencies, and individuals (tourists and residents). The Appendix includes a detailed description of the IMPLAN model. Importantly, the IMPLAN model allows the analyst to use either sales measures or employment as model inputs, which is important when assessing the economic impacts of non-profit and government agencies. Even though an entity may be a non-profit, they hire employees, purchase materials and supplies, and engage in other spending that contributes to regional economic activity.

With the support of members of the Project Advisory Committee, we requested operations data reflecting organization spending and employment levels from Direct Organizations. Jobs counts were requested as both headcount and full-time-equivalent (FTE)[22] numbers. The IMPLAN model is based on headcount employment ratios for a given industry sector. However, since industry sector codes aggregate multiple activities, we checked to make sure that the IMPLAN assumption of the work load of a part time job matched with the organizations/industries included in this analysis. In a few instances, we made minor adjustments to the employment counts used as inputs into the economic model. For those organizations that did not respond to our data request, we gathered estimates of headcount employment by referring to staff listings on organizational websites. It is likely that this approach could have missed some employees,[23] suggesting that our estimates may understate total economic activity attributable to these organizations.

[22]Full-time-equivalent employment adjusts for part-time workers as is based on a total of 2,080 work hours per year. Four (4) workers each with half-time (20-hours per week) positions, for example, would be equal to two (2) FTEs. A tourism company that has 16 employees, but only operates during summer months (one-quarter of the year), could report four (4) FTE jobs.

[23]For example, an eco-tourism company will usually list the company owner/manager and provide information on individual tour guides on its website, but may not show information on an office worker.

Organizations directly involved in activities related to, or caused by, land conservation on the Eastern Shore collectively created 160 direct jobs in 2016. The economic activity related to this direct employment generated almost $21.9 million in regional economic output, boosted area value added by $8.8 million, and supported a total of 226 jobs paying $6.4 million in salaries, wages, and benefits (see Table 4-1). Local governments received an estimated $355,000 in revenues associated with this economic activity.

Table 4 - 1: The Economic Impacts of Direct Organization Spending, 2016

Description	Impact
Output (economic activity)	$ 21,876,000
Value Added (gross regional product)	$ 8,755,000
Labor Income (salaries, wages, benefits)	$ 6,374,000
Jobs (headcount)	226
Local Taxes	$ 355,000
State Taxes	$ 329,000

Sources: Organization data, IMPLAN, Center for Regional Analysis

Economic Impacts of Supported Industries

As described above, the following reports our estimates of the economic impacts of industries that are supported by the benefits of conserved lands on the Easter Shore. We report separate impacts for aquaculture industries and spending related to outdoor recreation and entertainment tourism.

Aquaculture Industries

Land conservation has a widely recognized positive impact on water quality. On the Eastern Shore, the improvements in water quality over the past several years associated with land conservation, Chesapeake Bay clean-up efforts, and other related activities has allowed a robust redevelopment of aquaculture industries, particularly commercial oyster fisheries. In this analysis, we include four industry sectors in aquaculture: shellfish farming, shellfish fishing, finfish fishing, and other marine fishing. According to Chmura Economics' JobsEQ database, there were 445 jobs in these industries in 2016 on the Eastern Shore. Using this employment as out data input in the IMPLAN model, we estimate that the aquaculture industry on the Eastern Shore generates over $156 million in annual economic activity that boosts area value added by $114 million and supports a total of 635 regional jobs paying in excess of $32 million in salaries, wages, and benefits (see Table 4-2). Eastern Shore taxing jurisdictions gained $3.7 million in annual revenue from this industry.

Table 4 - 2: The Economic Impacts of Aquaculture Industries, 2016

Description	Impact
Output (economic activity)	$ 156,703,000
Value Added (gross regional product)	$ 114,432,000
Labor Income (salaries, wages, benefits)	$ 32,349,000
Jobs (headcount)	635
Local Taxes	$ 3,720,000
State Taxes	$ 2,930,000

Sources: JobsEQ, IMPLAN, Center for Regional Analysis

Tourism Spending

In previous studies conducted for the State Office of Tourism and the Chincoteague National Wildlife Refuge (CNWR), visitor spending is shown to have impressive impacts on the Eastern Shore economy. However, neither the State tourism office analysis nor the CNWR study provide data in such a way that allows us to extrapolate the economic impacts of tourism activities associated with conserved lands on the Eastern Shore. Therefore, we combined information from previous research with our own approach for this analysis. As will be shown below, compared to the CNWR study,[24] our analysis produced economic impact estimates that are more conservative in nature. Effectively, we can interpret our findings as being a lower bound of possible economic impacts.

Based on data from the State tourism office, visitors to the Eastern Shore citing their primary trip purpose as outdoor recreation (7 percent) or entertainment/sightseeing (28 percent) totaled 35 percent of all visitors. The largest share of visitors are coming to the Eastern Shore to visit family or friends. State estimates of visitor spending by type of spending (lodging, food, shopping, and entertainment) are reported only as percentages of total spending by travel party. However, we used the State reported estimates to derive several data points including the total number of visitors to the Eastern Shore (612,176), number of travel parties (204,059), and total spending. We then separated total spending into key components and compared these spending estimates to other visitor spending surveys and our own experience in assessing the economic impact of tourist spending in other studies. We found the resulting spending estimates by category for food and beverage, shopping, food purchased at grocery stores, and entertainment spending to be reasonable. However, we chose not to include grocery spending and entertainment spending in this economic impact analysis.

Grocery spending is often most associated with travelers staying at RV parks or home rental units (condos, houses). Due to the dearth of grocery stores near recreation areas on the southern portion of the Eastern Shore, we have chosen to assume that a substantial share of area travelers actually bring their groceries from home. While this means we likely understate total tourist spending, we feel this approach is a reasonable assumption given the structure of the Eastern Shore economy. We also chose not to include entertainment spending. This spending category includes admission fees paid for a wide variety of venues. It explicitly includes entry fees paid

[24] The public draft version of the CNWR economic impact analysis can be downloaded from: https://www.fws.gov/uploadedFiles/Appendix%20M_CHN%20Draft%20CCPEIS.pdf

to park and recreation areas, as well as fees paid to adventure tour guides, both of which are captured in our estimates of the economic impacts of Direct Organizations. Again, we almost certainly are not including legitimate spending at venues and tour operators not included in our Direct Organization category; therefore, our estimated impacts are conservative. There was one industry where we decided to take a completely different approach for estimating visitor spending – lodging.

Estimates provided by Virginia's tourism agency suggest that per party spending for lodging totals $58.50 per party, per trip. That strikes us as unreasonably low and is likely an artifact of the number of visitors that stay with family and friends during their trips to the Eastern Shore. Therefore, we used the employment estimates from JobsEQ for hotels and RV parks, adjusted for the percentage of travelers visiting for outdoor recreation or entertainment/sightseeing purposes, to estimate the portion of the lodging sector's revenue associated with land conservation.

We estimate that tourism spending associated with conserved lands on the Eastern Shore totaled about $39.3 million in 2016. This spending generated $51.4 million in regional economic activity, increased gross regional product by $26.3 million, boosted labor income by almost $12.5 million, and support 655 jobs (see Table 4-3). Local taxing jurisdictions received more than $2 million in indirect taxes from these economic activities. Based on the methodology employed in this analysis, we are confident that the impacts of visitor spending associated with conserved lands on the Eastern Shore are ***at least*** the values shown in Table 4-3. It is likely that the economic impacts of this tourism spending are substantially larger.

Table 4 - 3: The Economic Impacts of Visitor Spending, 2016

Description	Impact
Output (economic activity)	$ 51,375,000
Value Added (gross regional product)	$ 26,348,000
Labor Income (salaries, wages, benefits)	$ 12,464,000
Jobs (headcount)	655
Local Taxes	$ 2,193,000
State Taxes	$ 1,396,000

Sources: Virginia Tourism, JobsEQ, IMPLAN, Center for Regional Analysis

5. Documentation of Available Datasets Used by Local Conservation Entities

Existing studies relevant to the economic and fiscal impact effects of conserved land, conservation easements, open land, and undeveloped land were reviewed. The strengths and weaknesses in the methodology employed in the literature that was reviewed were identified and are summarized in this section. The authors of this report (and their research team) reviewed the relevant studies. Unfortunately, there were no readily available data in these studies that could be directly applied to this study, simply because the scope-of-work for this study (the economic and fiscal impacts of conserved land on the Eastern Shore of Virginia) is unique. However, the various findings reported in the literature reviewed suggest that the

estimates (computed by Clower and Bellas) of the economic and fiscal impacts associated with conserved land and conservation easements on the Eastern Shore of Virginia are likely to be conservative (i.e., understated). Therefore, the authors of this report can say with confidence that the economic and fiscal impact findings shown in this report can be considered as the minimum baseline for additional research in the future.

Literature Review – Economic Impact Studies

The Trust for Public Land (2016, page 8) analyzed the total amount of State of Virginia funding to acquire land for conservation between 1999 and 2014. During this 15-year period, 89,400 acres were conserved[25] using $119 million in State funds. In Table 5-1, the break-down of this funding by year and the amount of acres conserved annually are shown.

From the data presented in Table 5-1, the Trust for Public Land estimated the present value of this historical spending by the State to equal $173 million. They then estimated the economic value of natural goods and services generated by these lands both historically (1999-2014) and projected ten years into the future (2015 – 2024). From these estimates, they found that for every $1 invested in conserving land, the State of Virginia received a return of $4 in economic value. (Trust for Public Land 2016, page 12). The Trust for Public Land calculated that an average of 10,500 acres were conserved annually between 1999 and 2014, and that an average of $14,000,000 in State of Virginia funding was spent annually during this same time period to conserve this land.[26]

According to a study prepared by the Virginia Institute of Marine Science (VIMS), the total economic impact of economic activity associated with the shellfish aquaculture and commercial fishing industries in Northampton County was $97.4 million in 2013. Of this $97.4 million in total economic output, VIMS estimated that $90.8 million (or 93.2 percent) was associated with the shellfish aquaculture industry and $6.6 million (or 6.8 percent) was associated with the commercial fishing industry. The total full-time equivalent employment (both direct and indirect) from both of these industries was estimated to be 987 workers with payroll-related incomes estimated to be $27.1 million. (Murry 2014, 3). Findings from the surveys conducted by Murry indicate that over $36.7 million in clam and oyster sales occurred from shellfish farms in Northampton County in 2013, and that "overall clam and oyster sales bring economic growth to the eastern shore and the State as growers report that 86% of shellfish cultured locally are sold to out of State buyers." (Murry 2014, 4).

Rephann (2013, page 32, Table 3.2) estimates that $69.599 billion in total economic output (direct, indirect and induced) occurred in the State of Virginia from the agriculture and forestry-related industries in 2011. Of this $69.599 billion in total economic output, Rephann estimates that $1.003 billion (or 1.44 percent) occurred in Accomack County, and $179.4

[25]According to the Trust for Public Land (2016, page 8), this includes conservation easements and fee simple acquisitions.

[26]The authors of this study could not replicate these findings. Based on the data shown in Table 5-1, we calculate that an average of $7,437,500 was spent annually to acquire or conserve 5,587.5 acres annually.

million or about one-quarter of one-percent (0.0026 percent) occurred in Northampton County that year. (Rephann 2013, page 72, Table D.1).[27]

Table 5 - 1: State of Virginia Funding for Land Conservation (1999 – 2014)

Year	Acres[1,2]	State Funding[2]
1999	703	$ 12,500
2000	1,660	$ 3,610,000
2001	9,600	$ 4,400,000
2002	1,820	$ 1,030,000
2003	396	$ 312,000
2004	3,310	$ 5,130,000
2005	9,730	$ 10,700,000
2006	5,200	$ 15,800,000
2007	2,220	$ 3,360,000
2008	6,670	$ 12,200,000
2009	18,600	$ 35,000,000
2010	13,500	$ 17,400,000
2011	6,340	$ 4,700,000
2012	6,230	$ 3,130,000
2013	2,170	$ 1,760,000
2014	1,200	$ 823,000
Total	89,400	$ 119,000,000
Average	10,500	$ 14,000,000

Source: The Trust for Public Land (2016, page 8)

Notes:

[1] At the time of this analysis, comprehensive data were not available for the Virginia Department of Historic Resources (DHR) or the Virginia Outdoors Foundation (VOF). Information on purchases of land or conservation easements using state dollars was not available; as a result, land protection projects for DHR and VOF are not included in this analysis.

[2] All numbers reported in this table are rounded to three significant digits. Because of rounding, some figures in this table may appear not to sum.

[27]This version of the Rephann (2013) report includes the corrections made to Table D.1 on September 18, 2013.

Carver and Laughland (2016) analyzed the economic benefits to local communities from visitors to selected National Wildlife Refuge areas owned and maintained by the U.S. Fish & Wildlife Service. Twenty-one national wildlife refuge areas were analyzed. Of these twenty-one national wildlife refuge areas, two were locate in the Northeast (Maine and New Jersey), ten were in the South (Florida [2], Georgia, Kentucky, Louisiana, Oklahoma [2], and Texas [3]), five were in the Mid-West (Iowa, Michigan [2], Minnesota, and North Dakota), and the remaining four were in the West (Alaska, California, Colorado, and Utah).[28]

While Carver and Laughland acknowledge that "[a]s land is preserved in its natural state, a refuge provides services to the ecosystem of which it is a part," their economic impact analysis report "focuses on only two of the values generated by refuges: how local employment and income are impacted by (1) recreational visitors and (2) Service budgets." (page 1). Furthermore, Carver and Laughland define "ecotourism" as "[t]ravel to participate in non-consumptive uses of the natural environment." (page 1).

The economic impact estimates for the twenty-one refuges analyzed were based on 2012 IMPLAN data. Their findings were adjusted to 2015 dollars. Carver and Laughland used data from the 2011 National Survey of Fishing, Hunting and Wildlife Associated Recreation (NSFHWR). This survey is conducted every five (5) years by the U.S. Fish and Wildlife Service. *Most importantly*, "information on refuge visitors concerning trip destinations or the primary purpose of the trip [was] not currently available." (Carver and Laughland 2016, page 101). Of the twenty-one refuges studied, the authors found that the multiplier for final demand ranged from a low of 1.16 in Utah to a high of 1.53 in Iowa. The multiplier for payroll-related job income ranged from a low of 0.30 in Utah to a high of 0.83 in Alaska. The multiplier for jobs created ranged from a low of 7.0 jobs per $1.0 million of output in California to a high of 18.2 per $1.0 million in Iowa. Nationally, for all refuges across the United States, the authors estimated that the multiplier for final demand was 1.97, the multiplier for payroll-related job income was 0.68, and the multiplier for jobs created was 12.9 per $1.0 million of output.

In an economic impact study prepared in September of 2007 by Carver and Caudill, the economic impact of visitors to the Chincoteague National Wildlife Refuge and to the Eastern Shore of Virginia National Wildlife Refuge were estimated. The authors found that 7,337,494 total recreation visits occurred at the Chincoteague NWR in 2006 for non-consumptive purposes.[29] Non-consumptive purposes were defined as visits for nature trails, observation platforms, birding, other wildlife observation, beach/water use, and other recreation. (Carver and Caudill 2007, page 211, Table 5-12). Total visitor recreation expenditures for non-consumptive purposes were estimated to be $233,273,900 in 2006, or $31.79 per visit. The authors estimated that 89 percent of these visits were made by non-residents. Total non-consumptive expenditures by non-residents were estimated to be $34.83 per visit.

Carver and Caudill also examined the economic impact of visitors to the Eastern Shore of Virginia NWR in 2006. The authors found that 28,862 total recreation visits occurred at this

[28]Geographic regions as defined by the U.S. Census Bureau as of 2010.
[29]The term "Visits" includes both one-time visitors and repeat visitors.

refuge for non-consumptive purposes. Total visitor recreation expenditures for non-consumptive purposes were estimated to be $293,930 in 2006, or $10.18 per visit. The authors estimated that 95 percent of these visits were made by non-residents. (Carver and Caudill 2007, page 219, Table 5-22). Total non-consumptive expenditures by non-residents were estimated to be $10.60 per visit.

Fiscal Impact Analysis – An Overview

The purpose of fiscal impact analysis studies is three-fold. First, these studies attempt to quantify public revenues (both annual operating revenues and annual revenues from capital assets). Second, these studies attempt to calculate the demand for public services (both annual operating expenditures to provide public services to residents, businesses and their workers, government employees, visitors and tourists, and the annual expenditures required to maintain capital assets). Finally, the net fiscal surplus (*benefit*) or net fiscal deficit (*burden*) on the annual budget of local jurisdictions are determined.

An extensive literature review in the field of fiscal impact analysis reveals that fiscal impact models developed over the past 85-90 years have up to eleven methodological weaknesses inherent in their underlying assumptions and model construction. These eleven major shortcomings include the following (Bellas 2005):

1. "They fail to adequately allocate the generation of local revenues between people (existing residents and newcomers) and workers (jobs filled by residents and by commuters);

2. They fail to adequately allocate the beneficiaries of local expenditures between people (existing residents and newcomers) and workers (jobs filled by residents and by commuters);

3. They fail to adequately distribute the sources of revenues by various land use types (e.g., single family detached, single family attached, multifamily, retail, office, industrial and manufacturing, agricultural and conserved land, government uses);

4. They fail to adequately distribute service level expenditures by land-use type;

5. The fail to adequately estimate the revenues generated and the services demanded by land-use sub-sector. Examples of these sub-sectors include:

    a. Revenues generated and services demanded by visitors conducting business and tourists;
    b. Revenues (direct and indirect) generated and services demanded by governmental entities (federal, state and local) and from non-profit (tax-exempt) institutions; and
    c. Revenues generated and services demanded by limited land-users, such as residents who own seasonal or vacation housing or

university students who place limited demands on public services yet spend dollars in the local economy.

6. They fail to adequately differentiate between the capital expenditures required to build public infrastructure (e.g., roads, schools, playgrounds) and the repayment of the bonds (debt service) required to finance these public infrastructure improvements;

7. They fail to adequately identify the relationship between new and existing residential land uses and residentially associated retail and non-retail service sector land uses and employment;

8. They often incorrectly mix some aspects of average costing and marginal costing techniques in the analysis, resulting in a mixed interpretation of the findings;

9. They lack the ability to determine whether per capita levels-of-service provided by local governments are decreasing because local governments provide services more efficiently over time or increasing because excess revenues from new development allows local governments (especially rural governments) to provide more urbanized public services;

10. They fail to calculate the cross-over point from where residential land uses switch from generating a net fiscal deficit to a net fiscal surplus for various land-use types (the break-even point by type of land-use). Fiscal impact analyses for a site-specific project tend to calculate the break-even point but fiscal impact models designed to calculate the fiscal impact of the comprehensive plan fail to calculate the cross-over point where the revenues from new development offset revenues from existing development; and

11. They have limited dynamic features in their design and construction. There are limits to their functional capability to conduct sensitivity analysis on the independent variables. They lack the ability to forecast fiscal revenues and expenditures from existing development and new growth.

A consistent, underlying theme in fiscal impact analysis is the failure to address non-property tax revenues generated by residents (both existing and new) and expenditures (for services) demanded by non-residential land uses."

The studies in the literature on the fiscal impacts of conserved land and conservation easements reviewed in this section contain some or all of the inherent weaknesses described in items #1 through #11 listed above. Notwithstanding these deficiencies, the studies reviewed for this section were both beneficial and insightful, providing guidance in how to calculate the fiscal impact estimates derived in section six of this report.

Literature Review – Fiscal Impact Studies

The American Farmland Trust (1999, 9) found that for every $1.00 in revenues received in Northampton County in FY 1998, farm land and open space required only $0.23 in public services. This organization conducted additional cost of services studies in Augusta County, Bedford County, Clarke County, Culpepper County, and Frederick County, all in Virginia, between 1994 and 2005. They found that in these counties, the cost of public services ranged from a low of $0.15 in Clarke County to a high of $0.80 in August County for every $1.00 in taxes paid to those counties (American Farmland Trust 2010, 5).

The American Farmland Trust has replicated their study in various states across the country. As will be discussed in section six of this report, the fiscal impact model utilized in this report by the GMU/UAI research team produces outputs that are fiscally more conservative than the model employed by the American Farmland Trust as well as by other researchers. In section six, the findings shown in Table 6-1 by the GMU/UAI team indicate that for every $1.00 in revenues received in Northampton County in FY 2016, farm land and land with conservation easements required $0.87 in public services. For Accomack County, the GMU/UAI research team found that for every $1.00 in public revenues received in FY 2016, these lands required $0.42 in public services.

The reasons why the model that the GMU/UAI team used produces more conservative estimates are explained in the previous section on the overview of fiscal impact models and analyses. The fiscal impact model that we used corrects for the weaknesses typically found in other fiscal impact models. Other fiscal impact models generally tend to overstate public revenues and understate expenditures for public services.

Datasets Used by Local Conservation Entities

Representatives of the organizational members of the Southern Tip Partnership (STP) prepared summaries of each organization's mission and the criteria that each organization uses for identifying land for potential future conservation. The list of STP members and the location of each organization's summary (in the Appendix section of this report) are shown in Table 5-2. According to the STP, the purpose of these summaries is to improve the current "understanding of each organization's [conservation target identification] process, and [to] discuss how [each organization] can work together better."[30]

[30]Southern Tip Partnership. "Organization Conservation Target Identification Processes." March 29, 2017, page 1.

Table 5 - 2: Conservation Target Identification Process

No.	Organization	Process[1]
1	Accomack-Northampton Planning District Commission	See Appendix Table D-1
2	Department of Conservation and Recreation - Natural Heritage Program	See Appendix Table D-2
3	Department of Environmental Quality - Coastal Zone Management Program	See Appendix Table D-3
4	Department of Game and Inland Fisheries	See Appendix Table D-4
5	Ducks Unlimited	See Appendix Table D-5
6	Natural Resources Conservation Service - Accomac	See Appendix Table D-6
7	The Nature Conservancy - Virginia Coast Reserve	See Appendix Table D-7
8	U.S. Fish and Wildlife Service - Eastern Shore of Virginia National Wildlife Refuge	See Appendix Table D-8
9	Virginia's Eastern Shore Land Trust	See Appendix Table D-9

Source : Southern Tip Partnership. "Organization Conservation Target Identificaton Processes." March 29, 2017

Note :

[1] The exact descriptions shown in Appendix Tables D-1 through D-9 were provided to the authors of this report.

Rather than summarize the process used by each STP member organization (and run the risk of misstating the role and function of each member organization), the *exact* summaries provided (to the authors of this report) are listed in Appendix Tables D-1 through D-9. Each organizational entity employs a different process to identify conserved land and to meet their conservation targets. According to the Accomack – Northampton Planning District Commission, for example:

> "[f]uture conservation of properties by the STP are preferable where and when discussions occur proactively between local governments and conservation groups and are completed in a manner that both provides benefits from conservation of habitat and advances the region's thriving outdoor recreational and nature-based activities that enhance the quality of life and provide additional opportunities for activities for both residents and visitors."[31]

The Virginia Department of Game and Inland Fisheries (VAGIF) has a multi-level screening process starting with an administrative review, followed by a field review (with a scoring range of 0-5 points for each criterion), and then onto a series of Level 3 further investigations.[32] The summaries provided in Appendix Tables D-1 through D-9 also provide a succinct and clear overview of the mission and function of each organization.

[31]Appendix Table D-1.
[32]Appendix Table D-4.

In Appendix Table D-10, a matrix of STP member organizations (the vertical axis) is compared to the conservation priorities (the horizontal axis) that each organization uses to help them determine elements of the conservation process. Fifteen conservation elements are listed as priorities, ranging from the conservation of rare and endangered species to shorebirds, land birds, habitat restoration, and so forth. Only three entities (NRCS – Eastern Shore, The Nature Conservancy – Virginia Coast Reserve, and the Virginia Eastern Shore Land Trust) list conserving farmland as one of their priorities.

6. Determine the Overall Net Benefits and Costs of all Conserved Land

Introduction

In section three, data were identified and gathered from Accomack and Northampton counties regarding conservation easements, conserved land, and tax-exempt properties. Real estate tax assessment rolls in each county were examined. In this section the comprehensive annual financial report (CAFR) for each county was reviewed.[33] All operating revenues (not just real estate taxes) generated in each county as reported in the CAFR of each county by type of revenue and source of revenue was identified, analyzed and quantified. All operating expenditures (the cost of providing public services) in each county were also identified, analyzed and quantified. The net fiscal impact of any benefit (surplus) or cost (deficit) of all conserved land was estimated.

A two-step analysis was conducted to identify and quantify the benefits and costs of all land uses (including conserved land and conservation easements) and to discern how these benefits or costs accrue to either Accomack County or Northampton County. Land-use multipliers for public operating revenues (taxes and non-tax charges and fees) and expenditures (the cost to provide public services) were developed and localized to each county. These multipliers were then applied to the conservation easements and conserved land to isolate and quantify the net fiscal impact from that land.

Fiscal Impact Model

There are two computational functions of the fiscal impact model. The first function is to calculate the estimated operating expenditure demand that residential and non-residential land uses place on the operating budget of Accomack and Northampton counties. The second function is to calculate the estimated operating revenues that will be generated by residential and non-residential land uses in each county. The fiscal impact analysis reflects the increases in fiscal revenues that will be generated by existing and new residents, workers, visitors, tourists, and associated land uses in each county minus the increases in expenditures required to provide public services to existing and new residents, workers, visitors, tourists, and

[33]The CAFR is the independently audited financial report that each county and city in Virginia prepares at the end of every fiscal year. The financial data reported in the CAFR reflect actual revenues and expenditures compared to the annual budget document which reports estimated fiscal revenues and expenditures for the next year's budget. In fiscal impact analysis the use of actual financial data reported in the CAFR is the *preferred* data set over the use of budgeted financial data.

associated land uses in each county. These revenue and expenditure flows are different for each type of land use (existing and new development) in each county.

In order to accurately measure these distinct fiscal flows, a fiscal impact model was developed that allocates local revenues and expenditures by land use type including distributions across different types of residential and non-residential land uses. Accomack County's actual revenues and expenditures for FY 2016 as well as the allocation factors and the contribution margin of each line-item category of revenues and expenditures are shown in Appendix Tables B-1 and B-2. Northampton County's actual revenues and expenditures for FY2016 are shown in Appendix Tables B-5 and B-6.

The allocation factors calculated for each county are based on a detailed analysis of each county's data provided by the various departments and agencies in each county. For example, in Appendix Table B-1, a detailed analysis of revenues from personal property taxes in Accomack County indicated that 41.7 percent of these revenues were generated by the occupants of residential land uses while the remaining 58.3 percent were generated by workers associated with non-residential land uses. Likewise, this same detailed level of analysis was performed for the various uses of expenditures in each county. For example, in Appendix Table B-2, an analysis of community development expenditures in Accomack County indicated that 49.7 percent of these expenditures were attributed to providing services to the residential sector and 50.3 percent to the non-residential sector. For public education services, 100 percent of these costs were allocated to the residential sector. Allocating 100 percent of public education costs to the residential sector is the standard convention in fiscal impact modeling, although an argument can be made that local businesses benefit from employees who receive public education services and graduate from local public schools; thus, some percentage of these services should be borne by the non-residential sector.

A comparison of the allocation factors for Accomack County and Northampton County reveal that these factors are different for different line-item categories. This is to be expected as each county and city in Virginia provides public services differently (not the type of service but how it is provided) when converted to dollars expended and measured on a per-capita or per-job basis. Likewise, revenues received in each county and city in Virginia are based on a number of factors, such as tax rates, assessed values, the number of real estate properties on the land book, et cetera.

Findings from the Fiscal Impact Model

The findings from the fiscal impact model can provide decision makers in Accomack County, Northampton County, and the State of Virginia with land-use specific assessments for alternative development scenarios spanning twenty years. The fiscal model disaggregates each county's operating revenues and expenditures into eight land use categories. The results of this analysis provide the fiscal baseline against which any future development policy, strategy, plan, or project approval can be tested. Consequently, the fiscal baseline that is reported herein provides local and state government officials and others involved in the economic development process the starting point for asking and deriving answers to critical questions about the future of land-use in both Accomack and Northampton counties.

For the model's application in Accomack County and Northampton County, the results of which are reported in the following pages, the fiscal model was calibrated to reflect the expenditure and revenue patterns documented in each county's Comprehensive Annual Financial Report (CAFR) as of the fiscal year end 2016. Audited revenue and expenditure data are preferred to budgeted data as the former provide an accurate accounting for what was spent, how it was spent, and where the revenues originated to fund this spending. Annual debt service payments to fund capital improvements in each county are included in the model. Each county's fiscal landscape for 2016 provided the baseline for forecasting revenue and expenditure growth over the next twenty years.

The fiscal impact analyses in this report reflect 2016 real dollar values, fiscal year end 2016 tax rates, 2016 operating revenues, and 2016 levels-of-service for operating expenditures as reported by Accomack County and Northampton County. If these current levels-of-service (LOS) for operating expenditures (the cost of public services on a per-capita or per-job basis) are changed in future years, then the estimated net fiscal impact for each category of land-use would also change. For the purpose of this analysis, all of these current operating levels-of-service are held constant and this provides an accurate portrayal of the estimated fiscal impacts that the various land-uses would have demanded on either Accomack County or Northampton County as of the end of fiscal year 2016. The results from the fiscal impact model for each county is referred to as "the baseline analysis" and are summarized separately for each county.

Fiscal Impact Findings – Accomack County

Operating revenues by source of revenue as of the end of fiscal year 2016 for Accomack County are shown in Appendix Table B-1. In FY2016, Accomack County collected $48,917,418 in general fund and major fund operating revenues. Of these $48,917,418 in operating revenues, it is estimated that $31,305,802 or (64.00 percent) came from the residential sector in the County, and the remaining $17,611,616 (or 36.00 percent) came from the non-residential sector.

Operating expenditures by use (the cost to provide public services to residents, businesses and their workers, visitors, and tourists to the County) as of the end of fiscal year 2016 in Accomack County are presented in Appendix Table B-2. In FY2016, Accomack County spent $48,566,943 to provide public services in the County. Of these $48,566,943 in operating expenditures, $40,782,726 (or 83.97 percent) are estimated to have been spent on public services to meet the needs of the residents of the County, and the remaining $7,784,217 (or 16.03 percent) were spent to meet the needs of local businesses and their workers, visitors, and tourists to the County. The County reported a net surplus (revenues greater than expenditures) of $350,475 at the end of FY2016.

Fiscal Impact Findings – Northampton County

Operating revenues by source of revenue as of the end of fiscal year 2016 for Northampton County are shown in Appendix Table B-5. In FY2016, Northampton County collected $29,386,873 in general fund and major fund operating revenues. Of these $29,386,873 in operating revenues, it is estimated that $23,412,809 or 79.67 percent) came from the residential

sector in the County, and the remaining $5,974,064 (or 20.33 percent) came from the non-residential sector.

Operating expenditures by use (the cost to provide public services to residents, businesses and their workers, visitors, and tourists to the County) as of the end of fiscal year 2016 in Northampton County are presented in Appendix Table B-6. In FY2016, Northampton County spent $28,151,875 to provide public services in the County. Of these $28,151,875 in operating expenditures, $23,304,484 (or 82.78 percent) are estimated to have been spent on public services to meet the needs of the residents of the County, and the remaining $4,847,391 (or 17.22 percent) were spent to meet the needs of local businesses and their workers, visitors, and tourists to the County. The County reported a net surplus (revenues greater than expenditures) of $1,234,998 at the end of FY2016.

Net Fiscal Impact Findings – Both Counties

As previously discussed, the fiscal model disaggregates each county's operating revenues and expenditures into seven land-use categories. One category is conservation easements. The findings from this land-use category for both counties is shown in Table 6-1. Real estate tax revenues, local sales and uses taxes, and hotel and motel taxes were calculated and compared against four categories of public service expenditures: general government administration; public safety; public works; and parks, recreation and culture. Local sales and uses taxes and hotel and motel taxes were included to account for spending from visitors and tourists to the Eastern Shore. The findings of this fiscal impact analysis are presented in Table 6-1.

For every $1.00 spent in Accomack County annually to provide public services to support land with conservation easements, public revenues to Accomack County were estimated to be $2.38. In Northampton County, for every $1.00 spent annually in the provision of public services to support land with conservation easements, revenues to Northampton County were estimated to be $1.15. The findings of the fiscal impact model indicate that lands with conservation easements do <u>not</u> place a fiscal burden on either county.

The American Farmland Trust (1999, 9) found that for every $1.00 in revenues received in Northampton County in FY 1998, the County spent $0.23 in public services. The fiscal impact model utilized by the GMU/UAI research team produces outputs that are fiscally more conservative than the model employed by the American Farmland Trust. The findings shown in Table 6-1 indicate that for every $1.00 in revenues received in Northampton County in FY 2016, land with conservation easements required $0.87 in public services. For Accomack County, the GMU/UAI research team found that for every $1.00 in public revenues received in FY 2016, these lands required $0.42 in public services. The reasons why the model that the GMU/UAI team used produces more conservative estimates are explained in section five on the overview of fiscal impact models and analyses. The fiscal impact model that we used corrects for the weaknesses typically found in other fiscal impact models. Other fiscal impact models generally tend to overstate public revenues and understate expenditures for public services.

Table 6 - 1: Net Fiscal Impact Findings – Both Counties

Fiscal Year End 2016

Jurisdiction		Findings
Accomack County		
Revenues	$	2.38
Expenditures	$	1.00
Net Fiscal Impact[2]	$	1.38
Inverse[3]		
Revenues	$	1.00
Expenditures	$	0.42
Northampton County		
Revenues	$	1.15
Expenditures	$	1.00
Net Fiscal Impact[2]	$	0.15
Inverse[3]		
Revenues	$	1.00
Expenditures	$	0.87

Source: The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Notes:

[1] The findings shown under *Inverse* are for comparison purposes only to the American Farmland Trust studies.

7. Discussion of Additional Fee Simple or Conservation Acquisition

In Appendix Table B-3, a twenty-year forecast of revenues by source in Accomack County is presented. Using annual estimates of population, household and employment growth produced by Woods and Poole Economics in Washington, DC, the operating revenues shown in Appendix Table B-1 were forecast to 2036 in five-year increments. In Appendix Table B-4, this same twenty-year forecast was prepared for operating expenditures by use. The summary of the twenty-year forecast is shown at the bottom of this table and also in Table 7-1.

Table 7 - 1: 20-Year Fiscal Forecast – Accomack County, Virginia

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Summary					
Total Projected Revenues	$48,917	$50,635	$52,322	$53,908	$55,348
Total Projected Expenditures	$48,567	$49,835	$51,072	$52,211	$53,165
Net Projected Surplus (Deficit)	$350	$799	$1,250	$1,697	$2,183

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Based on the County's current pattern of revenues generated and expenditures for public services, it is estimated that Accomack County will experience a modest annual surplus of revenues over expenditures each year over the next twenty-years. Included in this annual surplus is the foregone real estate tax revenues from conserved land and other tax-exempt properties. In other words, notwithstanding the estimated foregone tax revenues shown in Table 3-4, the County is estimated to experience a net fiscal surplus each year for the next twenty years. The acquisition of additional fee simple or conservation easement land will not affect this annual surplus unless the County elects to change the current (FY2016) levels-of-service (LOS) that it provides to residents, businesses and their workers, visitors, and tourists to the County in the future.

In Appendix Table B-7, a twenty-year forecast of revenues by source in Northampton County is presented. Using annual estimates of population, household and employment growth produced by Woods and Poole Economics in Washington, DC, the operating revenues shown in Appendix Table B-5 were forecast to 2036 in five-year increments. In Appendix Table B-8, this same twenty-year forecast was prepared for operating expenditures by use. The summary of the twenty-year forecast is shown at the bottom of this table and also in Table 7-2.

Table 7 - 2: 20-Year Fiscal Forecast – Northampton County, Virginia

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Summary					
Total Projected Revenues	$29,387	$29,553	$29,700	$29,798	$29,790
Total Projected Expenditures	$28,152	$28,268	$28,364	$28,411	$28,354
Net Projected Surplus (Deficit)	$1,235	$1,285	$1,336	$1,387	$1,436

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Based on the County's current pattern of revenues generated and expenditures for public services, it is estimated that Northampton County will experience a modest annual surplus of

revenues over expenditures each year over the next twenty-years. Included in this annual surplus is the foregone real estate tax revenues from conserved land and other tax-exempt properties. In other words, notwithstanding the estimated foregone tax revenues shown in Table 3-6, the County is estimated to experience a net fiscal surplus each year for the next twenty years.

The acquisition of additional fee simple or conservation easement land will not affect this annual surplus unless Northampton County elects to change the current (FY2016) levels-of-service (LOS) that it provides to residents, businesses and their workers, visitors, and tourists to the County in the future.

Appendix

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Methodology

Economic Impact Model

In performing this analysis, we relied on the IMPLAN economic input-output model developed by MIG, Inc. The IMPLAN model was originally developed under contract to the U.S. Forest Service as a way to value the economic activity of forest industries. Over the past 30+ years, the model has been expanded and enhanced and is now one of the most widely-used input-output models in academic and professional research. Economic input-output models provide estimates of how money flows through a designated regional economy. Our study area in this analysis is the combined region that includes Accomack and Northampton Counties in Virginia. These money flows are described as direct, indirect, and induced effects. Direct effects represent the spending of firms and organizations included in the analysis. For example, a company that is operating in the aquaculture industry purchases equipment, supplies, and hires workers. This could include water filtration systems. Indirect effects capture the economic activities at the direct firm's vendors and related supply chains. The water filter manufacturer buys silica and other filter components, purchases boxes to ship their products, and hires an accounting firm to do bookkeeping. The accounting firm, in turn, hires employees, rents office space and equipment, and hires a janitorial service to clean the office, and so on. Induced effects capture the economic activity associated with employees of the direct and indirect firms spending a portion of their earnings for goods and services in the regional economy. Importantly, at each stage of spending, the model adjusts for the likelihood that the spending will stay in the designated region. In our case, to our knowledge there are no water filtration manufacturers located on the Eastern Shore, so that spending is presumed to leave the local economy and not contribute to the overall regional economic impact.

The IMPLAN model provides estimates for output, value added, labor income, employment, and indirect taxes. Output is essentially a measure of business transactions.[34] Value Added is the regional equivalent of gross domestic product or gross state product and expresses the economic value of the goods and services delivered net of raw material costs. Labor Income is the total salaries, wages, and benefits paid to workers. Employment is the number of jobs expressed as headcount jobs. Indirect taxes capture the value of income taxes, sales taxes, property taxes, fees, and other sources of government revenue at the local, state, and federal levels. This approach recognizes the net effect of non-profit organizations to tax contributions.

Inputs for the IMPLAN model can include output (roughly sales) or employment. The model is based on national benchmark data developed by the U.S. Bureau of Economic Analysis from data gathered in the Economic Census, labor market surveys by the U.S. Department of Labor, and other sources. For any given industry, there are known relationships between revenue and employees (it takes a certain amount of revenue to support each job). Therefore, we can use the number of jobs to estimate direct industry output. This is an especially useful approach when the industries being examined include non-profit agencies. We used employment as the

[34]Output is technically measured in producer prices, so it is not exactly like looking at an accumulation of sales receipts but it is a conceptually accurate way to think of what Output means.

input in this analysis as described in the section on the economic impact analysis. For clarity, those sections report total economic impacts. Detailed tables are available in the appendix to this report.

Fiscal Impact Model

The process of calculating the revenue and expenditure flows generated by the residential and non-residential land uses in Accomack County and in Northampton County involved formulating a fiscal model that allocates the operating revenues and expenditures of each county to their direct sources. The basis for this analysis was the Accomack County Comprehensive Annual Financial Report (CAFR) for fiscal year 2016, and the Northampton County Comprehensive Annual Financial Report (CAFR) for fiscal year 2016. Audited operating revenues and expenditures reported in these two documents were separated between (1) revenues generated by residential and non-residential sources and (2) expenditures demanded by use according to distributions developed from a detailed examination of each county's actual revenues and expenditures in fiscal year 2016. These distributions of fiscal revenues and expenditures were calibrated to the demographic and economic characteristics of Accomack County and Northampton County. The residential share of each category of county revenue and expenditures (that is, the portions generated by local residents as opposed to local business activities or which provide services to local residents as distinguished from local businesses) was converted to a per capita equivalent to facilitate the calculation of fiscal flows associated with each residential land use analyzed. The non-residential share of each category of county expenditures was converted to a per job equivalent to facilitate the calculation of non-residential fiscal flows from commercial development.

The approach to distributing operating expenditures assumes that each person living or working in either Accomack County or Northampton County has access to each respective county's services and therefore potentially shares from the benefits of these services. This cost or expenditure allocation is not based on the actual utilization of county services by specific individuals but rather reflects equal access to and availability of these services to all county residents and persons working in the county. Thus, the findings derived in this report are based on an analysis of average costs, not marginal costs. By using average cost and revenue multipliers in this analysis and not adjusting revenue sources and expenditure demands to reflect the income structure of future residents and workers to each county or the actual utilization rate of specific services, the actual revenue forecast is likely to be conservative and the actual demand for each county's services and programs may be overstated. However, in this analysis, where specific costs and revenues could be assigned based on actual use or values, these were calculated based on available data.

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6. United States Department of Agriculture – NRCS Accomac Service Center
7. United States Fish & Wildlife Service – Chincoteague National Wildlife Refuge
8. United States Fish & Wildlife Service – Fisherman Island National Wildlife Refuge
9. Virginia Department of Conservation and Recreation Division of Natural Heritage
10. Virginia Department of Conservation and Recreation Kiptopeke State Park
11. Virginia Department of Game and Inland Fisheries
12. Virginia Eastern Shore Land Trust
13. Virginia Institute of Marine Science Eastern Shore Laboratory

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Dr. Clower has authored or co-authored over 170 articles, book chapters, and research reports reflecting experience in economic and community development, economic and fiscal impact analysis, housing, transportation, land use planning, and economic forecasting. His scholarly articles have appeared in *Economic Development Quarterly*; *Urban Studies*; *Economic Development Review*; *Regional Studies, Regional Science*; the *Australasian Journal of Regional Studies*; *Regional Studies Regional Science*, *Sustaining Regions*; and *Applied Research in Economic Development*. He recently completed a term as regional (Americas) editor for the journal *Regional Science Policy and Practice*.

Dr. Clower received a B.S. in Marine Transportation from Texas A&M University in 1982, a M.S. in Applied Economics from the University of North Texas in 1992 and a Ph.D. in Information Sciences from the University of North Texas in 1997 specializing in information policy issues and the use of information resources.

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Dean D. Bellas, Ph.D., is president of Urban Analytics, Inc., an Alexandria, Virginia-based real estate and urban planning consulting firm providing urban development analytical services to public, private, and institutional – sector clients. Consulting services include fiscal and economic impact studies, market research analysis, real estate asset management, real estate development economics, project feasibility studies, and the analyses of public policy decisions. Since 1996, Dr. Bellas has provided consulting services in Arizona, California, Florida, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, New York, North Carolina, Oregon, Virginia, West Virginia, Wisconsin, and the District of Columbia. Dr. Bellas has analyzed the fiscal impact on over 96,000 residential units and over 38.7 million square feet of non-residential space. The total value of all land-uses analyzed is estimated to be over $27 billion. In addition, Dr. Bellas has authored or co-authored over 125 research reports on the fiscal and economic impacts of real estate development.

In addition to Urban Analytics, Dr. Bellas is an adjunct faculty member in the Real Estate program within the School of Continuing Studies at Georgetown University. He has previously

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Dr. Bellas received a Bachelor of Science in Business Administration from Western New England University with a concentration in Finance (1982), a Master of Urban and Regional Planning from the George Washington University (1993), and his Doctorate in Public Policy with a concentration in regional economic development policy at George Mason University (2005). His doctoral dissertation was entitled, *"Fiscal Impact Simulation Modeling: Calculating the Fiscal Impact of Development."* His research interests include regional and local developmental growth patterns, economic and fiscal impact effects of real estate development on municipal government, and economic development policy. Dr. Bellas is a member of the National Economists Club and Lambda Alpha International, an honorary society for the advancement of land economics. He is a full member of the Urban Land Institute. Dr. Bellas previously sat on ULI's national *Public Development and Infrastructure Council*. He currently sits on the regional ULI Baltimore-Washington, DC *Transit-Oriented Development (TOD) Council*, and locally on ULI's Washington District *Regionalism Initiatives Council*. Dr. Bellas was the economic advisor to the Southeast Fairfax Development Corporation Board of Directors in calendar year 2012. He was appointed to the Board of Directors for the 2013 – 2014 term by Supervisor Jeffrey C. McKay (Lee District, Fairfax County, Virginia).

Over the past twenty years, Dr. Bellas has provided expert testimony on the economic and fiscal impacts of proposed real estate development projects at public meetings and public hearings of planning commissions and county supervisors meetings, as well as at community outreach meetings.

Appendix Table A - 1: Economic Impacts of Direct Organizations

Impact Type	Output	Value Added	Labor Income	Employment	Implied Output Multiplier
Direct Effect	$ 14,623,063	$ 5,222,739	$ 4,335,459	160	
Indirect Effect	$ 4,634,565	$ 2,162,456	$ 1,378,611	42	0.31694
Induced Effect	$ 2,618,681	$ 1,370,183	$ 659,593	24	0.17908
Total Effect	$ 21,876,308	$ 8,755,379	$ 6,373,664	226	1.49601

Source: Director Organizations, IMPLAN, Center for Regional Analysis

Appendix Table A - 2: Economic Impacts of Aquaculture Industries

Impact Type	Output	Value Added	Labor Income	Employment	Implied Output Multiplier
Direct Effect	$ 133,156,023	$ 102,731,865	$ 26,580,330	439	
Indirect Effect	$ 10,280,128	$ 4,737,693	$ 2,584,087	73	0.07720
Induced Effect	$ 13,266,662	$ 6,962,875	$ 3,331,352	123	0.09963
Total Effect	$ 156,702,813	$ 114,432,434	$ 32,495,769	635	1.17684

Source: JobsEQ, IMPLAN, Center for Regional Analysis

Appendix Table A - 3: Economic Impacts of Visitor Spending

Impact Type	Output	Value Added	Labor Income	Employment	Implied Output Multiplier
Direct Effect	$ 39,312,724	$ 20,574,225	$ 9,382,390	549	
Indirect Effect	$ 6,941,820	$ 3,094,678	$ 1,791,324	59	0.17658
Induced Effect	$ 5,120,858	$ 2,679,387	$ 1,289,852	47	0.13026
Total Effect	$ 51,375,402	$ 26,348,290	$ 12,463,566	655	1.30684

Source: Virginia Tourism, JobsEQ, IMPLAN, Center for Regional Analysis

Appendix Table B - 1: Revenues by Source – Accomack County

FYE June 30, 2016

	Category	2016 Revenues [1]	Allocation Factor: Resident	Allocation Factor: Non-Res.	Contribution Margin: Residential		Contribution Margin: Non-Residential	
1	**Real Estate**							
	Residential	$12,379,051	100.0%	0.0%	$12,379,051	39.54%		
	Non-Residential	$6,707,117	0.0%	100.0%			$6,707,117	38.08%
2	**Personal Property Taxes**	$8,139,921	41.7%	58.3%	$3,391,091	10.83%	$4,748,830	26.96%
3	**Local Sales and Use Taxes**	$3,583,326	65.3%	34.7%	$2,340,629	7.48%	$1,242,697	7.06%
4	**Utility Taxes (Consumer)**	$1,069,085	62.0%	38.0%	$662,833	2.12%	$406,252	2.31%
5	**Hotel and Motel Taxes**	$594,173	0.0%	100.0%	$0	0.00%	$594,173	3.37%
6	**Other Local Taxes**	$2,137,956 [2]	62.3%	37.8%	$1,330,878	4.25%	$807,078	4.58%
7	**Permits, Fees & Licenses**	$345,515	73.3%	26.7%	$253,401	0.81%	$92,114	0.52%
8	**Fines & Forfeitures**	$54,318	64.5%	35.5%	$35,030	0.11%	$19,288	0.11%
9	**Revenues from Use of Money**	$327,321	64.5%	35.5%	$211,089	0.67%	$116,232	0.66%
10	**Charges for Services**	$509,555	69.3%	30.7%	$352,969	1.13%	$156,586	0.89%
11	**Miscellaneous & Recovered Costs**	$959,492	69.4%	30.6%	$666,079	2.13%	$293,413	1.67%
12	**Intergovernmental - Federal**	$3,124,536	66.3%	33.7%	$2,071,567	6.62%	$1,052,969	5.98%
13	**Intergovernmental - State**	$8,986,052	84.7%	15.3%	$7,611,186	24.31%	$1,374,866	7.81%
	Total	$48,917,418			$31,305,802	100.00%	$17,611,616	100.00%
					Contribution Margin:	64.00%		36.00%

Note:

1 Includes Major Funds only. Does not include Nonmajor Governmental Funds.

2 Net of Local Sales and Use Taxes, Utilities (Consumers) Taxes, and Hotel and Motel Taxes.

Source:

County of Accomack, Virginia Comprehensive Annual Financial Report (CAFR) for the FYE June 30, 2016

The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 2: Expenditures by Use – Accomack County

FYE June 30, 2016

	Category	2016 Expenditures [1]	Allocation Factor: Resident	Allocation Factor: Non-Res.	Contribution Margin: Resident		Contribution Margin: Non-Res.	
1	**General Government Administration**	$5,422,834 [2,5]	64.5%	35.5%	$3,497,186	8.58%	$1,925,648	24.74%
2	**Judicial Administration**	$1,494,505	75.4%	24.6%	$1,126,857	2.76%	$367,648	4.72%
3	**Public Safety**	$4,379,278 [4]	69.0%	31.0%	$3,021,264	7.41%	$1,358,014	17.45%
4	**Public Works**	$4,607,309 [5]	71.4%	28.6%	$3,291,001	8.07%	$1,316,308	16.91%
5	**Health and Welfare**	$5,993,022	94.1%	5.9%	$5,640,033	13.83%	$352,989	4.53%
6	**Parks, Recreation and Cultural**	$1,046,266	95.0%	5.0%	$993,953	2.44%	$52,313	0.67%
7	**Community Development**	$2,997,351 [5]	49.7%	50.3%	$1,489,683	3.65%	$1,507,668	19.37%
8	**Correction and Detention**	$2,347,086	61.5%	38.5%	$1,443,458	3.54%	$903,628	11.61%
9	**Education**	$20,279,292 [3,5]	100.0%	0.0%	$20,279,292	49.73%	$0	0.00%
	Total	$48,566,943			$40,782,726	100.00%	$7,784,217	100.00%
					Contribution Margin:	83.97%		16.03%

Summary						
Total Revenues	$48,917,418	100.00%	$31,305,802	64.00%	$17,611,616	36.00%
Total Expenditures	$48,566,943	100.00%	$40,782,726	83.97%	$7,784,217	16.03%
Net Surplus (Deficit)	$350,475	0.00%	($9,476,924)	-19.97%	$9,827,399	19.97%

Note:

1 Includes Major Funds only. Does not include Nonmajor Governmental Funds.
2 Includes $41,028 Community College Supplement.
3 Net of $41,028 Community College Supplement.
4 Net of $2,347,086 Correction and Detention.
5 Includes $5,205,182 in debt service (apportioned).

Source:

County of Accomack, Virginia Comprehensive Annual Financial Report (CAFR) for the FYE June 30, 2016
The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 3: Revenue Forecast – Accomack County

Projected Operating Revenues in Five-Year Increments 2016 - 2036
(in thousands of 2016 dollars)

Category	2016 Revenues	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Real Estate					
Residential	$12,379	$12,613	$12,839	$13,040	$13,186
Non-Residential	$6,707	$7,136	$7,561	$7,972	$8,379
Personal Property Taxes					
Residential	$3,391	$3,455	$3,517	$3,572	$3,612
Non-Residential	$4,749	$5,052	$5,353	$5,644	$5,933
Local Sales and Use Taxes					
Residential	$2,341	$2,385	$2,428	$2,466	$2,493
Non-Residential	$1,243	$1,322	$1,401	$1,477	$1,552
Utility Taxes (Consumer)					
Residential	$663	$675	$687	$698	$706
Non-Residential	$406	$432	$458	$483	$508
Hotel and Motel Taxes					
Residential	$0	$0	$0	$0	$0
Non-Residential	$594	$632	$670	$706	$742
Other Local Taxes					
Residential	$1,331	$1,356	$1,380	$1,402	$1,418
Non-Residential	$807	$859	$910	$959	$1,008
Permits, Fees & Licenses					
Residential	$253	$258	$263	$267	$270
Non-Residential	$92	$98	$104	$109	$115
Fines & Forfeitures					
Residential	$35	$36	$36	$37	$37
Non-Residential	$19	$21	$22	$23	$24
Revenues from Use of Money					
Residential	$211	$215	$219	$222	$225
Non-Residential	$116	$124	$131	$138	$145
Charges for Services					
Residential	$353	$360	$366	$372	$376
Non-Residential	$157	$167	$177	$186	$196
Miscellaneous & Recovered Costs					
Residential	$666	$679	$691	$702	$709
Non-Residential	$293	$312	$331	$349	$367
Intergovernmental - Federal					
Residential	$2,072	$2,111	$2,148	$2,182	$2,207
Non-Residential	$1,053	$1,120	$1,187	$1,251	$1,315
Intergovernmental - State					
Residential	$7,611	$7,755	$7,894	$8,017	$8,107
Non-Residential	$1,375	$1,463	$1,550	$1,634	$1,718
Total Projected Revenues	$48,917	$50,635	$52,322	$53,908	$55,348

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source: The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 4: Expenditure Forecast – Accomack County

Projected Operating Expenditures in Five-Year Increments 2016 - 2036
(in thousands of 2016 $)

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
General Government Administration					
Residential	$3,497	$3,563	$3,627	$3,684	$3,725
Non-Residential	$1,926	$2,049	$2,171	$2,289	$2,406
Judicial Administration					
Residential	$1,127	$1,148	$1,169	$1,187	$1,200
Non-Residential	$368	$391	$414	$437	$459
Public Safety					
Residential	$3,021	$3,078	$3,133	$3,183	$3,218
Non-Residential	$1,358	$1,445	$1,531	$1,614	$1,697
Public Works					
Residential	$3,291	$3,353	$3,413	$3,467	$3,505
Non-Residential	$1,316	$1,400	$1,484	$1,564	$1,644
Health and Welfare					
Residential	$5,640	$5,747	$5,849	$5,941	$6,008
Non-Residential	$353	$376	$398	$420	$441
Parks, Recreation and Cultural					
Residential	$994	$1,013	$1,031	$1,047	$1,059
Non-Residential	$52	$56	$59	$62	$65
Community Development					
Residential	$1,490	$1,518	$1,545	$1,569	$1,587
Non-Residential	$1,508	$1,604	$1,700	$1,792	$1,884
Correction and Detention					
Residential	$1,443	$1,471	$1,497	$1,520	$1,538
Non-Residential	$904	$961	$1,019	$1,074	$1,129
Education					
Residential	$20,279	$20,663	$21,032	$21,362	$21,601
Non-Residential	$0	$0	$0	$0	$0
Total Projected Expenditures	$48,567	$49,835	$51,072	$52,211	$53,165

Summary					
Total Projected Revenues	$48,917	$50,635	$52,322	$53,908	$55,348
Total Projected Expenditures	$48,567	$49,835	$51,072	$52,211	$53,165
Net Projected Surplus (Deficit)	$350	$799	$1,250	$1,697	$2,183

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Appendix Table B - 5: Revenues by Source – Northampton County

FYE June 30, 2016

	Category	2016 Revenues [1]	Allocation Factor: Resident	Allocation Factor: Non-Res.	Contribution Margin: Residential		Contribution Margin: Non-Residential	
1	**Real Estate**							
	Residential	$13,162,685	100.0%	0.0%	$13,162,685	56.22%		
	Non-Residential	$1,706,041	0.0%	100.0%			$1,706,041	28.56%
2	**Personal Property Taxes**	$2,343,935	43.0%	57.0%	$1,008,595	4.31%	$1,335,340	22.35%
3	**Local Sales and Use Taxes**	$1,178,112	71.7%	28.4%	$844,117	3.61%	$333,995	5.59%
4	**Utility Taxes (Consumer)**	$318,769	62.0%	38.0%	$197,637	0.84%	$121,132	2.03%
5	**Hotel and Motel Taxes**	$283,613	0.0%	100.0%	$0	0.00%	$283,613	4.75%
6	**Other Local Taxes**	$928,975 [2]	65.9%	34.1%	$612,009	2.61%	$316,966	5.31%
7	**Permits, Fees & Licenses**	$168,928	74.0%	26.0%	$125,024	0.53%	$43,904	0.73%
8	**Fines & Forfeitures**	$442,889	63.7%	36.3%	$281,987	1.20%	$160,902	2.69%
9	**Revenues from Use of Money**	$174,263 [3]	63.7%	36.3%	$110,953	0.47%	$63,310	1.06%
10	**Charges for Services**	$973,548 [4]	68.7%	31.3%	$668,827	2.86%	$304,721	5.10%
11	**Miscellaneous & Recovered Costs**	$575,163 [3,4,5]	67.0%	33.0%	$385,474	1.65%	$189,689	3.18%
12	**Intergovernmental - Federal**	$128,096	66.3%	33.7%	$84,928	0.36%	$43,168	0.72%
13	**Intergovernmental - State**	$7,001,856 [4,5]	84.7%	15.3%	$5,930,572	25.33%	$1,071,284	17.93%
	Total	$29,386,873			$23,412,809	100.00%	$5,974,064	100.00%
					Contribution Margin:	79.67%		20.33%

Note:

1 Includes General and Major Governmental Funds only. Does not include Nonmajor Governmental Funds.
2 Net of Local Sales and Use Taxes, Utilities (Consumers) Taxes, and Hotel and Motel Taxes.
3 Includes Debt Service.
4 Includes Eastern Shore Regional Jail.
5 Includes Capital Projects.

Source:

County of Northampton, Virginia Comprehensive Annual Financial Report (CAFR) for the FYE June 30, 2016
The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 6: Expenditures by Use – Northampton County

FYE June 30, 2016

	Category	2016 Expenditures [1]	Allocation Factor: Resident	Allocation Factor: Non-Res.	Contribution Margin: Resident		Contribution Margin: Non-Res.	
1	**General Government Administration**	$2,827,029 [2,5]	63.7%	36.3%	$1,799,969	7.72%	$1,027,060	21.19%
2	**Judicial Administration**	$677,613	75.4%	24.6%	$510,920	2.19%	$166,693	3.44%
3	**Public Safety**	$4,624,510 [4]	72.9%	27.1%	$3,372,193	14.47%	$1,252,317	25.83%
4	**Public Works**	$2,304,264 [5]	82.0%	18.1%	$1,888,344	8.10%	$415,920	8.58%
5	**Health and Welfare**	$597,790	93.6%	6.4%	$559,292	2.40%	$38,498	0.79%
6	**Parks, Recreation and Cultural**	$366,068	95.0%	5.0%	$347,765	1.49%	$18,303	0.38%
7	**Community Development**	$1,183,198 [5]	54.7%	45.4%	$646,618	2.77%	$536,580	11.07%
8	**Correction and Detention**	$3,615,636 [6]	61.5%	38.5%	$2,223,616	9.54%	$1,392,020	28.72%
9	**Education**	$11,955,767 [3,5]	100.0%	0.0%	$11,955,767	51.30%	$0	0.00%
	Total	$28,151,875			$23,304,484	100.00%	$4,847,391	100.00%
					Contribution Margin:	82.78%		17.22%

Summary							
Total Revenues	$29,386,873	100.00%	$23,412,809	79.67%	$5,974,064	20.33%
Total Expenditures	$28,151,875	100.00%	$23,304,484	82.78%	$4,847,391	17.22%
Net Surplus (Deficit)	$1,234,998	0.00%	$108,324	-3.11%	$1,126,674	3.11%

Note:

1 Includes General and Major Governmental Funds only. Does not include Nonmajor Governmental Funds.
2 Includes $130,723 Community College contribution.
3 Net of $130,723 Community College contribution.
4 Net of $55,933 Correction and Detention.
5 Includes $3,396,829 in debt service and $900,325 in capital projects (apportioned).
6 Includes $55,933 Correction and Detention.

Source:

County of Northampton, Virginia Comprehensive Annual Financial Report (CAFR) for the FYE June 30, 2016
The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 7: Revenue Forecast – Northampton County

Projected Operating Revenues in Five-Year Increments 2016 - 2036
(in thousands of 2016 dollars)

Category	2016 Revenues	2021 Projected	2026 Projected	2031 Projected	2036 Projected
Real Estate					
Residential	$13,163	$13,105	$13,034	$12,935	$12,780
Non-Residential	$1,706	$1,783	$1,861	$1,939	$2,016
Personal Property Taxes					
Residential	$1,009	$1,004	$999	$991	$979
Non-Residential	$1,335	$1,395	$1,456	$1,518	$1,578
Local Sales and Use Taxes					
Residential	$844	$840	$836	$830	$820
Non-Residential	$334	$349	$364	$380	$395
Utility Taxes (Consumer)					
Residential	$198	$197	$196	$194	$192
Non-Residential	$121	$127	$132	$138	$143
Hotel and Motel Taxes					
Residential	$0	$0	$0	$0	$0
Non-Residential	$284	$296	$309	$322	$335
Other Local Taxes					
Residential	$612	$609	$606	$601	$594
Non-Residential	$317	$331	$346	$360	$374
Permits, Fees & Licenses					
Residential	$125	$124	$124	$123	$121
Non-Residential	$44	$46	$48	$50	$52
Fines & Forfeitures					
Residential	$282	$281	$279	$277	$274
Non-Residential	$161	$168	$175	$183	$190
Revenues from Use of Money					
Residential	$111	$110	$110	$109	$108
Non-Residential	$63	$66	$69	$72	$75
Charges for Services					
Residential	$669	$666	$662	$657	$649
Non-Residential	$305	$318	$332	$346	$360
Miscellaneous & Recovered Costs					
Residential	$385	$384	$382	$379	$374
Non-Residential	$190	$198	$207	$216	$224
Intergovernmental - Federal					
Residential	$85	$85	$84	$83	$82
Non-Residential	$43	$45	$47	$49	$51
Intergovernmental - State					
Residential	$5,931	$5,905	$5,873	$5,828	$5,758
Non-Residential	$1,071	$1,119	$1,168	$1,218	$1,266
Total Projected Revenues	$29,387	$29,553	$29,700	$29,798	$29,790

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source: The Center for Regional Analysis, Schar School of Policy and Government, George Mason University; Urban Analytics, Inc.

Appendix Table B - 8: Expenditure Forecast – Northampton County

Projected Operating Expenditures in Five-Year Increments 2016 - 2036
(in thousands of 2016 $)

Category	2016 Actual	2021 Projected	2026 Projected	2031 Projected	2036 Projected
General Government Administration					
Residential	$1,800	$1,792	$1,782	$1,769	$1,748
Non-Residential	$1,027	$1,073	$1,120	$1,167	$1,213
Judicial Administration					
Residential	$511	$509	$506	$502	$496
Non-Residential	$167	$174	$182	$189	$197
Public Safety					
Residential	$3,372	$3,357	$3,339	$3,314	$3,274
Non-Residential	$1,252	$1,309	$1,366	$1,424	$1,479
Public Works					
Residential	$1,888	$1,880	$1,870	$1,856	$1,833
Non-Residential	$416	$435	$454	$473	$491
Health and Welfare					
Residential	$559	$557	$554	$550	$543
Non-Residential	$38	$40	$42	$44	$45
Parks, Recreation and Cultural					
Residential	$348	$346	$344	$342	$338
Non-Residential	$18	$19	$20	$21	$22
Community Development					
Residential	$647	$644	$640	$635	$628
Non-Residential	$537	$561	$585	$610	$634
Correction and Detention					
Residential	$2,224	$2,214	$2,202	$2,185	$2,159
Non-Residential	$1,392	$1,455	$1,518	$1,582	$1,645
Education					
Residential	$11,956	$11,903	$11,839	$11,749	$11,608
Non-Residential	$0	$0	$0	$0	$0
Total Projected Expenditures	$28,152	$28,268	$28,364	$28,411	$28,354

Summary					
Total Projected Revenues	$29,387	$29,553	$29,700	$29,798	$29,790
Total Projected Expenditures	$28,152	$28,268	$28,364	$28,411	$28,354
Net Projected Surplus (Deficit)	$1,235	$1,285	$1,336	$1,387	$1,436

Note: Projections are based on 2016 per capita and per job baseline service level multipliers.

Source:
The Center for Regional Analysis, Schar School of Public and Government, George Mason University
Urban Analytics, Inc.

Appendix Table C - 1: NC – Tax-Exempt Land – Descriptions
Land Types Listed on Real Estate Assessment Cards
Northampton County, Virginia

Land Type	Description
Bldg Site/L(ot Residual)	This is excess acreage on a larger building site. Nearly all building sites are automatically valued with a given one-acre building site. The excess beyond that one acre is calculated at a lower rate per acre based upon the contributory value to the property.
Bldg Sit(e)	Developed site assessed as having a main structure on the parcel.
BO	Open land-exempt. Specifically found on undeveloped offshore islands.
Building	Self-explanatory.
Cemetery	Self-explanatory.
Comm(ercial)/Ind(ustrial)	Self-explanatory.
Common A(cre)	Common area.
Frontage	Undeveloped highway frontage, including both commercial and non-commercial land.
Lakes & P(onds)	Self-explanatory.
Lot Value	Vacant lot/parcel.
Low Wood(s)	Lower quality stands of timber typically interspersed with some brush.
Marsh-(300-4000)	This is general marsh land. The "– (3" is simply an assessment category for valuation range and has nothing at all to do with the property type.
Marsh Fro(ntage)	Land situated between higher, buildable land and actual marsh land. Marsh frontage is unsuitable for most all construction due to its proximity to flood hazard and resource management areas.
Open Land	Self-explanatory.
Outbldg	Self-explanatory.
Right of W(ay)	Self-explanatory.
Swamp/W	Self-explanatory.
Waterfront/	This represents Waterfront/Lot, an undeveloped/vacant waterfront lot or parcel; it also represents Waterfront/Acreage, bulk undeveloped/vacant waterfront land.
Waterview	Self-explanatory.
Woodland	Self-explanatory.

Source: Northampton County, Virginia. Office of the Commissioner of the Revenue.

Appendix Table C - 2: NC – 710 Federal Government
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	535.20	$ 2,533,200	9.11%
Building	0.00	$ 1,902,800	6.84%
Building Sit	20.69	$ 471,500	1.70%
Comm/Ind	7.00	$ 535,000	1.92%
Frontage -	39.00	$ 780,000	2.80%
Lot Value (	2.00	$ 17,600	0.06%
Marsh - (3	499.50	$ 243,700	0.88%
Marsh Fro	24.50	$ 850,000	3.06%
Open Land	501.38	$ 3,280,400	11.79%
Outbldg	0.00	$ 1,215,600	4.37%
Right Of W	39.07	$ 228,900	0.82%
Swamp/W	392.50	$ 1,892,400	6.80%
Waterfront	3.00	$ 855,000	3.07%
Waterfront/	685.72	$ 12,320,900	44.30%
Waterview	1.80	$ 138,000	0.50%
Woodland	73.04	$ 548,100	1.97%
Total	**2,824.40**	**27,813,100**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	535.20	$ 2,533,200	9.11%
Building	0.00	$ 1,902,800	6.84%
Building Sit	20.69	$ 471,500	1.70%
Comm/Ind	7.00	$ 535,000	1.92%
Frontage -	39.00	$ 780,000	2.80%
Lot Value (	2.00	$ 17,600	0.06%
Outbldg	0.00	$ 1,215,600	4.37%
Right Of W	39.07	$ 228,900	0.82%
Woodland	58.43	$ 438,480	1.58%
Sub-Total	**701.39**	**8,123,080**	**29.21%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Marsh - (3	499.50	$ 243,700	0.88%
Marsh Fro	24.50	$ 850,000	3.06%
Open Land	501.38	$ 3,280,400	11.79%
Swamp/W	392.50	$ 1,892,400	6.80%
Waterfront	3.00	$ 855,000	3.07%
Waterfront/	685.72	$ 12,320,900	44.30%
Waterview	1.80	$ 138,000	0.50%
Woodland	14.61	$ 109,620	0.39%
Sub-Total	**2,123.01**	**19,690,020**	**70.79%**

Appendix Table C - 3: NC – 720 Commonwealth of Virginia
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Building	0.00	$ 2,360,300	6.33%
Building Sit	18.00	$ 677,000	1.81%
Comm/Ind	47.05	$ 437,400	1.17%
Frontage -	23.00	$ 394,000	1.06%
Lakes & P	28.00	$ 530,000	1.42%
Lot Value (	128.00	$ 2,629,000	7.05%
Low Wood	160.00	$ 240,000	0.64%
Marsh - (3	2,281.31	$ 1,063,800	2.85%
Marsh Fro	99.00	$ 1,008,000	2.70%
Open Land	525.19	$ 6,509,000	17.45%
Outbldg	0.00	$ 1,229,100	3.29%
Swamp/W	9,602.50	$ 1,365,000	3.66%
Waterfront/	82.65	$ 16,437,500	44.07%
Waterview	1.00	$ 40,000	0.11%
Woodland	453.62	$ 2,382,400	6.39%
Total	**13,449.32**	**37,302,500**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Building	0.00	$ 2,360,300	6.33%
Building Sit	18.00	$ 677,000	1.81%
Comm/Ind	47.05	$ 437,400	1.17%
Frontage -	23.00	$ 394,000	1.06%
Lot Value (	128.00	$ 2,629,000	7.05%
Low Wood	80.00	$ 120,000	0.32%
Outbldg	0.00	$ 1,229,100	3.29%
Woodland	362.90	$ 1,905,920	5.11%
Sub-Total	**658.95**	**9,752,720**	**26.14%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Lakes & P	28.00	$ 530,000	1.42%
Low Wood	80.00	$ 120,000	0.32%
Marsh - (3	2,281.31	$ 1,063,800	2.85%
Marsh Fro	99.00	$ 1,008,000	2.70%
Open Land	525.19	$ 6,509,000	17.45%
Swamp/W	9,602.50	$ 1,365,000	3.66%
Waterfront/	82.65	$ 16,437,500	44.07%
Waterview	1.00	$ 40,000	0.11%
Woodland	90.72	$ 476,480	1.28%
Sub-Total	**12,790.37**	**27,549,780**	**73.86%**

Appendix Table C - 4: NC – 740 Local (includes county & incorporated towns)
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	59.27	$ 288,100	0.25%
Building	0.00	$ 57,978,500	49.97%
Building Sit	17.00	$ 677,000	0.58%
Comm/Ind	310.72	$ 14,753,200	12.71%
Lakes & P	2.00	$ 20,000	0.02%
Lot Value (	37.00	$ 303,200	0.26%
Marsh - (3	51.32	$ 15,400	0.01%
Marsh Fro	16.82	$ 4,665,000	4.02%
Open Land	159.87	$ 1,022,400	0.88%
Outbldg	0.00	$ 32,719,400	28.20%
Right of W	5.00	$ 13,000	0.01%
Waterfront/	20.50	$ 3,090,000	2.66%
Woodland	139.97	$ 487,300	0.42%
Total	**819.47**	**116,032,500**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	59.27	$ 288,100	0.25%
Building	0.00	$ 57,978,500	49.97%
Building Sit	17.00	$ 677,000	0.58%
Comm/Ind	310.72	$ 14,753,200	12.71%
Lot Value (	37.00	$ 303,200	0.26%
Outbldg	0.00	$ 32,719,400	28.20%
Right of W	5.00	$ 13,000	0.01%
Woodland	111.98	$ 389,840	0.34%
Sub-Total	**540.97**	**$ 107,122,240**	**92.32%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Lakes & P	2.00	$ 20,000	0.02%
Marsh - (3	51.32	$ 15,400	0.01%
Marsh Fro	16.82	$ 4,665,000	4.02%
Open Land	159.87	$ 1,022,400	0.88%
Waterfront/	20.50	$ 3,090,000	2.66%
Woodland	27.99	$ 97,460	0.08%
Sub-Total	**278.50**	**8,910,260**	**7.68%**

Appendix Table C - 5: NC – 760 Religious
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	11.42	$ 48,900	0.26%
Building	0.00	$ 14,675,700	78.37%
Building Sit	38.00	$ 1,264,600	6.75%
Cemetery	19.18	$ 46,000	0.25%
Comm/Ind	51.24	$ 2,139,300	11.42%
Frontage -	1.00	$ 22,000	0.12%
Lot Value (	25.00	$ 196,500	1.05%
Open Land	14.47	$ 110,500	0.59%
Outbldg	0.00	$ 182,900	0.98%
Woodland	14.11	$ 39,500	0.21%
Total	**174.42**	**18,725,900**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	11.42	$ 48,900	0.26%
Building	0.00	$ 14,675,700	78.37%
Building Sit	38.00	$ 1,264,600	6.75%
Cemetery	19.18	$ 46,000	0.25%
Comm/Ind	51.24	$ 2,139,300	11.42%
Frontage -	1.00	$ 22,000	0.12%
Lot Value (	25.00	$ 196,500	1.05%
Outbldg	0.00	$ 182,900	0.98%
Woodland	11.29	$ 31,600	0.17%
Sub-Total	**157.13**	**$ 18,607,500**	**99.37%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Open Land	14.47	$ 110,500	0.59%
Woodland	2.82	$ 7,900	0.04%
Sub-Total	**17.29**	**$ 118,400**	**0.63%**

Appendix Table C - 6: NC – 780 Educational
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Building	0.00	$ 6,021,900	85.13%
Comm/Ind	15.00	$ 445,000	6.29%
Low Wood	4.14	$ 8,300	0.12%
Marsh - (3	5.00	$ 1,500	0.02%
Open Land	18.90	$ 67,900	0.96%
Outbldg	0.00	$ 64,100	0.91%
Waterfront	2.50	$ 183,000	2.59%
Woodland	111.34	$ 282,100	3.99%
Total	**156.88**	**7,073,800**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Building	0.00	$ 6,021,900	85.13%
Comm/Ind	15.00	$ 445,000	6.29%
Low Wood	2.07	$ 4,150	0.06%
Outbldg	0.00	$ 64,100	0.91%
Woodland	89.07	$ 225,680	3.19%
Sub-Total	**106.14**	**$ 6,760,830**	**95.58%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Low Wood	2.07	$ 4,150	0.06%
Marsh - (3	5.00	$ 1,500	0.02%
Open Land	18.90	$ 67,900	0.96%
Waterfront	2.50	$ 183,000	2.59%
Woodland	22.27	$ 56,420	0.80%
Sub-Total	**50.74**	**$ 312,970**	**4.42%**

Appendix Table C - 7: NC – 790 Other
Northampton County, Virginia
Tax-Exempt Land
Conserved Land vs Non-Conserved Land

Total Tax-Exempt Land			
Land Type	Acreage	2016 Value	% of Total Value
Barrier Island	0.00	$ 4,500,000	1.34%
Bldg Site/L	17.30	$ 137,500	0.04%
BO	200.00	$ 2,000,000	0.59%
Building	0.00	$ 23,334,300	6.93%
Building Sit	11.00	$ 485,000	0.14%
Cemetery	50.22	$ 12,000	0.00%
Comm/Ind	121.38	$ 4,405,100	1.31%
Common A	95.96	$ 2,014,500	0.60%
Frontage	1.00	$ 58,000	0.02%
Lakes & P	28.03	$ 136,600	0.04%
Lot Value (	31.00	$ 304,200	0.09%
Low Wood	593.76	$ 356,300	0.11%
Marsh - (3	1639.84	$ 492,200	0.15%
Marsh Fro	44.75	$ 952,800	0.28%
Open Land	493.44	$ 924,600	0.27%
Outbldg[1]	0.00	$ 281,921,200	83.75%
Recreational	17.74	$ -	0.00%
Residential	3.71	$ 408,100	0.12%
Right of W	65.69	$ 285,600	0.08%
Swamp/W	1.00	$ 500	0.00%
Waterfront	2.00	$ 340,000	0.10%
Waterfront/	547.26	$ 11,801,300	3.51%
Waterview	1.00	$ 20,000	0.01%
Woodland	545.04	$ 1,731,600	0.51%
Not designated	432.73	$ -	0.00%
Total	**4943.85**	**336,621,400**	**100.00%**

Sub-total: Non Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Bldg Site/L	17.30	$ 137,500	0.04%
Building	0.00	$ 23,334,300	6.93%
Building Sit	11.00	$ 485,000	0.14%
Cemetery	50.22	$ 12,000	0.00%
Comm/Ind	121.38	$ 4,405,100	1.31%
Common A	95.96	$ 2,014,500	0.60%
Frontage	1.00	$ 58,000	0.02%
Lot Value (	31.00	$ 304,200	0.09%
Low Wood	296.88	$ 178,150	0.05%
Outbldg[1]	0.00	$ 281,921,200	83.75%
Residential	3.71	$ 408,100	0.12%
Right of W	65.69	$ 285,600	0.08%
Woodland	436.03	$ 1,385,280	0.41%
Not designated	432.73	$ -	0.00%
Sub-Total	**1,562.90**	**$ 314,928,930**	**93.56%**

Sub-total: Conserved Land			
Land Type	Acreage	2016 Value	% of Total Value
Barrier Island	0.00	$ 4,500,000	1.34%
BO	200.00	$ 2,000,000	0.59%
Lakes & P	28.03	$ 136,600	0.04%
Low Wood	296.88	$ 178,150	0.05%
Marsh - (3	1639.84	$ 492,200	0.15%
Marsh Fro	44.75	$ 952,800	0.28%
Open Land	493.44	$ 924,600	0.27%
Recreational	17.74	$ -	0.00%
Swamp/W	1.00	$ 500	0.00%
Waterfront	2.00	$ 340,000	0.10%
Waterfront/	547.26	$ 11,801,300	3.51%
Waterview	1.00	$ 20,000	0.01%
Woodland	109.01	$ 346,320	0.10%
Sub-Total	**3,380.95**	**$ 21,692,470**	**6.44%**

[1]This is comprised primarily of the Chesapeake Bay Bridge & Tunnel.

Appendix Table D - 1: Accomack – Northampton Planning District Commission

The A-NPDC's role in conservation of property is to facilitate, acquire, and potentially develop facilities for conserved property. Historically, this has solely focused on public access, parks, and recreational facilities. Discussions have occurred where mitigation of flooding could be considered as a criteria for conservation target identification. This occurs at the request of our jurisdictions in accordance with their conservation priorities. Those priorities tend to be in accordance with local and regional plans, consideration of implications to the tax base, dual benefits that enhance both conservation and outdoors recreational and nature-based economies, and benefits to the region's resilience to natural hazards. Future conservation of properties by the STP are preferable where and when discussions occur proactively between local governments and conservation groups and are completed in a manner that both provides benefits from conservation of habitat and advances the region's thriving outdoor recreational and nature-based activities that enhance the quality of life and provide additional opportunities for activities for both residents and visitors. Further, it is important that the STP adhere to a flexible conservation target identification process that considers changes to the natural environment and communities of the Eastern Shore.

Appendix Table D - 2: DCR – Natural Heritage Program

The Natural Heritage Program's duty, as outlined by the Virginia Natural Area Preserves Act (enabling legislation) is to, "preserve the natural diversity of the biological resources of the Commonwealth". As part of that overarching duty, NHP identifies and maps areas supporting natural heritage resources (including habitat of rare, threatened, or endangered plant and animal species and rare or significant natural communities) across the Eastern Shore and across the Commonwealth.

Each individual occurrence of these resources is mapped and assigned a quality rank based on range wide specifications. A site boundary is generated around each occurrence providing a preliminary depiction of the minimal area required to conserve the particular element and those ecological processes necessary to maintain their long-term survival.

These site boundaries are referred to as "conservation sites". Based on the rarity and quality of the resources present within the conservation site an overall biodiversity significance ranking is assigned, ranging from "outstanding" (B1) to "of general significance" (B5).

On the Eastern Shore there are 67 conservation sites currently delineated, consisting of approximately 170,000 acres. Nearly 1/3 of this acreage, and the largest mapped site, consist of a single site delineated as critically important migratory bird stopover habitat on Delmarva's southern tip. Most other individual sites are much smaller, the smallest being just 7 acres.

2 Eastern Shore conservation sites are considered to have "outstanding" significance (both of which are largely protected), 22 sites have "very high" significance (at least 5 of these have no protection whatsoever), 11 have "high" significance, 9 have "moderate" significance, and 23 have "general" significance.

Taken together, the combined set of conservation sites comprises the minimum network of area needed to conserve the currently documented heritage resources of the region. Protecting all these areas will take a concerted partnership with multiple partners.

NHP prioritizes protection efforts for new Natural Area Preserves (NAP's) according to B-ranks, while opportunistically expanding existing NAP's to improve the ecological integrity, manageability, and resiliency.

Appendix Table D - 3: DEQ – Coastal Zone Management Program

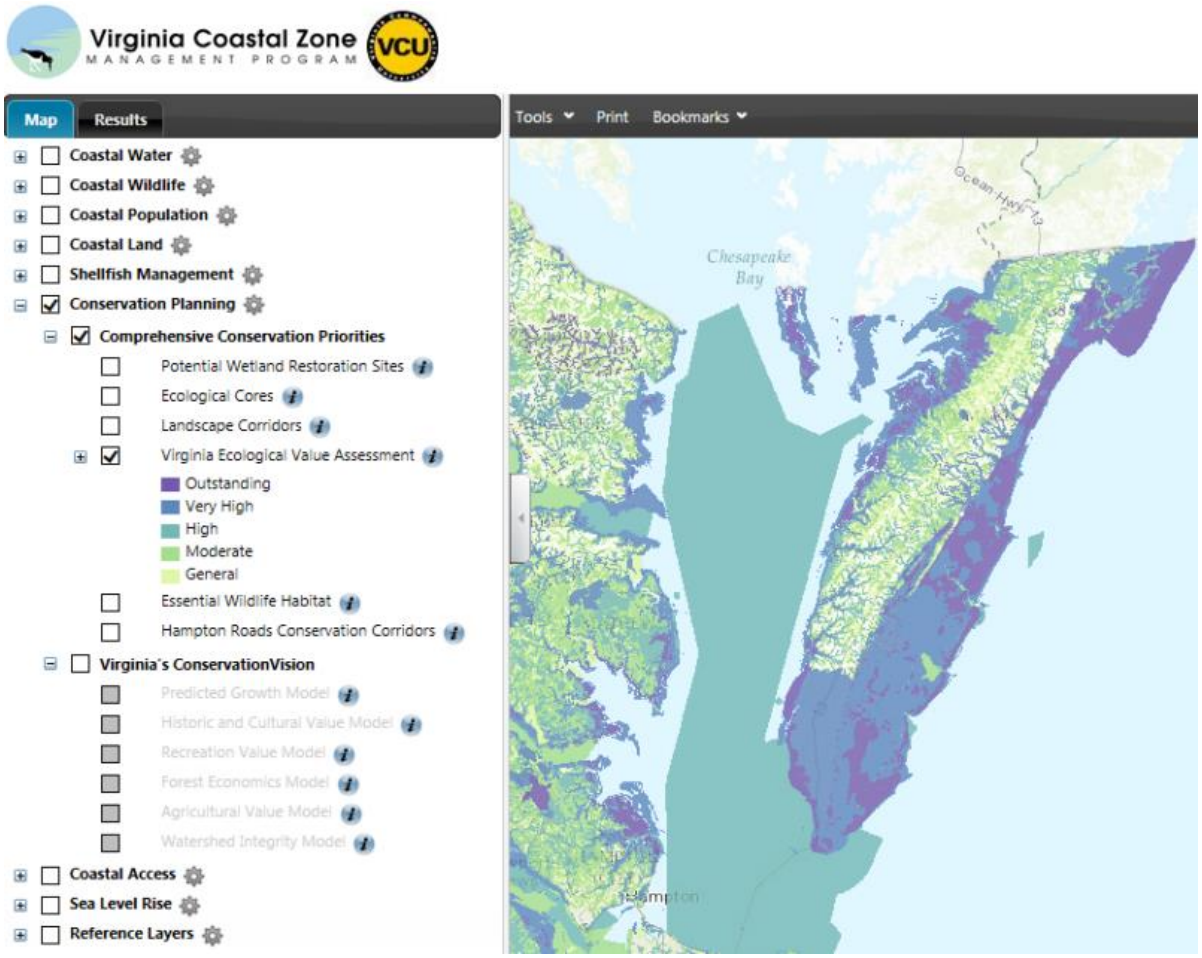
Conservation Target Identification Process: Virginia Coastal Zone Management Program

Although the Virginia CZM Program does not own land nor hold conservation easements, it does provide grant funds to state agencies and local governments for fee simple or other interests in land under Section 306A of the federal Coastal Zone Management Act of 1972, as amended and as approved by the National Oceanic and Atmospheric Administration. Coastal lands may be acquired for conservation, public access, or habitat restoration purposes.

Since the early 1990's the Virginia CZM Program has set aside roughly $200,000 per year for land acquisition projects. This is usually an insufficient amount to acquire coastal land but the program has often pieced together these funds across several grant years through no-cost extensions of older grants to allow amounts of $400,000 or more to be available. Such land acquisition grants are also often matched with additional funds by the grantee. Since 1997 the Virginia CZM Program has invested $2,684,320 in CZM Section 306A funds toward acquisition of 5 separate parcels. Additionally, from 2006 – 2011, when CZM Coastal and Estuarine Land Conservation Program funds were available through a national competition, Virginia CZM invested $ 3,825,000 in two separate parcels.

The Virginia CZM Program relies largely upon its Coastal Virginia Ecological Value Assessment to prioritize acquisitions. This assessment is available on the program's mapping portal, Coastal GEMS at www.coastalgems.org. Clicking on the "Conservation Planning" theme and then "Virginia Ecological Value Assessment reveals the VEVA map:

The Coastal VEVA synthesizes more than 30 layers of coastal land and water conservation priorities based on component layers developed by the Virginia Department of Conservation & Recreation, Game and Inland Fisheries, Virginia Institute of Marine Science and Virginia Commonwealth University. The tool was first posted on Coastal GEMS in 2011. Work is currently underway to update components of VEVA and to re-run the model. Version 2 of VEVA is expected in spring of 2017 and Version 3 is expected in summer of 2018. This is the primary tool on which the Virginia CZM Program relies for prioritizing land acquisition.



Other Factors Considered by Virginia CZM

• The Virginia CZM Program also uses the Sea Level Rise viewer in Coastal GEMS to predict when coastal lands under consideration for acquisition may become inundated in the future. If the site does not allow for upland migration of wetlands or shoreline habitats, and is likely to be significantly inundated within 50 years, its acquisition priority is lowered.

• The Virginia CZM Program also considers the habitat restoration potential of possible acquisition sites. For example agricultural fields with few or no buildings that connect to existing habitat can be high priorities for acquisition and restoration to migratory bird habitat. Such sites would not show up on the VEVA map, but the VEVA map would still be consulted to assess whether the parcel does connect to high value land.

• All acquisitions are from willing sellers therefore, availability of parcels is also a key factor in CZM considerations. Because grant funds are expected to be spent within 12-18 months from the start of an annual award and must be spent within three years of the start of an award, availability is key.

• Purchase price generally cannot exceed fair market value. 10% above fair market value can be offered if justification is received and approved by NOAA.

Appendix Table D - 4: Department of Game and Inland Fisheries

Virginia Department of Game and Inland Fisheries Land Acquisition Vision Statement:

The vision for land acquisition (both by purchase and other means) by the Virginia Department of Game and inland Fisheries is:

> To conserve sufficient and appropriate habitat to maintain thriving populations of all native wildlife species and to ensure that citizens and visitors have unparalleled opportunity to observe, hunt, fish, or otherwise enjoy wildlife and wildlife-related recreation.

Supporting Statement:

The Virginia Department of Game and Inland Fisheries (VDGIF) works to ensure that Virginia's wildlife legacy continues to occupy a place in the hearts and minds of her citizens by means of conserving the Commonwealth's wildlife resource and habitats. The VDGIF and its Board have a legal mandate[35] and obligation to acquire and manage land to conserve critical habitats and to provide citizens and visitors an unparalleled opportunity to observe, hunt, fish, and enjoy wildlife and the landscapes they occupy. Department-owned lands are a living classroom, offering visitors first-hand experience of management practices that allow wildlife to thrive, as well as offering visitors a glimpse of the wildlife heritage that is the birthright of every citizen. Habitat conservation is key to species survival, yet across the state wildlife habitat is being rapidly lost and fragmented largely due to conversion to residential and commercial development. Virginia's population has more than doubled in the last 50 years[36]. One recent estimate suggests that 1.74 million acres of Virginia's open space (about 6.9% of Virginia's land area) could be lost to development to more intensive uses between 2003 and 2030[37]. Given mounting pressures on the resources the VDGIF is charged with safeguarding, it is imperative that the Department strive to acquire sufficient and appropriate lands to conserve the wildlife resource, meet the needs of the public for wildlife-related recreation, and inspire all to value and support their wildlife heritage.

[35]§29.1-103, §29.1-103.2, §29.1-109.
[36]Weldon Cooper Center for Public Service, Demographics & Workforce Group, www.coopercenter.org/demographics
[37]Eric M. White, Anita T. Morzillo, and Ralph J. Alig. Past and Projected Rural Land Conversion in the US at State, Regional, and National Levels. Landscape and Urban Planning 89, no.1-2 (2009):37-48. Original ERS 8/8/14. Updates by Team 8/28/14

VDGIF Land Acquisition Screening Process

Level 1: Administrative Review

Date:_____

Landowner contact information:

Name:_____

Address: _____

Phone: _____

Email: _____

Source of Acquisition Proposal: _____

Property Location: _____

Property Acreage: _____

Assessed Value: _____

Asking price: _____

Proposed Use Type: _____

Potential funding source(s): _____

Located within VDGIF Acquisition Priority Area: Yes / No

Forwarded for level 2 field review: Yes / No

Bureau of Wildlife Resources _____

Region _____ Division/Section _____

Law Enforcement _____

Infrastructure _____

Information included in packet:

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Level 2: Field Review

A. Habitat Value of the Property: **Points Total =____/ 120** **Score =____%**

1. *Habitats/Communities present on site: Total =____/ 30*

Value of forested habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of early successional/farmland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of wetland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of karst (cave/sinkhole) habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of open water habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of stream/river habitats
none = 0 points low = 1 point med = 3 points high = 5 points

2. *Habitat Enhancement/Restoration Opportunities on site: Total =____/ 30*

Forested habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Early successional/farmland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Wetland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Karst (cave/sinkhole) habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Open water habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Stream/river habitats
none = 0 points low = 1 point med = 3 points high = 5 points

3. *Habitats/Communities adjacent to site: Total =____/ 30*

Value of forested habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of early successional/farmland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of wetland habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of karst (cave/sinkhole) habitats
none = 0 points low = 1 point med = 3 points high = 5 points

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Value of open water habitats
none = 0 points low = 1 point med = 3 points high = 5 points

Value of stream/river habitats
none = 0 points low = 1 point med = 3 points high = 5 points

4. *Value of habitats to native wildlife species: Total =_____/ 30*
Provides no value to native wildlife species
0 points

Value to avian species
low = 1 point med = 3 points high = 5 points

Value to mammalian species
low = 1 point med = 3 points high = 5 points

Value to herpetofuanal species
low = 1 point med = 3 points high = 5 points

Value to invertebrate species
low = 1 point med = 3 points high = 5 points

Value to plant species
low = 1 point med = 3 points high = 5 points

Value to fish species
low = 1 point med = 3 points high = 5 points

Comments: Please enter below any comments regarding the value of the habitats provided on site, including any unique land forms or habitat features, species of greatest conservation need likely to inhabit the property, trout streams/Anadromous fish use areas/threatened and endangered species or other designated habitats associated with the property, etc.

_____
_____
_____
_____
_____
_____
_____
_____

Overall value of habitat: low med high

B.Recreational Value of the Property: Points Total =_____/ 85 Score =_____%

1. *Hunting opportunities: Total =_____/ 20*
Provides no hunting opportunity
0 points

Value of small game hunting opportunity
low = 1 point med = 3 points high = 5 points

Value of big game hunting opportunity
low = 1 point med = 3 points high = 5 points

Value of migratory webless hunting opportunity

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low = 1 point med = 3 points high = 5 points

Value of migratory waterfowl hunting opportunity
low = 1 points med = 3 points high = 5 points

2. *Fishing opportunities: Total =_____/ 20*
Provides no fishing opportunity
0 points

Value of coldwater stream fishing opportunity
low = 1 point med = 3 points high = 5 points

Value of warm water stream fishing opportunity
low = 1 point med = 3 points high = 5 points

Value of lake/ pond / impounded water fishing opportunity
low = 1 point med = 3 points high = 5 points

Value of river fishing opportunity
low = 1 point med = 3 points high = 5 points

3. *Boating opportunities: Total =_____/ 15*
Provides no boating opportunity
0 points

Value of hand-launching opportunity
low = 1 point med = 3 points high = 5 points

Value of light boat (trailered) launching opportunity
low = 1 point med = 3 points high = 5 points

Value of larger power boat launching opportunity
low = 1 point med = 3 points high = 5 points

4. *Wildlife / plant viewing / watching opportunities: Total =_____/ 30*
Provides no wildlife viewing opportunity
0 points

Value of avian species viewing opportunity
low = 1 point med = 3 points high = 5 points

Value of mammalian species viewing opportunity
low = 1 point med = 3 points high = 5 points

Value of herpetofaunal species viewing opportunity
low = 1 point med = 3 points high = 5 points

Value of invertebrate species veiwing opportunity
low = 1 point med = 3 points high = 5 points

Value of plant species viewing opportunity
low = 1 point med = 3 points high = 5 points

Value of fish species viewing opportunity
low = 1 point med = 3 points high = 5 points

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Comments: Please enter below any comments regarding the value of the recreational opportunities provided on site.

Overall recreational opportunity rating: low med high

C. **Property Management:**

1. *Estimated Travel time from manned DGIF work station to site*: _____

2. *Value of road network and condition*: Please include information about the condition of existing roads on the property as well as rating of existing site access via public road.

3. *Condition and value of man made structures existing on site*: Please include information about existing or needed structures such as residential facilities, storage facilities, dams or other water controls structures, bridges, culverts, etc.

4. *Evaluation of adjacent land uses*: Please include information about existing or proposed development adjacent to site, including type of development, estimated number of residences or facilities, etc. as well as information about farming activities nearby, industrial uses and so on.

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D.**Law Enforcement Considerations**:

1. *Estimated Law Enforcement response time*: _____

2. *Estimated emergency services response time*: _____

3. *Law enforcement activity history for the previous 5 years*: Please include information here about recent request for service on or around the property including numbers of calls and for what purposes.

4. *Estimated law enforcement effort hours/year needed to enforce laws on property*: _____

E.**Other considerations**: (in the space below, please detail your opinions about why this property should or should not be acquired)

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Level 3: Further Investigations (out of Capstone Project scope)

- Human population density at various radius' from site
- Road network including interstates
- Regional land use planning/zoning
- Number of hunting licenses/boating registrations in county
- Future capital investments required
- Staff needed to manage site
- Passive vs. active management
- Demand for recreational opportunities including wildlife watching

Updated 08/03/2010 AME

Appendix Table D - 5: Ducks Unlimited

Ducks Unlimited Conservation Process

We are looking for opportunities to assist with fee acquisition of lands within National Wildlife Refuge (NWR) acquisition boundaries and potential properties adjacent to state Wildlife Management Areas (WMA's) for incorporation into public ownership. We are also looking for opportunities to restore and enhance waterfowl focused habitats on protected lands (both private and public) on the Eastern Shore.

Appendix Table D - 6: Natural Resources Conservation Service – Accomac

Natural Resources Conservation Service (NRCS)

Under the NRCS Wetland Reserve Program, the Accomac Field Office monitors 14 easements (511.2 acres) held by USDA.

Appendix Table D - 7: The Nature Conservancy – Virginia Coast Reserve

Conservation Target Identification Process
(Summarized from the Eastern Shore of Virginia Conservation Area Plan, 2003)

The Nature Conservancy's work on the Eastern Shore of Virginia began in the 1950s as part of an effort to save Parramore Island, one of the largest barrier islands off the Shore, from purchase by the U.S. Navy for a bombing range. By 1975, the Conservancy purchased 14 of the Eastern Shore's barrier islands, thereby establishing the Virginia Coast Reserve. Since then, the Conservancy has worked on the Shore to manage and monitor the resources of the barrier islands, coastal bays, marshes, and inlets, particularly the breeding and migratory colonial waterbirds, shorebirds, and waterfowl.

In 2003 the Conservancy, with assistance from our many local, state, and federal partners, completed the Eastern Shore of Virginia Conservation Area Plan, which guides our selection of conservation targets. The plan is a blueprint for conservation action, providing a baseline from which to measure the success of these actions over time. The Conservation Area Plan will be updated in 2017.

Since the 2003 plan was completed, TNC has focused on the following Eastern Shore of Virginia conservation areas, while still making the barrier islands, lagoons, and marshes a priority:

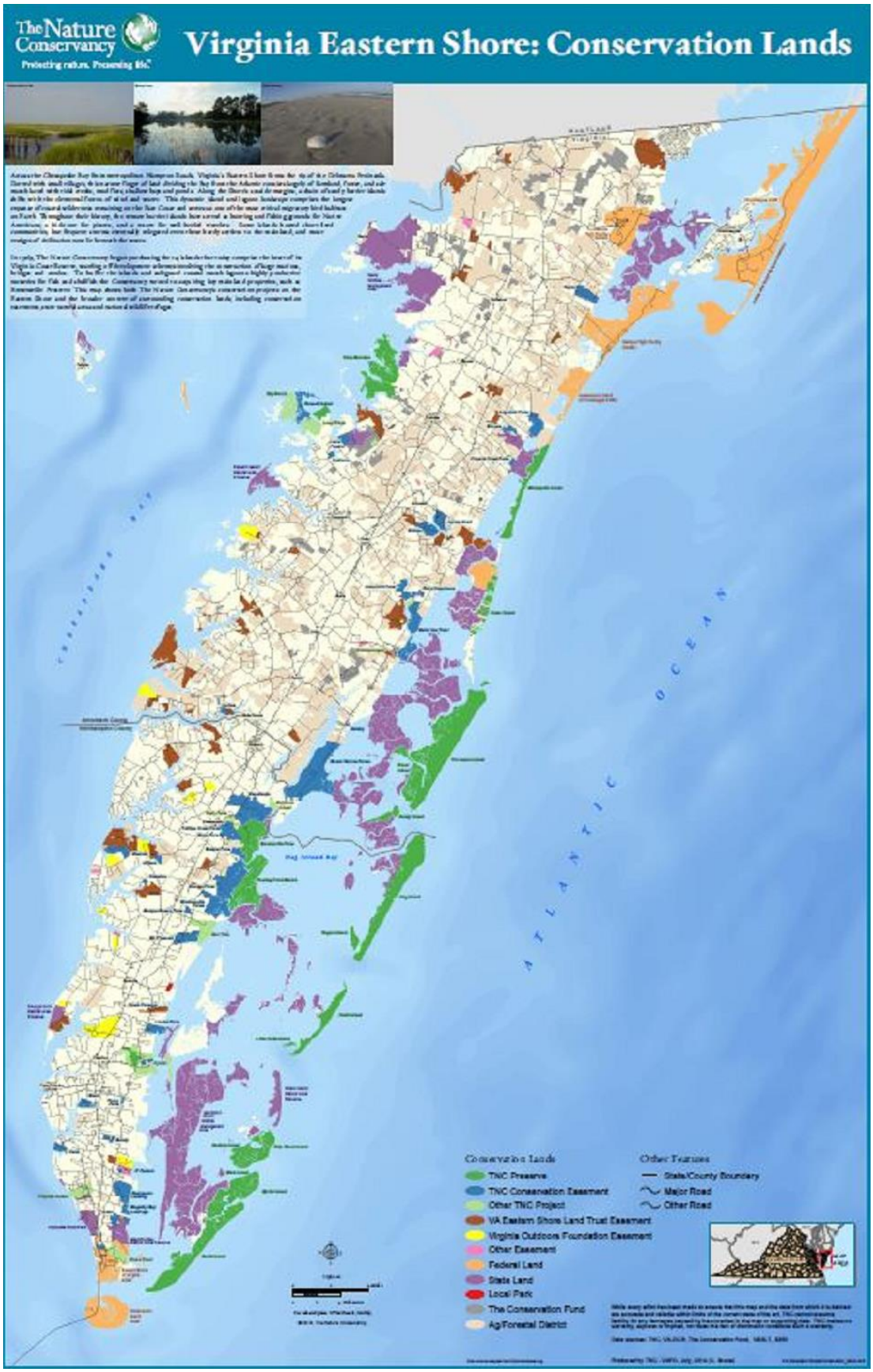
1. The western coast of the Shore along the Chesapeake Bay (or the "bayside"), including the marshes, tidal creeks, and shoals of the estuary and other coastal habitats.

2. The nearshore marine system, which extends 65 miles from the mainland to the Continental Shelf.

3. Migratory songbird and raptor stopover habitat on the mainland, with special emphasis on the Southern Tip. (Since the 2003 plan was developed, the "Southern Tip" area has been enlarged to include all of Virginia's Eastern Shore.)

The Conservancy has created a Microsoft Excel Conservation Planning Tool to facilitate and support the conservation area planning process, providing a mechanism for identifying, scoring, and prioritizing the threats to a given target and the strategies to abate the threats. The process is driven by best available scientific data and expert opinion on the ecology and biological components of a given area. The Conservancy also uses our in-house GIS and other conservation planning tools, such as Coastal GEMS and VEVA, developed by Virginia's Coastal Zone Management program.

Once conservation targets are identified, the Conservancy works with willing landowners to protect the land through purchase or by obtaining conservation easements. The Conservancy may also initially purchase land that is later transferred to an interested state or federal partner. Critical to this process is funding, and the Conservancy seeks all available resources to fund our conservation efforts.


The Nature Conservancy
Protecting nature. Preserving life.
Virginia Eastern Shore: Conservation Lands
Conservation Lands
TNC Preserve
TNC Conservation Easement
Other TNC Project
VA Eastern Shore Land Trust Easement
Virginia Outdoors Foundation Easement
Other Easement
Federal Land
State Land
Local Park
The Conservation Fund
Ag/Forestal District
Other Features
State/County Boundary
Major Road
Other Road
ATLANTIC OCEAN

Appendix Table D - 8: USFWS – Eastern Shore of Virginia NWR

USFWS-Eastern Shore of Virginia NWR Land Protection Plan (LPP)

Summary-full document can be found in the refuge's final comprehensive conservation plan (CCP)

A primary purpose of the refuge is to provide habitat for migrants. The LPP identifies a 6,030-acre acquisition area for the refuge, based on the 10-km zone, which will allow the Service to protect or restore additional migration habitat within the critical area of the southern tip. This will be accomplished through the acquisition of lands, conservation easements, or development of cooperative agreements.

Proposed Action and Objectives

The Service will acquire lands or conservation easements from willing sellers, within the 6,030-acre proposed acquisition boundary. These lands will be managed as part of the Eastern Shore of Virginia NWR, as discussed in the CCP. Cooperative management agreements will be used in some cases.

Our objectives are:

- Protect existing forest and shrub migration habitat, located within the southern 10 km of the peninsula, identified as critical to migrant landbirds.
- Restore forest and shrub habitat from agricultural lands within this same area, to widen/reconnect the vegetated migration corridor (particularly along the bayside).
- Restore several large grassland tracts from agricultural lands as opportunities occur, to provide migration, breeding and wintering habitat for declining grassland bird species.
- Protect known sites of threatened or endangered species and rare natural communities (e.g., Bald eagle and tiger beetle nesting sites).

Acquisition of lands in the proposal area will prevent significant loss of important habitat, and allow restoration of additional habitat necessary to support large concentrations of migratory birds.

Proposed Acquisition Area

The proposed acquisition area is based upon the 10km zone identified as critical to migrants. The boundary has been adjusted to correspond to property boundaries and identifiable features, such as roads. It extends from the tip of the peninsula north along the Chesapeake Bay shoreline to Plantation Creek, and north along the seaside shoreline up to Walls Landing Creek, just south of Capeville. It is bounded along the bayside by Route 645, and along the seaside by Route 600.

We are not interested in acquiring developed lands in the vicinity of villages or subdivisions. Our interest is to protect and restore wildlife habitat. Therefore, certain lands have been

excluded from the refuge acquisition area. These are the rural village districts, as designated by Northampton County, including Cedar Grove, Magotha, Townsend, Capeville, and Cheapside. Also excluded are the Bayshore subdivisions of Latimer's Bluff, Butler's Bluff, Bay Ridge, Guy's Landing, Elliott's Creek, Sugar Hill, Chesapeake Shores and Arlington Plantation.

In addition to the refuge, other conservation lands exist in the vicinity of the southern tip, including Kiptopeke State Park (535 acres), the GATR Tract (356 acres, part of the state's Mockhorn Wildlife Management Area), and the Trower Natural Area Preserve (35 acres). These lands are not included in the refuge acquisition area.

Land Protection Priorities
As land parcels within the proposed acquisition area are offered to the Service, and as funds become available, acquisition priority will be based on habitat type and location, as follows:

Priority 1: Parcels with significant (over 1 acre) tracts of existing forested or shrub migration habitat, located at the southern tip (from Cedar Grove south) and along the bayside shoreline (between the bayshore and Route 645, north to Plantation Creek). This area supports higher densities of high-volume migrants than the seaside (approximately 3:1) for two main reasons:

> 1) greater forest and shrub understory diversity, producing more food, and 2) a "reverse migration" phenomenon causing re-distribution of migrants into bayside habitats. In addition, this is a high priority because the threat of habitat loss to subdivision and development is more immediate.

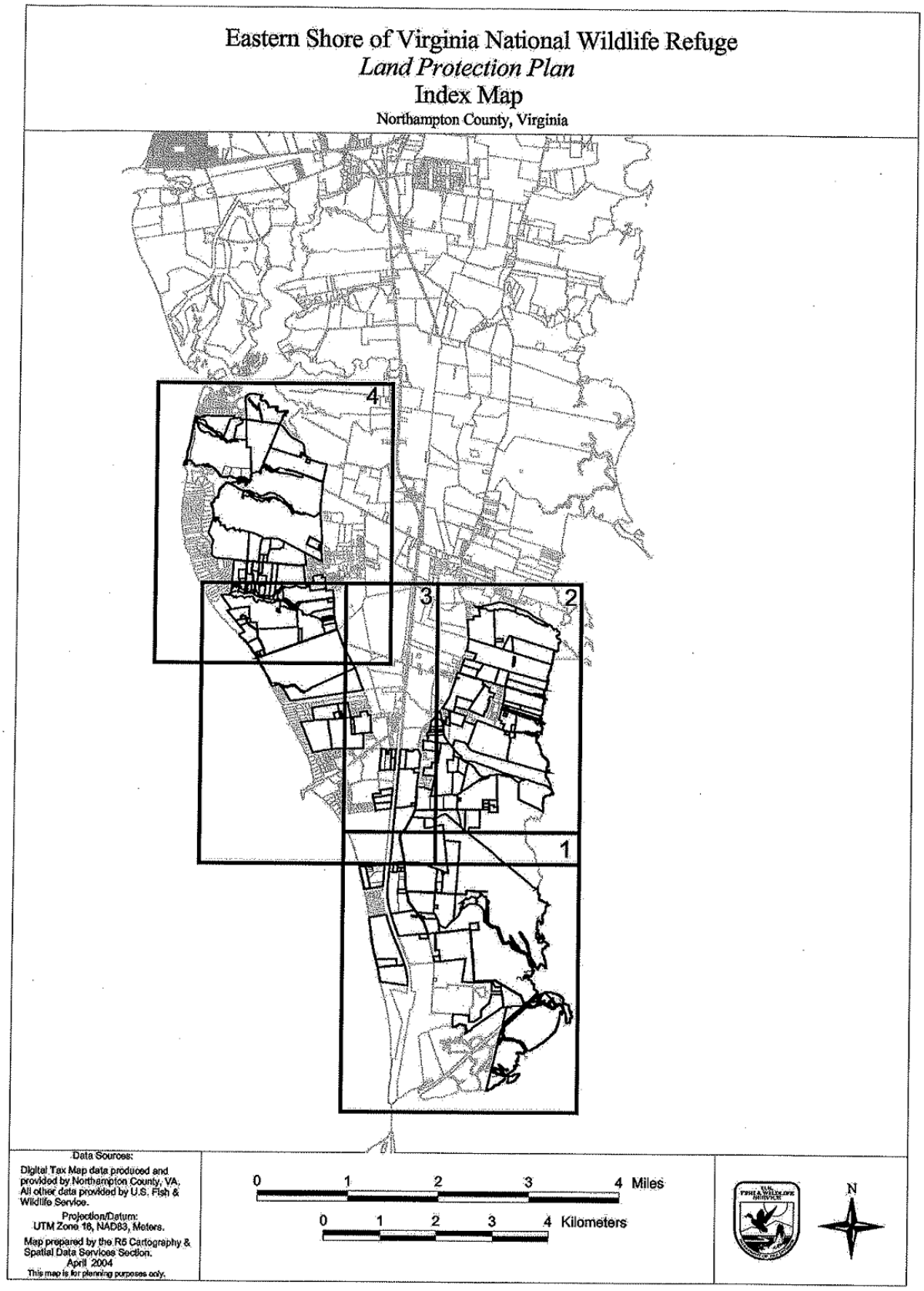
Priority 2: Parcels with significant (over 1 acre) tracts of existing forested or shrub migration habitat, located along the seaside coastline (between the seaside coastline and Route 600, from Cedar Grove north to Walls Landing Creek). While still within the critical lower 10k area, bird densities are not as high as on the bayside. Also, due to topography, this side of the peninsula supports more extensive forested/shrub wetland transition zone grading into tidal marsh, and offers greater opportunity for wetland and riparian buffer restoration.

Priority 3: Parcels that consist of predominantly agricultural land with no existing forest or shrub (less than an acre) and no coastal connection. Although unvegetated, these lands are important because they offer the opportunity to restore migration habitat within the 10km geographic area. Such opportunities are important to attempt to offset future habitat losses to subdivision and development within this area.

Priority 4: Those relatively small parcels, generally less than 5 acres, that include collections of buildings such as residences, farm houses, barns, various tractor and equipment sheds, farm storage or processing buildings. Our intention is not to acquire residences and buildings, but to protect or restore habitat, so these parcels will be evaluated on a case-by-case basis.

Acquisition Methods

We can use four methods for acquiring either a full or partial interest in parcels within the proposed acquisition boundary, if landowners are interested: (1) purchase (e.g., fee title, or partial interest like a conservation easement), (2) donations, (3) exchanges, and (4) transfers. Our proposed method is listed in a table for each tract within the refuge acquisition boundary that will be shared at the meeting should interest arise.


Eastern Shore of Virginia National Wildlife Refuge
Land Protection Plan
Index Map
Northampton County, Virginia
4
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Data Sources:
Digital Tax Map data produced and provided by Northampton County, VA. All other data provided by U.S. Fish & Wildlife Service.
Projection/Datum:
UTM Zone 18, NAD83, Meters.
Map prepared by the R5 Cartography & Spatial Data Services Section.
April 2004
This map is for planning purposes only.
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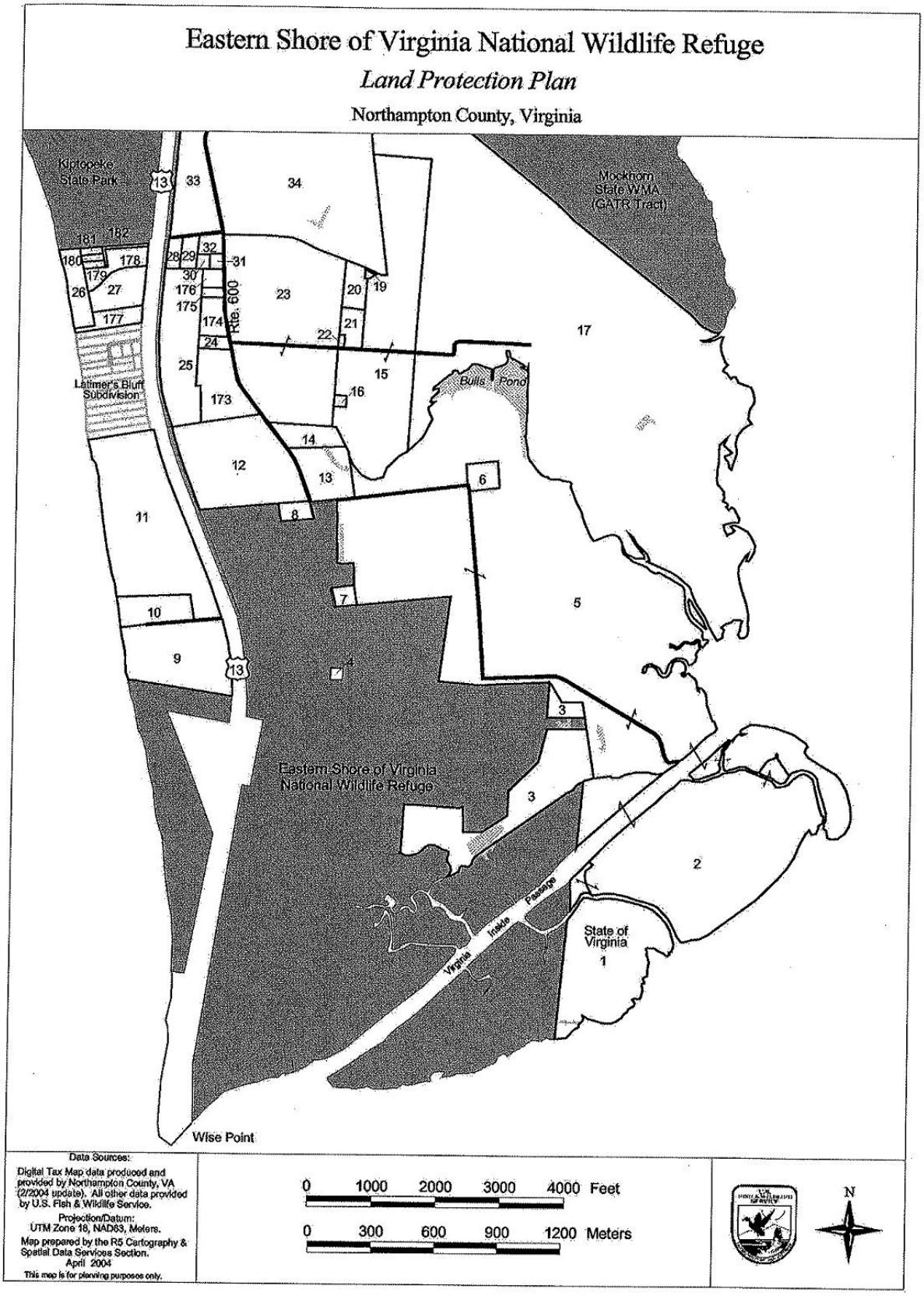
Map 1


Eastern Shore of Virginia National Wildlife Refuge
Land Protection Plan
Northampton County, Virginia
Kiptopeke State Park
Mockhorn State WMA (GATR Tract)
Latimer's Bluff Subdivision
Bulls Pond
Rte. 600
Eastern Shore of Virginia National Wildlife Refuge
State of Virginia
Virginia Inside Passage
Wise Point
Data Sources:
Digital Tax Map data produced and provided by Northampton County, VA (2/2004 update). All other data provided by U.S. Fish & Wildlife Service.
Projection/Datum:
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Map prepared by the R5 Cartography & Spatial Data Services Section.
April 2004
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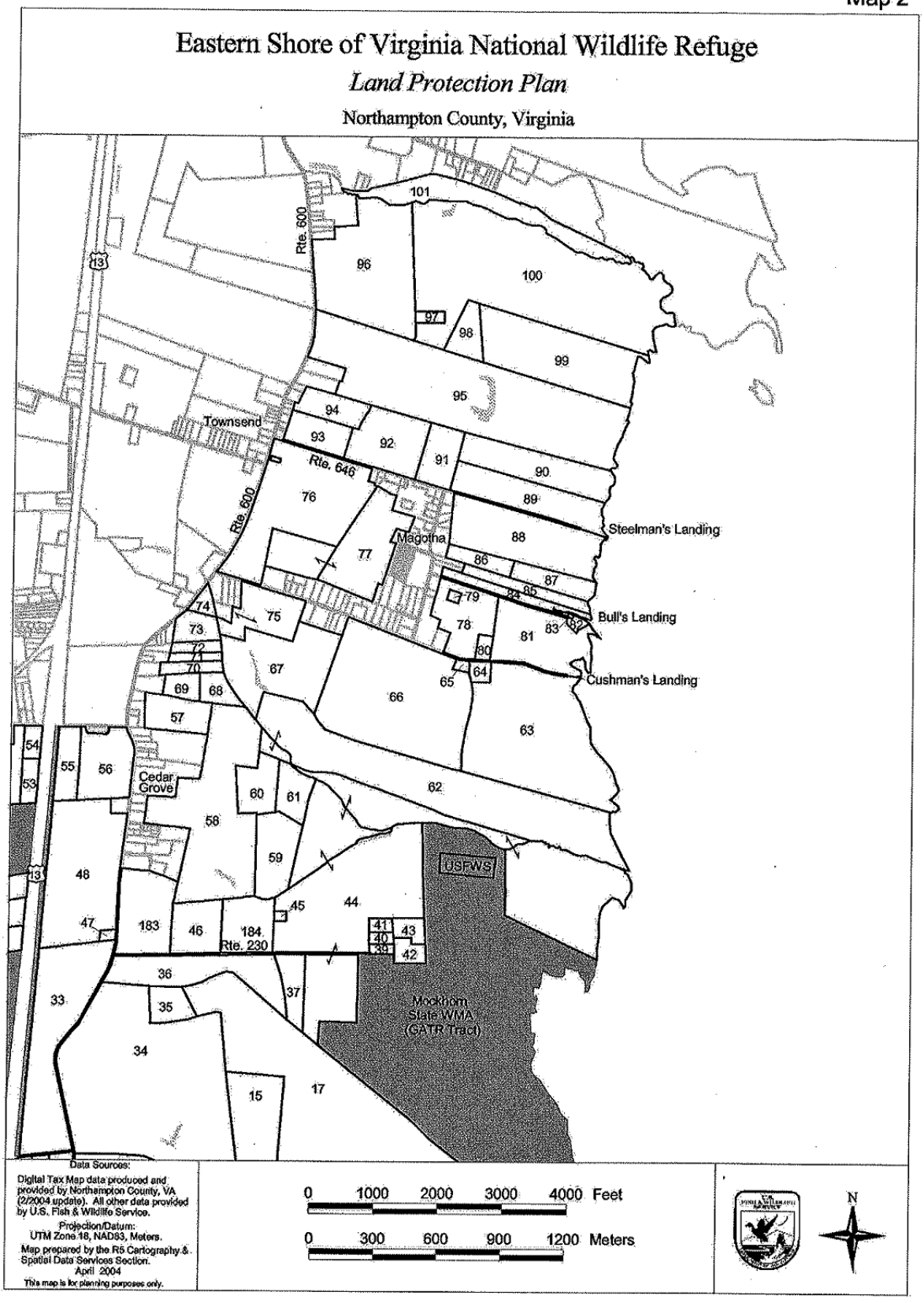
Map 2


Eastern Shore of Virginia National Wildlife Refuge
Land Protection Plan
Northampton County, Virginia
Townsend
Rte. 600
Rte. 646
Rte. 230
Magotha
Steelman's Landing
Bull's Landing
Cushman's Landing
Cedar Grove
USFWS
Mockhorn State WMA (CATR Tract)
Data Sources:
Digital Tax Map data produced and provided by Northampton County, VA (2/2004 update). All other data provided by U.S. Fish & Wildlife Service.
Projection/Datum: UTM Zone 18, NAD83, Meters.
Map prepared by the R5 Cartography & Spatial Data Services Section.
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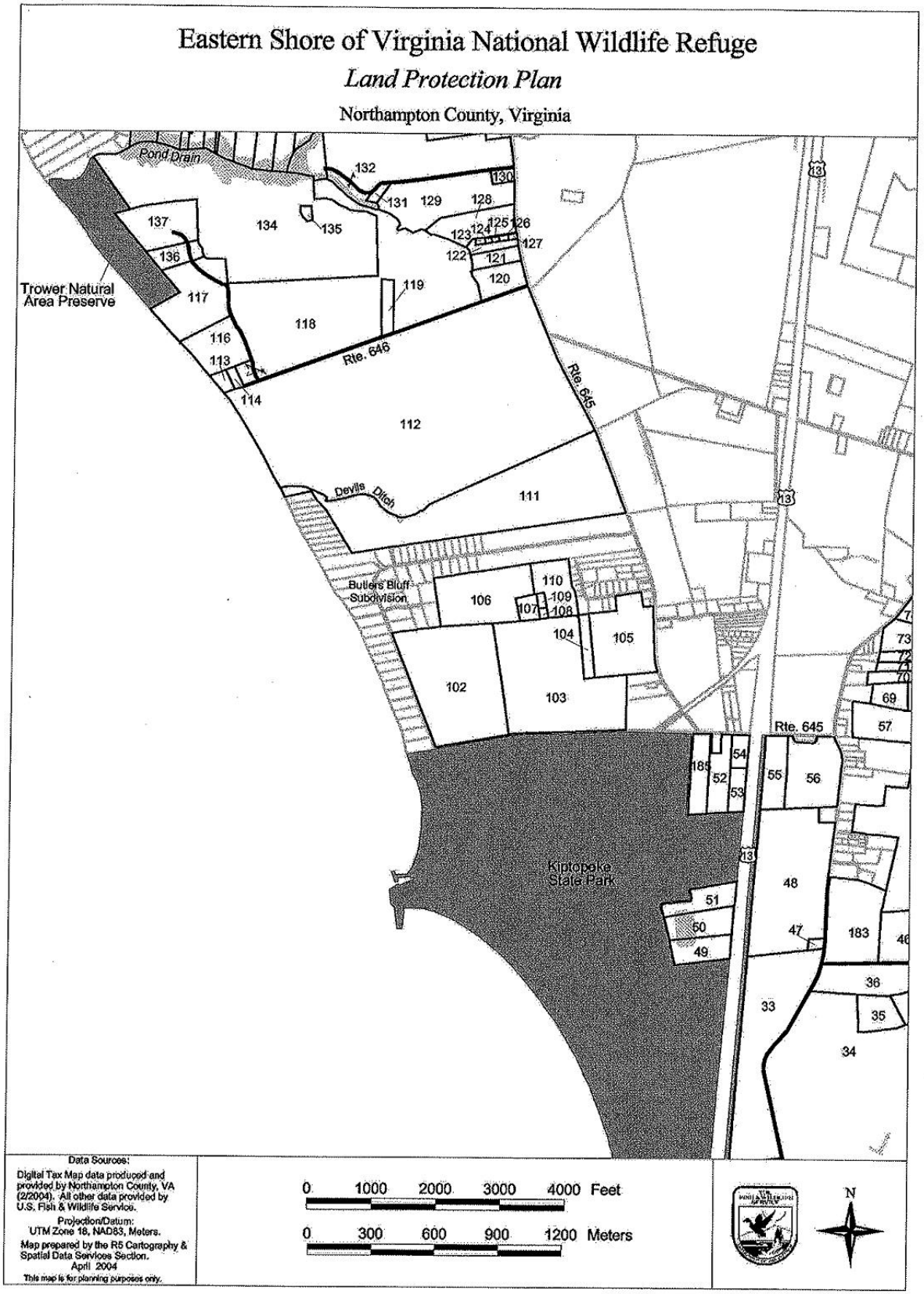
Map 3


Eastern Shore of Virginia National Wildlife Refuge
Land Protection Plan
Northampton County, Virginia
Pond Drain
Trower Natural Area Preserve
Rte. 646
Rte. 645
Deville Ditch
Butlers Bluff Subdivision
Kiptopeke State Park
Data Sources:
Digital Tax Map data produced and provided by Northampton County, VA (2/2004). All other data provided by U.S. Fish & Wildlife Service.
Projection/Datum: UTM Zone 18, NAD83, Meters.
Map prepared by the R5 Cartography & Spatial Data Services Section. April 2004
This map is for planning purposes only.
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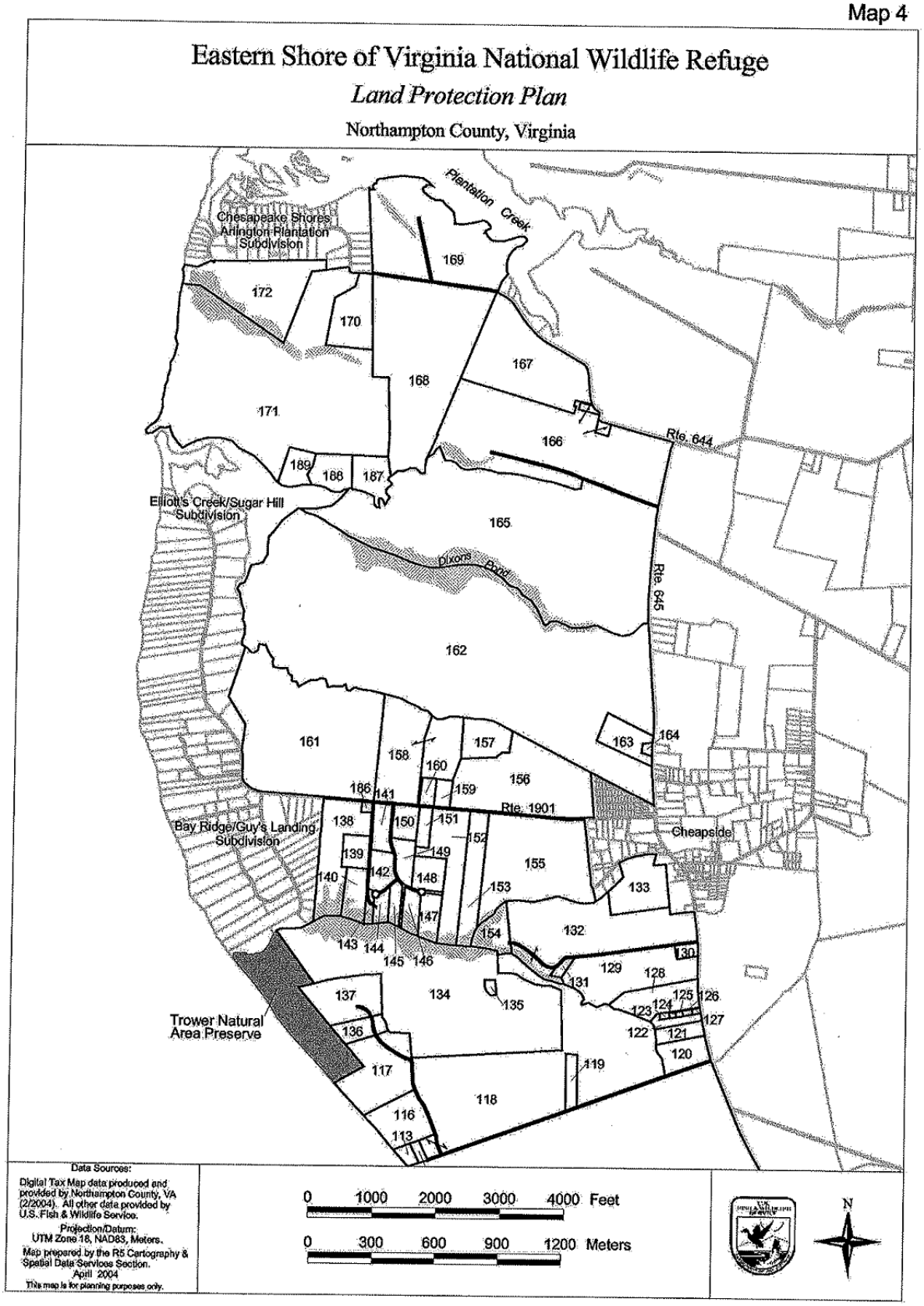
Map 4


Eastern Shore of Virginia National Wildlife Refuge
Land Protection Plan
Northampton County, Virginia
Plantation Creek
Chesapeake Shores/ Arlington Plantation Subdivision
Elliott's Creek/Sugar Hill Subdivision
Bay Ridge/Guy's Landing Subdivision
Trower Natural Area Preserve
Dixons Road
Rte. 644
Rte. 645
Rte. 1901
Cheapside
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Data Sources:
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Projection/Datum:
UTM Zone 18, NAD83, Meters.
Map prepared by the R5 Cartography & Spatial Data Services Section.
April 2004
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Appendix Table D - 9: Virginia's Eastern Shore Land Trust

VES Land Trust **Guiding Conservation Standards**

The VES Land Trust seeks to conserve rural lands, which will best preserve the farms, forests, wetlands, fisheries and heritage of Virginia's Eastern Shore for the benefit of future generations.

Area Served
Northampton & Accomack Counties, Virginia

Priority Conservation Sites

- Property adjacent to land already in conservation easement or a preserve
- Waterfront properties
- Southern tip of the Delmarva Cape, Northampton County
- Church Neck watershed, Northampton County
- Craddock Creek watershed, Accomack County
- Finney Creek watershed, Accomack County
- Folly Creek watershed, Accomack County
- Nandua Creek watershed, Accomack County
- Nassawadox Creek watershed, Northampton County
- Occohannock Creek watershed, Accomack and Northampton Counties
- Pitts Creek watershed, northwestern edge, Accomack County
- Property adjacent to Virginia Scenic Byways
- Properties on the state and national historic register

Minimum Conservation Standards

- ≥ 50 acres unless contiguous with or in close proximity to permanently protected property, including State and Federal conservation lands or lands that exhibit ecologically important conservation value as defined by Department of Conservation and Recreation Natural Heritage Program.
- Subdivision: no partition shall result in parcels <50 acres

< 100 acres	No subdivision allowed
100 –150 acres	No subdivision preferred, 2 parcels may be ok
200+ acres	Preferred density 100+ acres per parcel
• Farmland	No less than 80 percent protected
• Timber land	No less than 80 percent protected
• Waterfront land	No less than 80 percent protected
• Scenic open space	No less than 80 percent protected
• Wetlands/Bottomlands	100 percent protected
• Wildlife & plant habitat	100 percent protected
• Historic resources	100 percent protected

Public Interests Served

- Productive farms, forests and fisheries are maintained.
- The supply of safe drinking water is protected and retained.
- Wildlife habitat, wetlands and other natural resources maintain healthy function.
- Rural scenic values are preserved.
- Recreational opportunities on land and water are available.
- Historic resources are preserved.

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Appendix Table D - 10: Organization Conservation Priorities
Southern TIP Partnership

Member Organization	Priorities														
	Rare and Endangered Species	*Shorebirds*	*Land Birds*	*Habitat Restoration*	*Wetlands and Restoration*	*Farmland*	*Coastal Resiliency*	*Sea Level Rise*	*Marsh Migration*	*Hunting*	*Fishing*	*Wildlife Observation*	*Environmental Education*	*Recreation*	*Public Access*
Accomack-Northampton PDC							✓	✓						✓	✓
DCR - Natural Heritage	✓	✓	✓	✓	✓			✓	✓			✓	✓		✓
DEQ - Coastal Zone Management	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓		✓
DGIF	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓		✓
Ducks Unlimited				✓	✓				✓	✓			✓		
NRCS - Eastern Shore					✓	✓							✓		
TNC - Virginia Coast Reserve	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
US Fish and Wildlife Service	✓	✓	✓	✓	✓				✓			✓	✓		✓
VA Eastern Shore Land Trust		✓	✓		✓	✓				✓		✓	✓		

Source: Southern TIP Partnership, as of March 28, 2017.

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