

2623 - CID510071_Gloucester County_CFPF

Application Details

Funding Opportunity:	2336-Virginia Community Flood Preparedness Fund - Project Grants - CY24 Round 5
Funding Opportunity Due Date:	Jan 24, 2025 11:59 PM
Program Area:	Virginia Community Flood Preparedness Fund
Status:	Under Review
Stage:	Final Application
Initial Submit Date:	Jan 13, 2025 2:03 PM
Initially Submitted By:	Jackie Rickards
Last Submit Date:	
Last Submitted By:	

Contact Information

Primary Contact Information

Active User*:	Yes
Type:	External User
Name*:	Ms. Jackie Rickards <small>Salutation First Name Middle Name Last Name</small>
Title:	Senior Planning Project Manager
Email*:	jrickards@mppdc.com
Address*:	PO Box 399 4521 Lewis B. Puller Memorial Highway Shacklefords Virginia 23156 <small>City State/Province Postal Code/Zip</small>
Phone*:	(804) 785-8100 Ext. <small>Phone</small> ###-###-####
Fax:	###-###-####
Comments:	

Organization Information

Status*:	Approved
Name*:	Middle Peninsula Planning District Commission
Organization Type*:	Local Government - PDC
Tax ID*:	
Unique Entity Identifier (UEI)*:	
Organization Website:	https://www.mppdc.com/

Address*:

PO Box 286

Saluda Virginia 23149
City State/Province Postal Code/Zip

Phone*:

(804) 758-2311 Ext.
####

Fax:

####

Benefactor:

Vendor ID:

Comments:

VCFPF Applicant Information

Project Description

Name of Local Government*: Middle Peninsula Planning District Commission

Your locality's CID number can be found at the following link: [Community Status Book Report](#)

NFIP/DCR Community Identification Number (CID)*: 510071

If a state or federally recognized Indian tribe,

Name of Tribe:

Authorized Individual*: Lewis Lawrence
First Name Last Name

Mailing Address*: P.O. Box 299
Address Line 1
4521 Lewis B. Puller Memorial Highway
Address Line 2
Shacklefords Virginia 23156
City State Zip Code

Telephone Number*: 804-758-2311

Cell Phone Number*: 804-832-6747

Email*: llawrence@mppdc.com

Is the contact person different than the authorized individual?

Contact Person*: Yes

Contact: Jackie Rickards
First Name Last Name
P.O. Box 299
Address Line 1
4521 Lewis B. Puller Memorial Highway
Address Line 2
Shacklefords Virginia 23156
City State Zip Code

Telephone Number: 804-758-2311

Cell Phone Number: 215-264-6451

Email Address: jrickards@mppdc.com

Enter a description of the project for which you are applying to this funding opportunity

Project Description*:

This proposal is requesting funding for the construction of a living shoreline project that will include widening of the beach, heightening dunes,

installation of plants and rock sills at Gloucester Point Beach Park in Gloucester County to reduce flooding at this county-owned asset, which serves both local and regional communities.

Low-income geographic area means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

Is the proposal in this application intended to benefit a low-income geographic area as defined above?

Benefit a low-income geographic area*: Yes

Information regarding your census block(s) can be found at [census.gov](https://www.census.gov)

Census Block(s) Where Project will Occur*: 1034

Is Project Located in an NFIP Participating Community?* Yes

Is Project Located in a Special Flood Hazard Area?* Yes

Flood Zone(s) (if applicable): AE & VE

Flood Insurance Rate Map Number(s) (if applicable): 51073C0257F

Eligibility CFPF - Round 4 - Projects

Eligibility

Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these)?

Local Government*: Yes
Yes - Eligible for consideration
No - Not eligible for consideration

Does the local government have an approved resilience plan and has provided a copy or link to the plan with this application?

Resilience Plan*: Yes
Yes - Eligible for consideration under all categories
No - Eligible for consideration for studies, capacity building, and planning only

If the applicant is not a town, city, or county, are letters of support from all affected local governments included in this application?

Letters of Support*: Yes
Yes - Eligible for consideration
No - Not eligible for consideration
N/A - Not applicable

Has this or any portion of this project been included in any application or program previously funded by the Department?

Previously Funded*: No
Yes - Not eligible for consideration
No - Eligible for consideration

Has the applicant provided evidence of an ability to provide the required matching funds?

Evidence of Match Funds*: Yes
Yes - Eligible for consideration
No - Not eligible for consideration
N/A - Match not required

Scoring Criteria for Flood Prevention and Protection Projects - Round 4

Scoring

Category Scoring:

Hold CTRL to select multiple options

Project Category*: Floodplain restoration, Living shorelines and vegetated buffers

Is the project area socially vulnerable? (based on [ADAPT Virginia's Social Vulnerability Index Score](#))

Social Vulnerability Scoring:

Very High Social Vulnerability (More than 1.5)
High Social Vulnerability (1.0 to 1.5)
Moderate Social Vulnerability (0.0 to 1.0)
Low Social Vulnerability (-1.0 to 0.0)
Very Low Social Vulnerability (Less than -1.0)

Socially Vulnerable*: Low Social Vulnerability (-1.0 to 0.0)

Is the proposed project part of an effort to join or remedy the community's probation or suspension from the NRP?

NFIP*: No

Is the proposed project in a low-income geographic area as defined below?

"Low-income geographic area" means any locality, or community within a locality, that has a median household income that is not greater than 80 percent of the local median household income, or any area in the Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his delegation of authority to the Internal Revenue Service. A project of any size within a low-income geographic area will be considered.

Low-Income Geographic Area*: Yes

Projects eligible for funding may also reduce nutrient and sediment pollution to local waters and the Chesapeake Bay and assist the Commonwealth in achieving local and/or Chesapeake Bay TMDLs. Does the proposed project include implementation of one or more best management practices with a nitrogen, phosphorus, or sediment reduction efficiency established by the Virginia Department of Environmental Quality or the Chesapeake Bay Program Partnership in support of the Chesapeake Bay TMDL Phase III Watershed Implementation Plan?

Reduction of Nutrient and Sediment Pollution*: Yes

Does this project provide ?community scale? benefits?

Community Scale Benefits*: More than one census block

Expected Lifespan of Project

Expected Lifespan of Project*: Over 20 Years

Comments:

Projects will be designed to the 50-year FEMA flood level standard and the living shorelines are designed to adapt and migrate to changing flooding/sea level rise conditions. This ensures the lifespan of the project.

Scope of Work - Projects - Round 4

Scope of Work

Upload your Scope of Work

Please refer to Part IV, Section B. of the grant manual for guidance on how to create your scope of work

Scope of Work*: [A and B. Glo. Point Beach Con_SCOPE OF WORK.pdf](#)

Comments:

Budget Narrative

Budget Narrative Attachment*: [C. Glo. Point Beach Con_BUDGET NARRATIVE.pdf](#)

Comments:

Scope of Work Supporting Information - Projects

Supporting Information - Projects

Provide population data for the local government in which the project is taking place

Population*: 38711.00

Provide information on the flood risk of the project area, including whether the project is in a mapped floodplain, what flood zone it is in, and when it was last mapped. If the property or area around it has been flooded before, share information on the dates of past flood events and the amount of damage sustained

Historic Flooding data and Hydrologic Studies*: [B. Supporting - 1 Project info - b Historic flooding data.pdf](#)

Include studies, data, reports that demonstrate the proposed project minimizes flood vulnerabilities and does not create flooding or increased flooding (adverse impact) to other properties

No Adverse Impact*: [B. Supporting - 1 Project info - c No adverse impact.pdf](#)

Include supporting documents demonstrating the local government's ability to provide its share of the project costs. This must include an estimate of the total

project cost, a description of the source of the funds being used, evidence of the local government's ability to pay for the project in full or quarterly prior to reimbursement, and a signed pledge agreement from each contributing organization

Ability to Provide Share of Cost*: [B. Supporting - 1 Project info - d ability to match.pdf](#)

A benefit-cost analysis must be submitted with the project application

Benefit-Cost Analysis*: [B. Supporting - 1 Project info - e BCA.pdf](#)

Provide a list of repetitive loss and/or severe repetitive loss properties. Do not provide the addresses for the properties, but include an exact number of repetitive loss and/or severe repetitive loss structures within the project area

Repetitive Loss and/or Severe Repetitive Loss Properties*: [B. Supporting - 1 Project info - g SRL-RL.pdf](#)

Describe the residential and commercial structures impacted by this project, including how they contribute to the community such as historic, economic, or social value. Provide an exact number of residential structures and commercial structures in the project area

Residential and/or Commercial Structures*:

Gloucester Beach Point Park does not contain any residential or commercially owned structures. The site includes a County-owned and operated 2,000 square foot facility that provides public restrooms, employee storage, and seasonal concessions. There is also a shower facility, interpretative sign panels, and a gazebo. There are two boat landings that support recreational and commercial seafood activity and a no-cost use fishing pier.

DCR's ConserveVirginia model identifies the site's importance for cultural and historic preservation. The Park hosts the only public beach access in the County. It is also the most popular public tidal boating site around. The no-cost use fishing pier provides a supplemental food source for many low-income families in the region.

In addition, the Park has a long history of being a hub for commercial use in the County, including historic ferry transportation and a working waterfront for various fisheries in the distant past to more recent boating, fishing, and beach recreational access.

If there are critical facilities/infrastructure within the project area, describe each facility

Critical Facilities/Infrastructure*:

Gloucester Beach Point Park serves as critical infrastructure with regards to its role in providing emergency services and marine patrol access to the water. In addition, the Park itself is a critical site for the County and region's water based recreational economy. Investing in a more resilient living shoreline system is a top priority to protect this valuable asset and ensure it continues to provide direct, indirect, and induced benefits to the County, region, and beyond.

As noted above, Gloucester County has filed one FEMA claim for damages incurred from tidal flooding at the site's single building. No FEMA claims have been filed since because the damage incurred to that structure have been mostly from nuisance tidal flooding which have slowly eroded and worn out the structure but has not created the level of an insurance claim. That being said, it is anticipated that the living shoreline system, with elevated dunes, will reduce nuisance flooding at the site, slowing or mitigating the gradual deterioration. Additionally, the primary losses to the County have been related to the costs incurred from staff time for repairs and maintenance following storm events, as well as the lost indirect and induced economic benefits when the public is unable to access the park following flood events.

Explain the local government's financial and staff resources. How many relevant staff members does the local government have? To what relevant software does the local government have access? What are the local government's capabilities?

Financial and Staff Resources*:

The MPPDC is a 52-year-old political subdivision of the Commonwealth of Virginia formed by the Middle Peninsula localities under VA Code §15.2-4203 to provide solutions to problems of greater than local significance.

In 2020, the MPPDC launched the Fight the Flood (FTF) Program to connect property owners to contractors who can help them protect their property from rising flood waters. Since the beginning of the program FTF has invested \$44,506,804 in flood protection within the region.

Currently MPPDC staff manages 49 projects funded by a variety of funding state and federal agencies (i.e. NOAA, USDOT, FEMA, NFWF, VDHC, DEQ, DCR and VDOT). The MPPDC adopted an \$10,082,854 agency budget for FY2025 (July 2024 to June 2025).

Staff includes:

- Lewis Lawrence, Executive Director, coordinate project partners, assist with project execution, and update the MPPDC Board.
- Curt Smith, Deputy Director, advise and assist project partners, advise on project execution and update the MPPDC Board.
- Rachael Peabody, Deputy Director, administer and manage CFPF projects.
- Julie Kaylor, Chief Financial Officer, oversee all financial activities of this project including preparation of financial reports and budget management.

? Taylor Ovide, Coastal Planner, will assist in managing partners, the activities and information gathered from the proposed project and project reports.

-Jackie Rickards, Senior Planning Project Manager, oversee reporting for CFPF projects.

- Jennifer Farmer, Hybrid Financial Clerk, Clerk to the Board, and Regional Planner, assist the CFO with administrative, fiscal, and clerical tasks

and provide assistance to planning staff

Staff has access to Microsoft Suite (i.e., Outlook, PowerPoint, Excel, Word) for daily work tasks and ArcGIS to hold all data associated with the FTF Program.

Gloucester County's Administrator, Carol Steele, was involved in the preparation of this application and will be responsible for staff involvement if funding is awarded. Ms. Steele committed the County Engineers time for procuring, coordinating and overseeing VIMS, contractors, and maintenance staff associated with this project. County Engineers will also work with MPPDC staff as project manager.

The County's facilities management staff will conduct regular maintenance after construction is complete. Maintenance will continue over the 50-year design life of the system and beyond to conserve this County asset.

Identify and describe the goals and objectives of the project. Include a description of the expected results of the completed project and explain the expected benefits of the project. This may include financial benefits, increased awareness, decreased risk, etc.

Goals and Objectives*:

Goal 1: Reduced flooding and sustained use of the Gloucester Point Beach Park facility with continued, or increased, public access to local coastal waterways and recreational areas.

Goal 2: Strengthened local economy through increased boat ramp usage.

Objective 1: Project Permitting (July 2025 to January 2026, 7 months --- Note that timelines are contingent upon the actual execution date of an award contract)

- MPPDC staff will contract with Gloucester County, whose staff will oversee the permitting process and attain all necessary permits for construction. County staff will meet with VIMS-SSP staff to review the project plan and to discuss the scope.
- The VIMS-SSP, which developed the project design (for the 50-yr flood), will be contracted to provide assistance to Gloucester staff regarding technical aspects of the project design and will make modifications to the project design, as necessary.

Objective 2: Project Procurement (February to April 2026, 3 months)

- Gloucester staff will procure a qualified contractor for construction of the permitted project.
- VIMS-SSP will provide assistance and guidance throughout the procurement stages of the project regarding technical aspects of the project design and will make modifications to the project design, as necessary.

Objective 3: Living Shoreline Construction (April to June 2026, 3 months)

- Gloucester staff will meet on site with VIMS-SSP, selected contractor and subs (if applicable) to discuss the project approach and clear them for starting work.
- VIMS-SSP will conduct pre-construction monitoring with an elevation survey, drone imagery, and georeferenced ground photography.
- The procured contractor will construct the living shoreline including the widening of the beach, heightening of dunes, and installation of plants and rock sills as permitted, along with any other grant related activities.
- Gloucester staff will oversee construction and ensure compliance with all grant terms and conditions.

Objective 4: Post construction monitoring of living shoreline (July 2026 to June 2027, 12 months)

- Gloucester staff will check on the site after construction and meet with VIMS-SSP and maintenance staff to review the maintenance plan.
- Gloucester County will contract with VIMS-SSP to conduct post-construction monitoring of the site.
- VIMS-SSP will conduct a 1-year post-construction survey that focuses on determining any rapid changes in substrate elevation and inordinate plant mortality.

Outline a plan of action laying out the scope and detail of how the proposed work will be accomplished with a timeline identifying expected completion dates. Determine milestones for the project that will be used to track progress. Explain what deliverables can be expected at each milestone, and what the final project deliverables will be. Identify other project partners

Approach, Milestones, and Deliverables*: [B. Supporting - 5 Approach Milestones and Deliverables.pdf](#)

Where applicable, briefly describe the relationship between this project and other past, current, or future resilience projects. If the applicant has received or applied for any other grants or loans, please identify those projects, and, if applicable, describe any problems that arose with meeting the obligations of the grant and how the obligations of this project will be met

Relationship to Other Projects*:

See attached document titled, "B. Supporting - 6 Relationship to other projects"

For ongoing projects or projects that will require future maintenance, such as infrastructure, flood warning and response systems, signs, websites, or flood risk applications, a maintenance, management, and monitoring plan for the projects must be provided

Maintenance Plan*: [B. Supporting - 7 Maintenance Plan.pdf](#)

Describe how the project meets each of the applicable scoring criteria contained in Appendix B. Documentation can be incorporated into the Scope of Work Narrative

Criteria*:

Eligible Projects - Wetland/floodplain restoration; Living Shoreline- 25 pts.
Social Vulnerability Index Score - SVI Score -0.3 - 0 pts.
Community scale of benefits - More than one census block - 30 pts.
Expected lifespan of project - Over 20 Years - 10 pts.
Other -
Remedy for NFIP probation or suspension - No - 0 pts
Proposed project part of a low-income geographic area - Yes - 10 pts
Proposed project implements a Chesapeake Bay TMDL BMP - Yes - 5 pts.
TOTAL POINTS - 80

Budget

Budget Summary

Grant Matching Requirement*: LOW INCOME - Projects that will result in nature-based solutions - Fund 95%/Match 5%

Is a match waiver being requested?

Match Waiver Request No

Note: only low-income communities are eligible for a match waiver.

*:

I certify that my project is in a low-income geographic area: Yes

Total Project Amount (Request + Match)*: \$2,565,000.00
**This amount should equal the sum of your request and match figures

REQUIRED Match Percentage Amount: \$128,250.00

BUDGET TOTALS

Before submitting your application be sure that you meet the match requirements for your project type.

Match Percentage: 5.00%
Verify that your match percentage matches your required match percentage amount above.

Total Requested Fund Amount: \$2,436,750.00

Total Match Amount: \$128,250.00

TOTAL: \$2,565,000.00

Personnel

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Fringe Benefits

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Travel

Description	Requested Fund Amount	Match Amount	Match Source
No Data for Table			

Equipment

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

Supplies

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

Construction

Description	Requested Fund Amount	Match Amount	Match Source
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Construction & Monitoring	\$2,436,750.00	\$128,250.00	Cash
	\$2,436,750.00	\$128,250.00	

Contracts

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

Maintenance Costs

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

PreAward and Startup Costs

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

Other Direct Costs

Description	Requested Fund Amount	Match Amount	Match Source
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No Data for Table

Long and Short Term Loan Budget - Projects - VCFPF

Budget Summary

Are you applying for a short term, long term, or no loan as part of your application?

If you are not applying for a loan, select "not applying for loan" and leave all other fields on this screen blank

Long or Short Term*: Not Applying for Loan

Total Project Amount: \$0.00

Total Requested Fund Amount: \$0.00

TOTAL: \$0.00

Salaries

Description	Requested Fund Amount
-------------	-----------------------

No Data for Table

Fringe Benefits

Description	Requested Fund Amount
No Data for Table	

Travel

Description	Requested Fund Amount
No Data for Table	

Equipment

Description	Requested Fund Amount
No Data for Table	

Supplies

Description	Requested Fund Amount
No Data for Table	

Construction

Description	Requested Fund Amount
No Data for Table	

Contracts

Description	Requested Fund Amount
No Data for Table	

Other Direct Costs

Description	Requested Fund Amount
No Data for Table	

Supporting Documentation

Supporting Documentation

Named Attachment	Required	Description	File Name	Type	Size	Upload Date
Detailed map of the project area(s) (Projects/Studies)		Map of Project location	Gloucester Point Beach Park - Map of Project Location.pdf	pdf	2 MB	11/22/2024 12:55 PM
FIRMette of the project area(s) (Projects/Studies)		FIRMette of the project location.	Gloucester Point Beach Park - FIRMette.pdf	pdf	693 KB	11/22/2024 12:49 PM

Historic flood damage data and/or images (Projects/Studies)	Historic Flood Damage for the project area.	B. Supporting - 1 Project info - b Historic flooding data 1.pdf	pdf	115 KB	01/13/2025 01:32 PM
A link to or a copy of the current floodplain ordinance	Gloucester County, VA Floodplain Ordinance	B. Supporting - 1 Project info - f Gloucester Virginia Floodplain Ordinance.pdf	pdf	249 KB	11/22/2024 12:46 PM
Maintenance and management plan for project	Maintenance plan for project.	B. Supporting - 7 Maintenance Plan 1.pdf	pdf	133 KB	01/13/2025 01:36 PM
A link to or a copy of the current hazard mitigation plan	Link to the Middle Peninsula Regional All Hazards Mitigation Plan.	Gloucester Point Beach Park - link to HMP.pdf	pdf	96 KB	11/22/2024 12:49 PM
A link to or a copy of the current comprehensive plan	Gloucester County Comprehensive Plan	Gloucester Point Beach Park - Gloucester County Comprehensive Plan.pdf	pdf	33 MB	11/22/2024 12:50 PM
Social vulnerability index score(s) for the project area	Social Vulnerability Score	SV Score.pdf	pdf	77 KB	11/22/2024 01:00 PM
Authorization to request funding from the Fund from governing body or chief executive of the local government	Authorization and Match Letter from Gloucester County, VA	241030 MPPDC support letter GP Beach park.pdf	pdf	37 KB	11/22/2024 12:53 PM
Signed pledge agreement from each contributing organization	Authorization and Match Letter from Gloucester County, VA	241030 MPPDC support letter GP Beach park.pdf	pdf	37 KB	11/22/2024 12:53 PM
Maintenance Plan					
<i>Benefit-cost analysis must be submitted with project applications over \$2,000,000. in lieu of using the FEMA benefit-cost analysis tool, applicants may submit a narrative to describe in detail the cost benefits and value. The narrative must explicitly indicate the risk reduction benefits of a flood mitigation project and compares those benefits to its cost-effectiveness.</i>					
Benefit Cost Analysis	BCA for the project.	B. Supporting - 1 Project info - e BCA 1.pdf	pdf	87 KB	01/13/2025 01:34 PM
Other Relevant Attachments	Relationship to other projects.	B. Supporting - 6 Relationship to other projects.pdf	pdf	208 KB	11/22/2024 02:57 PM

Letters of Support

Description	File Name	Type	Size	Upload Date
Letter of Support from Gloucester County	241030 MPPDC support letter GP Beach park.pdf	pdf	37 KB	11/22/2024 12:54 PM
Support letter from King & Queen County.	King Queen County_Support Letter for Fight the Flood - Round 5.pdf	pdf	145 KB	01/13/2025 01:27 PM
Support letter from King William County.	King WilliamCounty_Letter of Support to MPPDC_10082024.pdf	pdf	1 MB	01/13/2025 01:28 PM
Support letter from Mathews County.	Mathews_CFPF Application Support Letter.pdf	pdf	355 KB	01/13/2025 01:27 PM
Support letter from Middlesex County.	Middlesex County_Support letter for MPPDC_FTF_flood.pdf	pdf	322 KB	01/13/2025 01:26 PM
Support letter from the Three Rivers Health District.	Three River Health District_LetterofSupportFloodPreparedness.pdf	pdf	154 KB	01/13/2025 01:28 PM
Support letter from the Town of Tappahannock.	Town of Tappahanock_Letter Supporting - Round 5.pdf	pdf	100 KB	01/13/2025 01:26 PM
Support letter from the Town of Urbanna.	Town of Urbanna Letter of Support Rnd 5.pdf	pdf	153 KB	01/13/2025 01:26 PM
Support letter from the Town of West Point.	West Point_CFPF Application Support Letter Round 5.pdf	pdf	189 KB	01/13/2025 01:25 PM

Resilience Plan

Resilience Plan

Description	File Name	Type	Size	Upload Date
Cultural and Historic Preservation Designation.	B. Fa. Gloucester Point Beach Park - Cultural and Historic Preservation designation.pdf	pdf	685 KB	01/13/2025 02:00 PM
Flood Exposure Map	Gloucester Point Beach Park - Flood Exposure Map.pdf	pdf	769 KB	01/13/2025 01:58 PM

Low nature-based recreation need.	B. Fd. Gloucester Point Beach Park - low nature-based recreation need.pdf	pdf	634 KB	01/13/2025 01:59 PM
MPPDC Resilience Plan Approved 8/19/21.	Resilience Plan_Aproved-8_19_DCR-packet_letterandplan.pdf	pdf	850 KB	10/21/2024 10:22 AM
Population impacted by this project.	B. Supporting - 1 Project info - a population.pdf	pdf	453 KB	01/13/2025 01:54 PM
Potential freshwater mussel richness.	B. Fc. Gloucester Point Beach Park - potential freshwater mussel richness.pdf	pdf	639 KB	01/13/2025 02:00 PM
Project alternatives.	B. Supporting - 3 Alternatives.pdf	pdf	274 KB	01/13/2025 01:56 PM
proximity to Floodplain and Potential for Recurrent Flooding	Proximity to Floodplain and Potential for Recurrent Flooding.pdf	pdf	224 KB	01/13/2025 01:57 PM
Scenic Preservation designation.	B. Fb. Gloucester Point Beach Park - Scenic Preservation designation.pdf	pdf	596 KB	01/13/2025 02:00 PM
Watershed impact model results	B. Fe. Gloucester Point Beach Park - watershed impact model results.pdf	pdf	620 KB	01/13/2025 01:59 PM

A. Application Form for Grant and Loan Requests for All Categories

Virginia Department of Conservation and Recreation
Virginia Community Flood Preparedness Fund Grant Program

Title: Gloucester Point Beach Park Living Shoreline

Name of Local Government: Middle Peninsula Planning District Commission (MPPDC)

Category Being Applied for (check one):

- ☐ Capacity Building/Planning
☒ Project
☐ Study

NFIP/DCR Community Identification Number (CID): 510071

Name of Authorized Official and Title: Lewis Lawrence, Executive Director

Signature of Authorized Official: 

Mailing Address (1): PO Box 286

Mailing Address (2): 125 Bowden Street

City: Saluda **State:** VA **Zip:** 23149

Telephone Number: (804) 758-2311 **Cell Phone Number:** ()

Email Address: llawrence@mppdc.com

Contact and Title (If different from authorized official): Jackie Rickards, Planner

Mailing Address (1): PO Box 286

Mailing Address (2): 125 Bowden Street

City: Saluda **State:** VA **Zip:** 23149

Telephone Number: (804) 758-2311 **Cell Phone Number:**

Email Address: jrickards@mppdc.com

Is the proposal in this application intended to benefit a low-income geographic area as defined in the Part 1 Definitions? Yes X No

Project Grants and Loans (Check All that Apply – Hybrid Solutions will include items from both the “Nature-Based” and “Other” categories)

Nature-based solutions

- ☐ Acquisition of property (or interests therein) and/or structures for purposes of allowing floodwater inundation, strategic retreat of existing land uses from areas vulnerable to flooding; the conservation or enhancement of natural flood resilience resources; or acquisition of structures, provided the acquired property will be protected in perpetuity from further development, and where the flood mitigation benefits will be achieved as a part of the same project as the property acquisition.
- ☐ Wetland restoration.

- ☒ Floodplain restoration.
- ☐ Construction of swales and settling ponds.
- ☒ Living shorelines and vegetated buffers.
- ☐ Permanent conservation of undeveloped lands identified as having flood resilience value by *ConserveVirginia* Floodplain and Flooding Resilience layer or a similar data driven analytic tool, or the acquisition of developed land for future conservation.
- ☐ Dam removal.
- ☐ Stream bank restoration or stabilization.
- ☐ Restoration of floodplains to natural and beneficial function.

Other Projects

- ☐ Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.
- ☐ Dam restoration.
- ☐ Beneficial reuse of dredge materials for flood mitigation purposes.
- ☐ Removal or relocation of structures from flood-prone areas where the land will not be returned to open space.
- ☐ Structural floodwalls, levees, berms, flood gates, structural conveyances.
- ☐ Storm water system upgrades.
- ☐ Medium and large-scale Low Impact Development (LID) in urban areas.
- ☐ Acquisition of property (or interests therein) and/or structures for purposes of allowing floodwater inundation, strategic retreat of existing land uses from areas vulnerable to flooding; the conservation or enhancement of natural flood resilience resources; or acquisition of structures, provided the acquired property will be protected in perpetuity from further development, and where the flood mitigation benefits will **not be** achieved as a part of the same project as the property acquisition.
- ☐ Other project identified in a DCR-approved Resilience Plan.

Location of Project or Activity (Include Maps): Gloucester County - Please see the attached corresponding maps for this application.

NFIP Community Identification Number (CID#): 510071

Is Project Located in an NFIP Participating Community? ☒ Yes ☐ No

Is Project Located in a Special Flood Hazard Area? ☒ Yes ☐ No

Flood Zone(s) (If Applicable): AE & VE

Flood Insurance Rate Map Number(s) (If Applicable): 51073C0257F

Total Cost of Project: \$2,565,000

Total Amount Requested: \$2,436,750

Amount Requested as Grant: \$2,436,750

Amount Requested as Project Loan (Long-Term, not including short-term loans for up-front costs): \$0

RVRF Loan Amount Requested as Project Match (Not including short-term loans for up-front costs): \$0

Amount Requested as Short-Term loan for Up-Front Costs (not to exceed 20% of amount requested as Grant): \$0

For projects, planning, capacity building, and studies in low-income geographic areas: Are you requesting that match be waived? ☐ Yes ☒ No

B. SCOPE OF WORK NARRATIVE

General Requirements

1. Need:

- a. Specific problem being solved (not just that flooding exists or may occur in the future).**

This proposal, titled “Gloucester Point Beach Park Living Shoreline,” requests funding for construction of a living shoreline project that will include widening of the beach, heightening dunes, installation of plants and rock sills at Gloucester Point Beach Park in Gloucester County (**Figure 1**) to reduce flooding at this county-owned asset, which serves both local and regional communities.

By widening the beach riverward using a gapped rock-attached headland breakwater system and sand, the dune will be able to increase in width and height providing greater protection during storms. A headland breakwater located adjacent to the boat ramp will help to hold the sand so that it is not lost to deeper depths in the river.

Overall, the system (**Figure 2**) will consist of 4 structures: a 64 ft extension to the existing spur at the park’s northern boundary, 80 ft and 112 ft structures on either side of the existing fishing pier, and a 209 ft structure adjacent to the boat ramp at the southern boundary. Sand will be placed along the shoreline, attaching the structures, and creating two stable embayments.

In addition, behind the spur extension and two structures at the pier, a dune will be created and planted with a crest elevation of +7.4 ft above mean low water (MLW) providing protection from a 50-yr flood level (FEMA, 2021). In the areas between the embayments and behind the southern structure, the dune will be somewhat narrower.

The scope of the proposed project involves permitting, procurement, and construction of a living shoreline consisting of the widening of the beach, increasing the height of the dunes, and installation of plants and rock sills to mitigate flooding and erosion on-site and to sustain the operation of this public access asset for recreational and economic purposes.

Gloucester County staff will manage permitting, procurement, and construction of the project while staff from the Virginia Institute of Marine Science Shoreline Studies Program (VIMS-SSP) staff will assist with project procurement and permitting and will conduct post construction monitoring.



Figure 1 - Aerial Photograph Showing the Gloucester Point Beach Park and Associated Facilities.

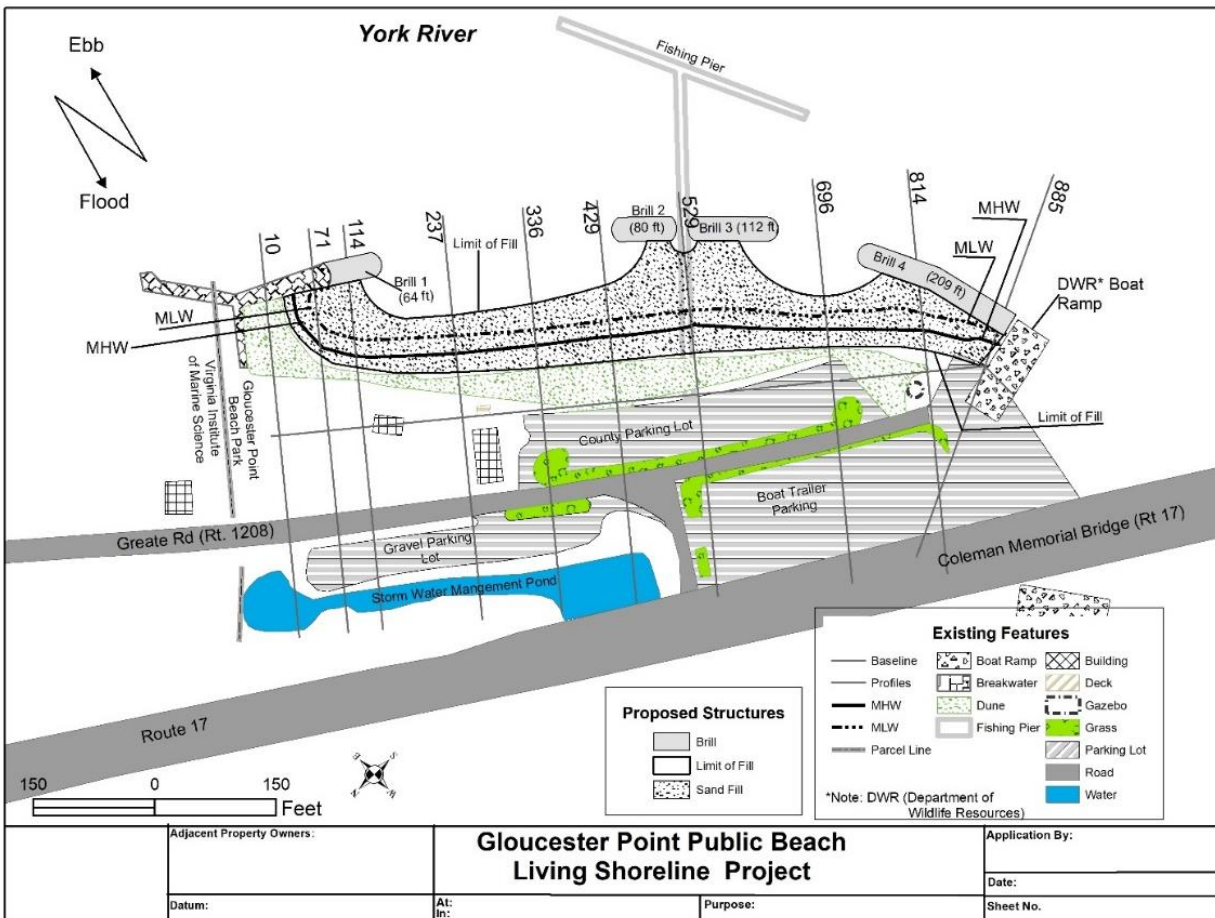


Figure 2 - Living Shoreline Design (Virginia Institute of Marine Science Shoreline Studies Program, 2023).

Adjacent to the Park, VIMS-SSP staff designed and oversaw the construction of a living shoreline along VIMS property consisting of attached headland breakwaters consisting of rock, sand, and plants. Part of the design for the VIMS shoreline project included a stone spur extending southwest from the VIMS revetment by 70 feet across the shoreline owned by Gloucester County. This had a significant positive impact by abating the chronic erosion along that section of the publicly-accessible Gloucester Beach. As part of the current breakwater design the spur will be lengthened slightly to extend the diffraction point and work better within the current project design. As an added benefit the rocks have created and will continue to create excellent habitat for the local small fish species as well as hard substrate for oyster settlement and growth.

Gloucester Point is located at the southern end of Gloucester County, Virginia, on the York River. It has a long history of being a hub for public access and both recreational and commercial use in the County, including ferry transportation and a working waterfront for various fisheries in the distant past, to more recent boating, fishing, and beach recreational access. The site is the most popular public tidal boating site and the only public beach access in the County. In addition, the public beach includes a freely accessible and publicly licensed fishing pier.

According to DCR's ConserveVirginia model, the project area:

- Is identified for cultural and historic preservation,

- Is partially identified for scenic preservation,
- Has medium to high potential freshwater mussel richness,
- Has the second highest results in the watershed impact model, and
- Has a high level of nature-based recreation access.

The Middle Peninsula, including Gloucester Point and the Gloucester County-owned Gloucester Point Beach Park, is suffering from one of the highest rates of sea-level rise on the Atlantic seaboard and is experiencing increased effects from coastal and tidal flooding. Without sufficient mitigation efforts starting at the shoreline, secondary and tertiary effects of erosion, flooding, and drainage issues will continue to plague the Park through faster deterioration of aging infrastructure, degradation of natural habitats, and compromised maintenance and usability of the Park's facilities.

Gloucester Point Beach Park is an extremely visible and popular recreational site, supporting recreational as well as commercial fishing, boating, beach-going, and general recreational activities. The 5-acre property includes a 2,000 square foot building that houses public restroom facilities, staff storage and a concession room, a publicly accessible shoreline, a free public fishing pier, two boat landings, a play area, paved parking areas, and open green space. Flooding and erosion issues at the site are being exacerbated by continued sea-level rise and the increased frequency and severity of heavy rains and storms in the region. The living shoreline design was developed in a manner that will trap and slow the alongshore movement of sand, which has become a major issue for the County with regards to maintenance. Large sand deposits left by coastal flooding and daily wave activity frequently occur at the boat ramp. This requires many labor hours of County staff to remove the sand on a frequent basis, a situation that should improve with the construction of a rock breakwater spur to help trap the sediment and encourage its movement into deeper water in the river, rather than toward the boat ramp. Shoaling of the boat ramp often leaves the facility unusable for a week or more after flood events, which has major impacts to the recreational and commercial industries in the County and region.

Gloucester County is planning many improvements to the site over the coming years with the proposed project representing the most urgent and critical step to protecting and enhancing the property. The County has partnered with the VIMS-SSP to design a living shoreline solution to this critical public facility and is requesting funding to implement the project. The living shoreline project will utilize rock sills, while also widening and adding height to the existing beach and dunes and planting native dune grasses. Once constructed, the living shoreline will protect the Park through natural flood mitigation, thereby minimizing property damage, enhancing the resilience of public infrastructure, ensuring longer-term viability of a critical public asset, and significantly reducing the potential for injuries and/or loss of life.

b. Factors which contribute to the identified problem.

The Park's shoreline has been eroding at a rate of about 1 to 1.5 ft per year since 1994 (according to the VIMS-SSP Shoreline Change Database). The wave climate at the Park has an effective fetch of 7.2 miles, but its maximum fetch is 29 miles to the east. The York River channel experiences heavy use by commercial and military ships whose large wake affects the overall wave climate at Gloucester Point. The mean tide range at the site is 2.3 ft. Storms greatly impact this site on a regular and frequent basis. The storm surge elevation of the 10% frequency storm event is +6.2 ft MLW (FEMA, 2021) which frequently overtops the existing beach and dune. The open beach accesses allow water to flood directly

into the parking lot and the park itself. In addition, the grassy areas of the park are lower than adjacent areas so when the tide floods, it can become trapped due to the bowl effect and has difficulty receding after the storm.

The site receives sand transported south along the shoreline from updrift. However, as the updrift shorelines were protected, less sand became available to the littoral transport system, thereby reducing the amount of sand entering the Gloucester Point beach system. In addition, due to the currents and deep waters adjacent to the most southern end of the beach, sand is lost to the deeper waters of the York River channel. Overall, the Point is narrow so the beach and dune habitat cannot migrate without impacting park usage. By widening the beach toward the river using a gapped, rock attached headland breakwater system and sand, the dune will be able to naturally grow in width and height over time providing greater protection during storms.

The Park is over 40 years old and has been damaged several times by storms. Increased effects from coastal and tidal influence have worsened site flooding and drainage issues. Consistent flooding during heavy rains and storms effectively closes the park for public use until natural drainage occurs. Further, these issues accelerate the deterioration of aging infrastructure and natural habitats and compromise the maintenance and usability of the Park's facilities as flooding limits or prevents the use of the boat ramp and public-use facilities, creating significant public safety concerns.

c. Why the project is needed either locally or regionally.

Gloucester Point Beach Park is one of the first things seen from the U.S. Route 17 Coleman Bridge when entering Gloucester County and without this project, it will become an increasingly impacted asset and an increasingly monumental loss for the economy of Gloucester County and the Middle Peninsula.

The Park is the County's most popular public recreation site that also serves commercial seafood activity. It is the only public beach in the County. The site supports a wide range of beach, boating, and fishing recreational activities by providing a concession room, public restroom facilities, an accessible shoreline, free public fishing pier, two boat landings, a play area, paved parking areas, and open green space spanning five acres.

The Gloucester Point Archaeological District, located on Greate Road and Route 17 near Gloucester Point Beach, includes portions of Tyndall's Point Park, remnants of Confederate and Union fortifications (Confederates fortifications and earthworks helped block General George McClellan's efforts during the Peninsula Campaign), and the original colonial Gloucestertown site. The VIMS campus is located on the western half of colonial Gloucestertown.

Gloucester Point Beach Park is both a highly popular and critical resource for recreation and the local economy. As noted above, DCR's ConserveVirginia model identified the project area for cultural and historic preservation and scenic preservation and noted its value in providing a high level of nature-based recreation access. In addition, the Park was consistently ranked as "*Very Important*" in the 2016 Needs Assessment conducted by GreenPlay, LLC, where open-ended comments indicated that the beach needs to be cleaned up and improved. General improvements also ranked highly as a priority for County maintenance. In 2023, tourism in the Gloucester County included \$47.3 million total impact, which has

been steadily increasing from \$33.2 million in 2016. Most of this is related to ecotourism, which includes aquaculture tours, canoeing and kayaking tours, oyster harvesting tours, and wildlife charter cruises.

Recent growth suggests ecotourism is an emerging opportunity in the region as sales grew at an average annual rate of 3.2 percent between 2014 and 2019. For Gloucester County specifically, the marine economy – which consists of businesses dependent on marine resources – accounts for 11.4% of the total employment in the County, generating approximately \$19 million in wages (according to NOAA Coastal County snapshots). It should also be noted that these economic activities are more significant during the peak season, primarily in the warmer months. Despite continued maintenance of the facilities, the long-term viability of the site is in question without a resilience focused design intervention and the retrofitting and reconstruction of certain facilities.

d. How the project decreases the risk to public safety through flood risk reduction.

Gloucester Point is a hub for - recreational waterfront use including boating, recreational and commercial fishing, and beach recreation. The site is the most popular public tidal boating site and the only public beach access in the County. In addition, the public beach includes a freely accessible and publicly licensed fishing pier. Many people use this site.

Like many aging park facilities, the impacts of coastal and tidal influences have amplified drainage, maintenance, and public safety concerns at the Park. Improvements to the Park grounds are needed to ensure the economic, social, and environmental resilience of this location. The concession room/restroom building located on the site is over 40 years old and has been damaged several times in storms. The playground had deteriorated and was removed for safety reasons. This project will mitigate flooding and drainage issues before they negatively and irreversibly impact the Park.

The boat landings are compromised by shoaling. The proposed project will serve to provide much needed protection for the boat ramps and the safety of boat ramp users. Beyond public and commercial users, emergency services and marine patrol will have continued safe access to the boat ramp.

By widening the beach riverward with the use of rock, sand, and native plants, the dune will be able to grow in width and height providing greater protection during storms. Sand will be placed along the shoreline creating two stable embayments. In addition, a dune will be created and planted with a crest elevation of +7.4 ft MLW, providing protection from a 50-yr flood level (FEMA, 2021). The structures are slightly “over-designed” to provide increased hazard protection for a longer period of time. This approach significantly reduces the effects of flooding and slows the deterioration of Park facilities, thereby reducing safety concerns for citizens and visitors. At a future date, following shoreline construction, the County plans to construct Americans with Disabilities (ADA) compliant walkways over the top of the dunes to increase safe and equitable accessibility to the shoreline for more residents.

e. How the project protects or conserves natural resources.

The proposed project protects natural resources by widening the dunes with a living shoreline through placement of sand, rock, and plants native to the region. With only a narrow beach for protection, the dunes in the Park are impacted greatly during storms. Dunes are a relatively rare habitat in the southern Chesapeake Bay. They provide habitats for many different types of plants and animals, such as mammals

foraging for food and migrating and nesting shorebirds and song birds. As an added benefit, the rocks will make excellent habitat for the local small fish species as well as hard substrate for oyster settlement and growth, similar to observations at other living shorelines in the region.

The applicant and the property owner recognize the importance of avoiding harm to land owned by the Commonwealth which is adjacent to the County on both boundary lines as result of the construction elements of this project. The design for the proposed project was developed by experienced VIMS-SSP staff and will be constructed under the auspices of experienced contractors, both of which understand that adverse impacts must be avoided and considered in the design and implementation of the project. The proposed project will work with the permitting agency, designers, and contractors to ensure that the project functions with no adverse impacts. Post-construction monitoring conducted by VIMS-SSP will ensure that the project's ecological functionality is intact and operating at an optimal level.

f. Who or what is protected.

Beyond the dunes, habitats, and local species, the project protects the Park facilities and all of its users. The 5-acre property includes a 2,000 square foot building that houses public restroom facilities, staff storage, and a concession room, an accessible shoreline, a free public fishing pier, two boat landings, a play area, paved parking areas, and open green space. Protected Park users include the public, commercial users like fishermen and ferries, and emergency services and marine patrol.

The site is the most popular public tidal boating site and only public beach access in the County. In addition, the public beach includes a freely accessible and publicly licensed fishing pier.

Gloucester Point Beach Park, as the primary public waterfront facility, is envisioned to serve the next generation of users as a thriving recreational and public waterfront access site for the County and the wider region. Protecting the beach and park from the impacts of flooding will enable the area to reach its full potential, prolonging and enhancing utilization by both residents and visitors. Given the area's critical role in the seafood industry, the proposed project will also mitigate potential impacts on the industry and local economy as a whole.

g. The safety, threats, or environmental concerns related to flood risk.

The entirety of the site (1255 Greate Road, Gloucester Point, VA 23062, 37.24634, - 76.50287) is located within a mapped floodplain, with portions located within FEMA Flood Zones AE and VE. Due to the Park's adjacency to the York River and relatively low elevation, the site has an extensive history of flooding that has resulted in significant impacts upon infrastructure and the environment. For example, the Park has long been, and continues to be, impacted by tropical, subtropical, and Nor'easter events. These conditions create safety threats due to deteriorating infrastructure, health hazards from floodwaters, and negative environmental impacts such as habitat deterioration and shrinking coastlines.

Since 2003 there have been several significant coastal events resulting in flooding impacts to the services building and site:

- Hurricane Isabel in 2003, resulting in 5 feet of water in the concession room/restroom building
- A nor-easter in 2005 resulting in 3 feet of water in the concession room/restroom building

- A nor'easter in 2010
- A nor'easter in June 2011
- Hurricane Irene in August 2011 that resulted in 1 foot of water in the concession room/restroom building
- A nor'easter in 2012
- A coastal storm in October 2015
- Hurricane Matthew (2016): This storm caused severe flooding from intense rainfall and storm surges, leading to damage to infrastructure and erosion along shorelines.
- Tropical Storm Michael (2018): Gloucester suffered heavy flooding
- Nor'easters: In October 2022, remnants of a nor'easter associated with Hurricane Ian brought substantial flooding, pushing water levels up to 2-3 feet in some places. This was noted as some of the worst flooding in 10-15 years, particularly at Gloucester Point, and led to erosion along shorelines and road closures.
- Tropical Storm Isaias (2020): This storm triggered flooding across eastern Virginia, and Gloucester experienced issues with standing water and road blockages, contributing to erosion of coastal areas.

The damage from Hurricane Isabel in 2003 was extensive, and it is likely the storm of record in the Park's over 40-year existence. In addition to approximately five feet of water in the building, the storm ripped up the Park's pier, pushed the stage through one of the services building's cinderblock walls, and damaged the playground that was present at the time of the event.

The site is subjected regularly to storm flooding events, though perhaps not to the same extent as Isabel. Nearly every nor'easter results in flooding of the boat landing, parking lot, and Park with standing water that is exacerbated by poor drainage. **Figure 3** below illustrates present site conditions, including instances of flooding and the vulnerability of facilities.

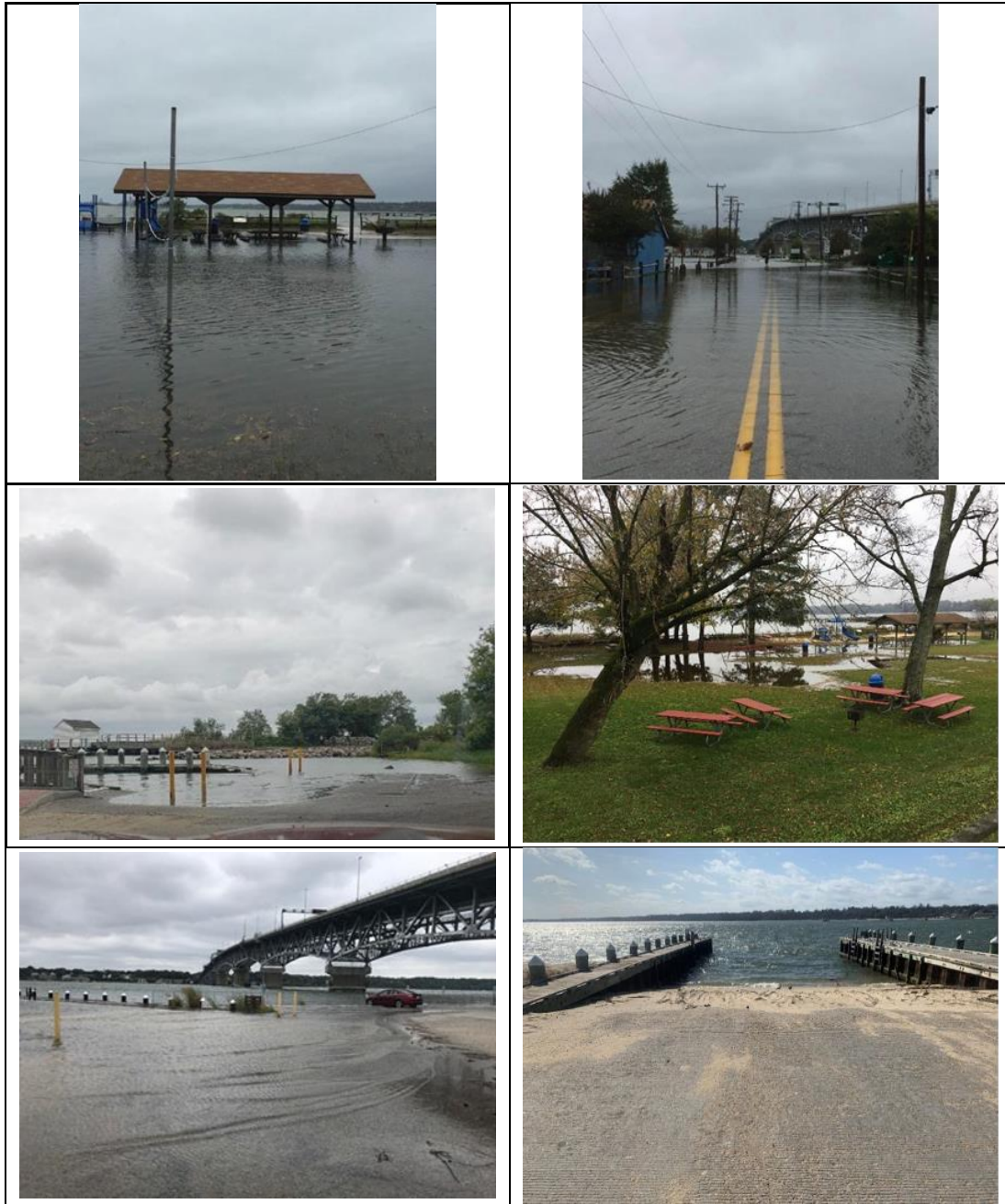


Figure 3 - Site Conditions During Recent Flooding Events.

According to a recent study conducted by the Center for Coastal Resources Management, a 1.5-foot rise in sea level coupled with a three-foot storm surge - similar to what would be experienced in a strong tropical storm - would lead to 13% of Gloucester County's land mass being flooded – including 118 miles of roads. Notably, only 3% of this projected flood area is currently developed.

Gloucester County's Building and Engineering Department administers the requirements of the NFIP program, Community Rating Service (CRS), and the County's Floodplain Management Ordinance may be accessed at the following link: http://gloucestercounty-va.elaws.us/code/coor_ch8.5.

h. Groups who might directly benefit from this flood risk reduction effort.

Gloucester Point Beach Park provides access to the only public beach in the County. While some County residents have private access to waterways along the miles of shoreline along the York River and Chesapeake Bay, this Park ensures public access for all. The fishing pier attracts underserved individuals who cannot afford to visit other public and private sites. The County covers the cost of a blanket fishing permit, and the Park does not charge pier access or parking fees, which makes it accessible to residents and visitors from areas with fewer resources. In some cases, individuals fish at the park to supplement their food supply and support their livelihood. For many low-income and underserved populations, this is a key site to access the water and fish without needing to pay for a personal license. By enhancing this beach and mitigating flood impacts, the experience for all park users will be improved.

Gloucester County's 2020 Census population was 38,711. The County is experiencing a 5% growth rate, which will place an increased burden on the public beach. The map below (**Figure 4**) identifies the section of the County where the project will occur (red dot) as being within a designated Opportunity Zone and therefore meets the DCR definition of a "Low-income Geographic Area."

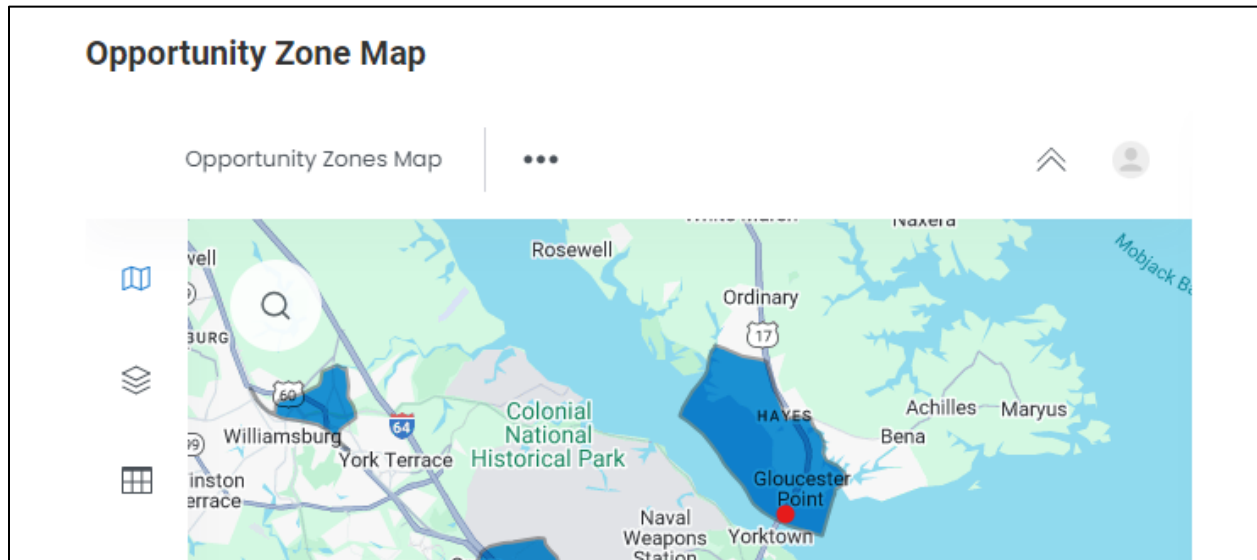


Figure 4 - Opportunity Zones with the site of the Gloucester Point Beach Park represented in red.

Social vulnerability is the ability of individuals or groups to prepare for and recover from hazards, like flooding. The Virginia Social Vulnerability Index (SVI) Viewer indicates Gloucester Point Beach Park has a "Low Social Vulnerability" score (**Figure 5**).

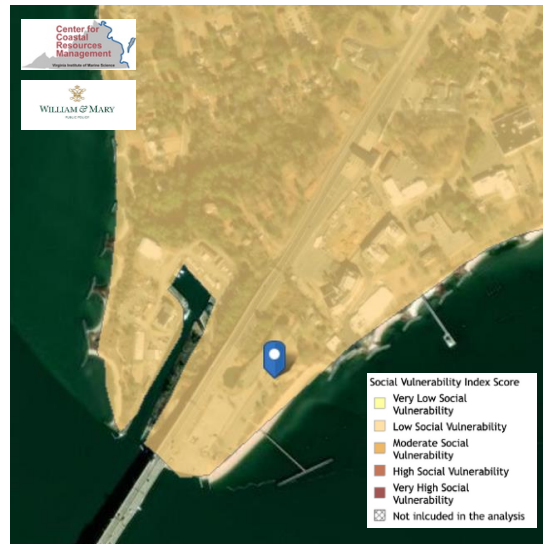


Figure 5 - Social Vulnerability Index Score.

Additional groups who might directly benefit from this flood risk reduction effort include tourists, history buffs, businesses visited by those tourists and history buffs, students, commercial users like fishermen and ferries, emergency services, and marine patrol. The access and amenities at the Park attract a wide range of users beyond Gloucester County residents.

i. What would happen (or not happen) if the applicant does not receive funding?

Without the construction proposed, the site and public infrastructure will be compromised, resulting in degradation of the site and loss of public assets. Flooding propensity remains the biggest weakness of Gloucester Point Beach Park. The area around the Park is prone to frequent flooding and lies within the floodplain of the York River. Any category of storm will flood the site, damaging the property and precluding access. Moreover, rising sea levels will have a negative impact on the property, inching the water closer to the site's active resources and increasing the likelihood of significant flooding. **Figure 6** below illustrates flood levels combined with sea-level rise and their effects on the site. In particular, floods in 50 years pose an issue to the many structures on site; a living shoreline will support efforts to mitigate the effects of exceptional floods and sea level rise 50 years and beyond.

The additional improvements the County intends to implement over the coming years for the Park cannot occur without protecting the shoreline. There is no need to seek funding of a higher and wider fishing pier if the parking lot and infrastructure are not protected. The same is true for replacing the bathrooms that routinely flood. Constructing a raised structure and accompanying walkway would be wasteful if shoreline stabilization is not funded. Installing the living shoreline is the first and most crucial step, and it is also hoped that completing this project will aid in securing funds for other improvements to the Park.

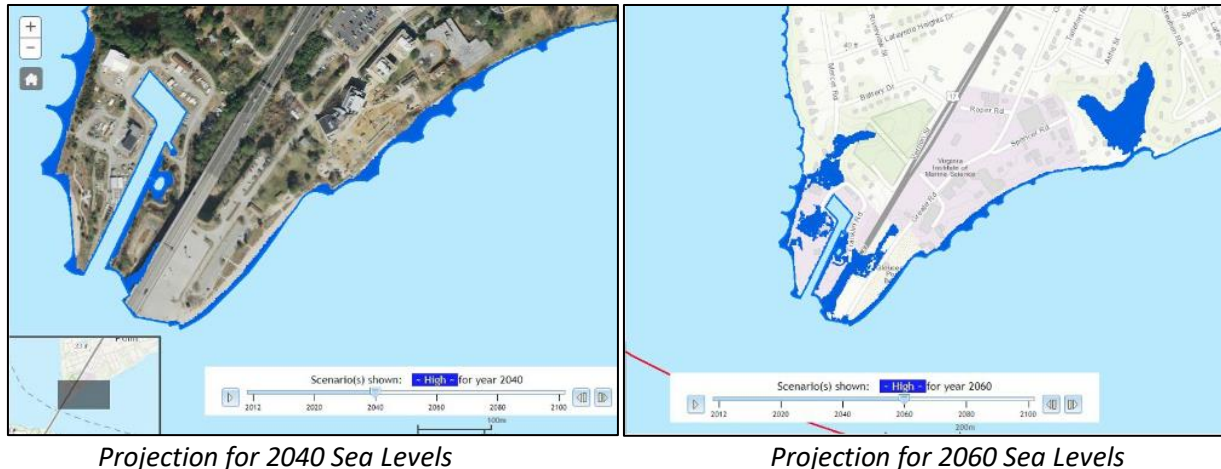


Figure 6 - Site Sea Level Projections.

- j. **Alternatives analysis of the viability of the project, how selected project reduces risk to populations at risk of flooding. Provide examples of current or previous related projects, data, outcomes, etc. that justify the approach chosen. Include how long and how much protection to be achieved.**

Under the “do nothing” alternative, the site and public infrastructure will be compromised, resulting in degradation of the site and loss of public assets.

The proposed living shoreline project is the region’s preferred nature-based solution for mitigating impacts of tidal flooding, storm surge, and sea level rise. A living shoreline will help reduce the effects of exceptional floods and sea level rise for 50 years or more. Additionally, since a living shoreline is feasible at this location, a hardened or non-living shoreline is not permissible per state regulations, thus limiting the alternatives to implementing a living shoreline or doing nothing.

2. Goals and Objectives:

- a. **Goals should be listed as an outcome that solves the problem identified.**

Goal 1: Reduced flooding and sustained use of the Gloucester Point Beach Park facility with continued, or increased, public access to local coastal waterways and recreational areas to the greatest extent possible.

Goal 2: Strengthened local economy through increased boat ramp usage due to enhanced accessibility.

- b. **Objectives must be specific, measurable, and timebound.**

Objective 1: Project Permitting (July 2025 – January 2026, 7 months --- *Note that all timelines are contingent upon the actual execution date of an award contract and are subject to change*)

- MPPDC staff will enter into an agreement with Gloucester County, whose staff will oversee the permitting process and attain all necessary permits for construction. County staff will meet with VIMS-SSP staff to review the entire project plan and discuss the scope as well as the scope that VIMS-SSP will be preparing to supplement the procurement and permitting processes.

- The VIMS-SSP, which developed the project design (for the 50-yr flood), will be contracted to provide assistance to Gloucester County staff regarding technical aspects of the project design and will make modifications to the project design, as necessary.

Objective 2: Project Procurement (February 2026 – April 2026, 3 months)

- Gloucester County staff will procure a qualified contractor for construction of the permitted project. This includes meeting with Purchasing to get the project ready for bid, hosting an onsite meeting with interested bidders, and reviewing bidder replies after Purchasing has verified completion of submittals.
- VIMS-SSP will provide assistance and guidance throughout the procurement stages of the project regarding technical aspects of the project design and will make modifications to the project design, as necessary.

Objective 3: Living Shoreline Construction (April 2026 – June 2026, 3 months)

- Gloucester County staff will host a meeting on site with VIMS-SSP, selected contractor and subs (if applicable) to discuss the project approach and clear them for starting work. Staff will have time on-site, on the phone, and other communications with the contractor to oversee the work during construction.
- VIMS-SSP will conduct pre-construction monitoring with an elevation survey, drone imagery, and georeferenced ground photography. Although the contractor will conduct a pre-construction survey of the site, VIMS-SSP will perform their own survey to ensure that consistent cross-sections and specific points can be monitored after construction and into the future.
- The procured contractor will construct the living shoreline including the widening of the beach, heightening of dunes, and installation of plants and rock sills as permitted, along with any other grant related activities. DCR funds will be used for construction, labor and materials.
- Gloucester County staff will oversee construction and ensure compliance with all grant terms and conditions.
- VIMS-SSP will conduct a post-construction as-built survey showing the actual final location and dimensions of structures, substrate elevations, and the location and types of vegetation plantings. The as-built survey will serve as the baseline from which changes are measured and evaluated regarding the success and effectiveness of the project in the future. VIMS-SSP will also conduct georeferenced ground photographic documentation of the site from the same strategic permanent stations used in the pre-construction phase as well as additional ones that document the structures. Additionally, vertical drone imagery will be mosaicked in Esri ArcPro and used as a basemap to show the final planform extent of the project and to document the change from the pre-construction condition. Oblique drone imagery will document overall site changes and how the project fits within the geomorphic region.

Objective 4: Post construction monitoring of living shoreline (July 2026 – June 2027, 12 months)

- Gloucester County staff will check on the site after construction ends and meet with VIMS-SSP and maintenance staff to review the maintenance plan.
- Gloucester County will contract with VIMS-SSP to conduct post-construction monitoring of the site.
- VIMS-SSP will conduct a one-year post-construction survey that focuses on determining if any rapid changes in substrate elevation and inordinate plant mortality might indicate design flaws or deleterious conditions that need to be addressed with remedial measures to prevent future problems. It will show how the site has adjusted to the physical energy (waves and tides) impacting the site over its first year. It also will be used as the base for long-term viability and effectiveness of

the living shoreline. This monitoring survey will document location and dimensions of structures, substrate elevations, and the location, types, and coverage of vegetation plantings to ensure the project continues to function as designed. Georeferenced ground photography and oblique and vertical drone imagery also will be taken and compared to previous imagery. These images will show the changes over the first year along the project site as well as any adjacent effects that may be occurring. Elevations will be surveyed using a Trimble R12 real-time kinematic global positioning system (RTK-GPS) with benchmark data processed through Centerpoint. Survey data will be processed in Trimble Business Center and analyzed in Esri ArcPro. Drones will be flown by a Federal Aviation Administration certified remote pilot.

VIMS-SSP has a Topodrone DJI Mavic 2 Pro PPK with LIDAR 200 Ultra. The entire process from data collection through analysis can be finicky. If it is possible, this drone will be used to collect high resolution elevation data along the entire project during the three time periods, pre-construction, post-construction, and after 1 year. This data will be used to develop a digital elevation model (DEM) of the project at each date. Subsequent surveys will be used to calculate three-dimensional change along the site so that erosion and accretion along with volumes can be determined. However, successful deployment, data collection and analysis are not guaranteed for this monitoring project as no funds are included for outsourcing LIDAR data collection should our drone not perform. If this occurs, the RTK-GPS survey will be expanded to better convey the topography of the entire site.

c. Objectives be achievable within the agreement period.

The grant period of performance for projects is three years. All objectives and goals are scheduled to be achieved within the grant contract period. The project is scheduled to be constructed in one-two years depending on the permitting process and restrictions and monitored over the remaining duration of the project at regular intervals.

3. Work Plan:

a. What are the major activities and tasks?

- Permitting: Use the design developed by VIMS-SSP to develop and submit the Joint permit application (JPA).
 - Task 1 – Contract with VIMS-SSP.
 - Task 2 – Submit JPA and provide assistance and guidance throughout the permitting process.
- Procurement of the construction contract:
 - Task 1 – VIMS-SSP and Gloucester County will work together to develop bid packet.
 - Task 2 – Gloucester County to procure contractor and execute contract for construction.
- Construction:
 - Task 1 – The contract will construct the project according to all the requirements of the permit.
 - Task 2 – Gloucester County staff will oversee construction and ensure compliance with all grant terms and conditions.
- Monitoring:
 - Task 1 – Pre-construction monitoring will be completed by VIMS-SSP.
 - Task 2 – Post-construction monitoring will be completed by VIMS-SSP.
 - Task 3 – One-year post-construction monitoring will be completed by VIMS-SSP.

b. Who is responsible for completing the activities and tasks?

The following entities are responsible for the identified activities:

- Middle Peninsula Planning District Commission (MPPDC) staff will serve as the applicant of record and grant administrator.
- Gloucester County staff will oversee the permitting process and attain all necessary permits for construction, procure a qualified contractor for construction, and oversee construction to ensure compliance with all grant terms and conditions. The roles of administration, procurement, the County Attorney and clerical assistance will be provided as needed. Gloucester County will contract VIMS-SSP.
- A contractor will be responsible for construction.
- VIMS-SSP to provide assistance and guidance throughout the procurement stages of the project regarding technical aspects of the project design, make modifications as necessary, and conduct monitoring through ground and drone imagery and LiDAR elevation surveys.

c. What is the timeframe for accomplishing activities and tasks?

All activities will commence within 12 months of the agreement date and will be completed within the three-year grant contract. The project is scheduled to be constructed in 1-2 years and monitored for an additional year. Should delays occur with regards to the timing of the planting of the grasses and growing season, project construction may exceed the two-year period and push the entire project beyond the three years if and only if that becomes necessary. The County prefers to complete the project as soon as possible.

d. Identify the required partners and where they are represented in the workplan.

MPPDC will collaborate with Gloucester County and VIMS-SSP staff to ensure all activities and tasks are completed within the three-year timeframe.

e. Deliverables

The main deliverables of this project include the following:

- Finalized permit applications to approve the construction of the living shoreline.
- Successfully procured construction contract.
- Construction of the living shoreline at Gloucester Point Beach Park.
- Post-construction monitoring data collection and reports by VIMS-SSP that highlight the success of the living shoreline.

f. Maintenance plan tied to the identified viability of the project. Plan for sustaining the project after the agreement period (if applicable).

VIMS-SSP will use post-construction monitoring data to evaluate the effectiveness of the project ensuring the dune is growing and retaining sand, which is crucial for shoreline stabilization.

County staff, who have maintained the park for over 40 years, will conduct long-term maintenance. VIMS-SSP staff will provide guidance on proper maintenance techniques to the County staff. Standard maintenance of living shorelines includes:

- Debris removal: Regular removal of debris, such as litter, to prevent accumulation that could disrupt the natural processes of the living shoreline and affect its stability.
- Vegetation management: Replanting vegetation and removing invasive species to maintain the health and stability of the living shoreline.
- Erosion control: Regular assessment and management of erosion, which may include adding additional sand to enhance the shoreline's protective function.

4. Evaluation

a. Indicators of success.

The success of the proposed project and funding will be indicated by the completion of project deliverables:

- Finalized permit applications approving the construction of the living shoreline.
- Successfully procurement of the construction contract.
- Completion of living shoreline construction at Gloucester Point Beach Park.
- Post-construction monitoring data collection and reports by VIMS-SSP that highlight the success of the living shoreline.

The success of the living shoreline project is measured through the following indicators:

- Erosion reduction
- Habitat restoration
- Biodiversity
- Water quality improvement
- Vegetation growth
- Cost effectiveness
- Continued use of the Park by current and new users
- Resilience to climate change including reduced property damage during and after flood events and shorter Park closures following flood events.

b. Data that will be collected and how the data will be used to measure success.

The site will be monitored pre-construction, with a post-construction as-built survey, and a survey one-year post-construction. The goal of the monitoring is to ensure the project's effectiveness as a living shoreline for shore protection. It will focus on the structure dimensions, sediment elevation, and plant coverage within the construction footprint of the hybrid living shoreline project. This monitoring conducted by VIMS-SSP will provide crucial data for evaluating the success of the living shoreline. Regular monitoring and evaluation of these indicators will give MPPDC and County staff valuable insights, guiding decisions on adjustments needed to ensure the long-term health and effectiveness of the living shoreline.

c. How was cost effectiveness evaluated and measured against the expected outcomes?

Cost effectiveness will be ensured through the County's use of competitive procurement and the project partners' experience and knowledge of market costs for shoreline projects similar to the proposed one.

d. What products, services, meetings, outreach efforts, etc. will be conducted and how will success be measured?

Success will be measured through observations made during the post-construction monitoring by project partners. Gloucester County will commit staff time for media coordination to educate the public about the project. VIMS-SSP regularly uses the beach and dunes as an outdoor classroom for grade school, undergraduate, and graduate students and will continue doing so post-construction, emphasizing the importance and benefits of the DCR investment at the site.

e. Project progress monitoring plan to ensure project meets the requirements of the agreement and is delivered on time. Outline how delays or other findings may be used to modify or improve outcomes/deliverables.

Progress will be monitored monthly by comparing actual progress to the project schedule. Quarterly progress reports, along with reimbursement invoices, will be submitted to DCR as required by the grant contract. Any discrepancies between anticipated and actual progress will be explained, and corrective actions and/or schedule revisions will be proposed. Project delays may prompt a request for an extension. Other findings affecting outcomes, deliverables, or the schedule will also be detailed. We understand that activities must commence within 12 months of the agreement date and be completed within 36 months. The final reimbursement request will be submitted to DCR within 90 days of project completion, as per the grant contract.

C. Budget Narrative- Required for All Categories

Each application must include a detailed Budget Narrative explaining all proposed expenditures. A budget narrative is applicable to requests from any category of grants in this manual. Applicants must submit a budget narrative via the WebGrants Portal. The following items must be included in the Budget Narrative:

Estimated total project cost: This amount must reflect the total cost of bringing the project to completion. Estimates for all work to be completed by third parties (engineers, contractors, etc.) on the specified project should be included.

Based upon the identified scope of work, as well as the cost estimates provided by the VIMS-SSP, the estimated total project cost is **\$2,565,000**. This total estimate includes the following estimated costs:

- VIMS Shoreline Studies Program (VIMS-SSP) for procurement and permitting assistance and post construction monitoring: **\$65,000**.

Description – VIMS-SSP staff, who developed the project design, will provide assistance to Gloucester County staff, who will be overseeing and responsible for permitting and procurement of the construction of the project. VIMS-SSP staff will provide assistance and guidance throughout the permitting and procurement stages of the project regarding technical aspects of the project design and will provide modifications to the project design, as necessary. Funds will be utilized for VIMS-SSP to monitor and document the project using ground and drone imagery.

- Gloucester County for Construction and Related Grant Activities: **\$2,500,000**.

Description – Gloucester County staff will be subcontracted to permit, procure and oversee the construction and other necessary and relevant aspects of the grant-funded living shoreline project. Construction costs for the rock, sand, plants, mobilization and demobilization of equipment and materials, and labor were provided by VIMS-SSP staff and reflect recent and current costs involved in other nearby projects. Overall, the system will consist of 4 structures: a 64 ft extension to the existing spur at the park's northern boundary, an 80 ft and 112 ft structure on either side of the existing fishing pier, and a 209 ft structure adjacent to the boat ramp at the southern boundary. Sand will be placed along the shoreline, attaching the structures, and creating 2 stable embayments. In addition, behind the spur extension and 2 structures at the pier, a dune will be created and planted with a crest elevation of +7.4 ft MLW providing protection from a 50-yr flood level (FEMA, 2021). In the embayments and behind the structure on the southern end, the dune will be a little narrower. Estimated costs include:

- 4,700 tons of rock at ~\$140/ton,
- 15,700 cubic yards of sand at ~\$110/cubic yard,
- 12,000 dune plants at ~\$3/plant, and
- Mobilization and demobilization at 25%.

Amount of funds requested from the Fund: This is the total amount of any grant assistance sought from the Fund. Include a detailed breakdown of how this funding is proposed to be allocated. At a minimum this should include a breakdown of salaries, including any position requested, position title, 100 percent of salary amount and percent directly dedicated to grant activity fringe benefits, travel, equipment, supplies, construction, contracts, and any other direct costs. The budget narrative must include details and costs for each budget category sufficient to determine reasonableness and allowability.

The amount of funds requested from the Fund is **\$2,436,750** or 95% of total project costs, since the project is eligible for a 95:5 match ratio as it is located in a designated opportunity zone and results in a nature-based solution.

Indirect costs are not eligible for funding. Salaries of existing staff are ineligible; however, salaries of staff who provide direct and documented support to the grant effort may be considered as match. Please refer to the match requirements in Part III of this manual. For local governments designated as low-income geographic areas, 100 percent of the estimated total project costs should be included.

Grant funding will not be used for indirect costs.

Amount of funds available: This amount, when combined with the amount of funding requested from the Fund, must reflect the total estimated project cost to demonstrate that all necessary funding has been secured to complete the project. Include a description of the source of these funds and evidence of the applicant's ability to obtain these funds to complete the project.

Gloucester County will appropriate the requisite 5% or **\$128,250** in required local match funds, to be combined with the **\$2,436,750** in grant assistance to equal the total estimated project cost (**\$2,565,000**). The County's match commitment letter has been uploaded to the grants portal.

RVRF Match loans: The match loan and amount of funding requested for loan.

No loans are requested.

Authorization to request for funding: Local governments seeking funding shall also attach signed documentation **authorizing the request for funding**.

The authorization to request funding letter has been uploaded to the grants portal.

Applicant Name: Middle Peninsula Planning District Commission (on behalf of Gloucester County)
Community Flood Preparedness Fund &
Resilient Virginia Revolving Loan Fund
Detailed Budget Narrative

Period of Performance: January 1, 2024 (or upon receipt of award contract) through December 31, 2026 (or three years from date of award contract execution)

Submission Date: November 10, 2023

Grand Total State Funding Request									\$2,436,750
Grand Total Local Share of Project									\$128,250
Federal Funding (if applicable)									\$0
Project Grand Total									\$2,565,000
Locality Cost Match									5%
Breakout By Cost Type	Personnel	Fringe	Travel	Equipment	Supplies	Contracts	Indirect Costs	Other Costs	Total
Federal Share (if applicable)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Local Share	\$0	\$0	\$0	\$0	\$0	\$128,250	\$0	\$0	\$128,250
State Share	\$0	\$0	\$0	\$0	\$0	\$2,436,750	\$0	\$0	\$2,436,750
Pre-Award/Startup	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$2,565,000	\$0	\$0	\$2,565,000

Historic Flooding Data and Hydrologic Studies Projecting Flood Frequency

The entirety of the site is located within a mapped floodplain, with portions located within FEMA Flood Zones AE and VE. The shoreline has eroded at a rate of about -1 to -1.5 ft per year since 1994 (Shoreline Studies Program Shoreline Change Database). The project site is impacted by ever increasing effects of coastal and tidal influences, resulting in site flooding and drainage issues. Due to the project site's adjacency to the York River and relatively low elevation, the site has an extensive history of experiencing flooding events that have resulted in significant impacts to infrastructure and the environment. For example, the project location has long been, and continues to be, impacted by tropical, sub-tropical, and Nor'easter events.

Since 2003 there have been several significant coastal events resulting in flooding impacts to the services building and site:

- Hurricane Isabel in 2003, resulting in 5 feet of water in the concession room/restroom building
- A nor-easter in 2005 resulting in 3 feet of water in the concession room/restroom building
- A nor'easter in 2010
- A nor'easter in June 2011
- Hurricane Irene in August 2011 that resulted in 1 foot of water in the concession room/restroom building
- A nor'easter in 2012
- A coastal storm in October 2015
- Hurricane Matthew (2016): This storm caused severe flooding from intense rainfall and storm surges, leading to damage to infrastructure and erosion along shorelines.
- Tropical Storm Michael (2018): Gloucester suffered heavy flooding
- Nor'easters: In October 2022, remnants of a nor'easter associated with Hurricane Ian brought substantial flooding, pushing water levels up to 2-3 feet in some places. This was noted as some of the worst flooding in 10-15 years, particularly at Gloucester Point, and led to erosion along shorelines and road closures.
- Tropical Storm Isaias (2020): This storm triggered flooding across eastern Virginia, and Gloucester experienced issues with standing water and road blockages, contributing to erosion of coastal areas.

The damage from Hurricane Isabel in 2003 was extensive, likely the storm of record in the Park's 40-year existence. In addition to approximately 5' of water in the building, the storm ripped up the Park's pier, pushed the stage through one of the services building's cinderblock walls and damaged the playground.

Despite not being named storm events, the site is subjected to regular flooding events, that result in damages, although perhaps not to the degree of the aforementioned events. With nearly every nor'easter the boat landing, parking lot, and park flood.

During other smaller storms, water ponds within the park and lots. A design is needed to achieve the goals of stormwater management, to keep the Park as usable as possible and to protect the expensive infrastructure and amenities. While flood insurance is maintained for the services building (a claim was filed for approximately \$47,000 in 2003 due to Hurricane Isabel) retaining the building in a condition

that is subject to flooding impacts is not the best way to manage resilience long term, subjecting the County, its taxpayers, and even state and federal taxpayers to incremental and varying costs.

According to NOAA's Coastal Flood Mapper, this project location is at the highest risk of coastal flooding in the future. According to a recent study conducted by the Center for Coastal Resources Management, a 1.5-foot rise in sea level coupled with a three-foot storm surge - similar to what would be experienced in a strong tropical storm - would lead to 13% of Gloucester County's land mass being flooded – including 118 miles of roads. Notably, only 3% of this projected flood area is currently developed.

See included files:

- Gloucester Point Beach Park - Map of Project Location
- Gloucester Point Beach Park - FIRMette
- Gloucester Point Beach Park - Flood Exposure Map

No adverse impact

Studies, data, reports must demonstrate proposed project minimizes flood vulnerabilities and does not create or increase flooding to other properties. Provide more detailed versions of those outlined as General Requirements.

The project involves a living shoreline that includes widening the beach, increasing the height of the dunes, and installation of plants and rock sills. These physical features are anticipated to prevent tidal flooding, storm surge, and elevated water levels resulting from sea-level rise at the coastline and protect upland areas. Limiting tidal, storm surge, and sea level rise flooding along this section of shoreline will not create or move flooding issues in the upland areas or increase flooding along other sections of shoreline.

VIMS Shoreline Studies Program staff have taken great consideration into the project's design with regards to adverse impacts to adjacent properties using decades' worth of experience and knowledge gained from designing and monitoring sites involving similar shoreline treatments in similar wave and energy environments. As such, there are no anticipated adverse impacts involving flood vulnerabilities to adjacent properties.

The ability of the local government to provide its share of the cost

This must include an estimate of the total project cost, a description of the source of the funds being used, evidence of the local government's ability to pay for the project in full or quarterly prior to reimbursement, and a signed pledge agreement from each contributing organization. Provide more detailed versions of those outlined as General Requirements.

The estimated total cost of the project is **\$2,565,000**. Construction is **\$2,500,000**. Contracting support, construction management, and post-construction inspections are **\$65,000**.

The total cost of the project will be sourced from:

- DCR CFPF grant of **\$2,436,750 (95%)**
- Gloucester County contribution of **\$128,250 (5%)**

Carol Steele, County Administrator for Gloucester County, provided a letter of noting the County's commitment to provide matching funds of **\$128,250 (5% of project costs)** has the ability to fund the project upfront, requesting reimbursements on a quarterly basis. The grant project is a part of the County's Capital Improvement Plan and will be funded with General Fund dollars.

See included files:

- The County's match commitment letter

Benefit-cost Analysis

In lieu of using the FEMA benefit-cost analysis tool, applicants may submit a narrative to describe in detail the cost benefits and value. The narrative must explicitly indicate the risk reduction benefits of a flood mitigation project and compare those benefits to its cost-effectiveness.

Gloucester Point Beach Park is experiencing increased effects from coastal and tidal flooding. Without sufficient mitigation efforts starting at the shoreline, secondary and tertiary effects of flooding and drainage issues will continue to plague the Park through faster deterioration of aging infrastructure, degradation of natural habitats, and compromised maintenance and usability of the Park's facilities. This is the County's most popular public recreation site supporting recreational as well as commercial fishing, boating, beach-going, and general recreational activities activity. Flooding issues are exacerbated by continued sea-level rise and the increased frequency and severity of heavy rains and storms in the region.

By widening and adding height to the existing beach and dunes, the enhanced shoreline will protect the Park through nature-based flood mitigation and support drainage, thereby minimizing property damage, enhancing the resilience of public infrastructure, and ensuring longer-term viability, and significantly reducing the potential for injuries and/or loss of life via enhanced public safety.

While no specific economic impact studies exist which quantify the direct, indirect, and induced benefits of the Gloucester Point Beach Park, the County recognizes that the cost of investing in the facility will be returned many times over in the benefits generated from this important recreational and fishing hub. It is anticipated that the DCR and County investments in flood protection through the construction of a living shoreline will result in a reduction in flood damages to the property, reduce general maintenance and repair costs following storm events, reduce the number of park closures following storm events, and enhance the overall recreational productivity of the site. All of these benefits provided by the project are anticipated to surpass the project costs many times over, not just over the immediate term, but for decades to come as flood conditions are forecast to worsen.

Other necessary information to establish project priority

i. Repetitive Loss and/or Severe Repetitive Loss Properties

Include an exact number of repetitive loss and/or severe repetitive loss structures within the project area.

While the park and park structures have flooded repeatedly and sustained significant damages on many occasions during the park's ~40-year history, insurance claims have only been filed two times by Gloucester County. The first claim occurred following Hurricane Isabel in 2003 (FEMA claim). The second claim occurred following a major storm that damaged the finger pier at the boat landing. All other storm damage-induced repairs, including hauling shifted sand, replacing water soaked and rotten boards, and removing the damaged playground, were covered and managed by the County without insurance claims. Therefore, by definition, there are no repetitive loss and/or severe repetitive loss properties within the project area.

There are repetitive and severe repetitive loss properties within 2 miles of the project area (**Figure 1**).

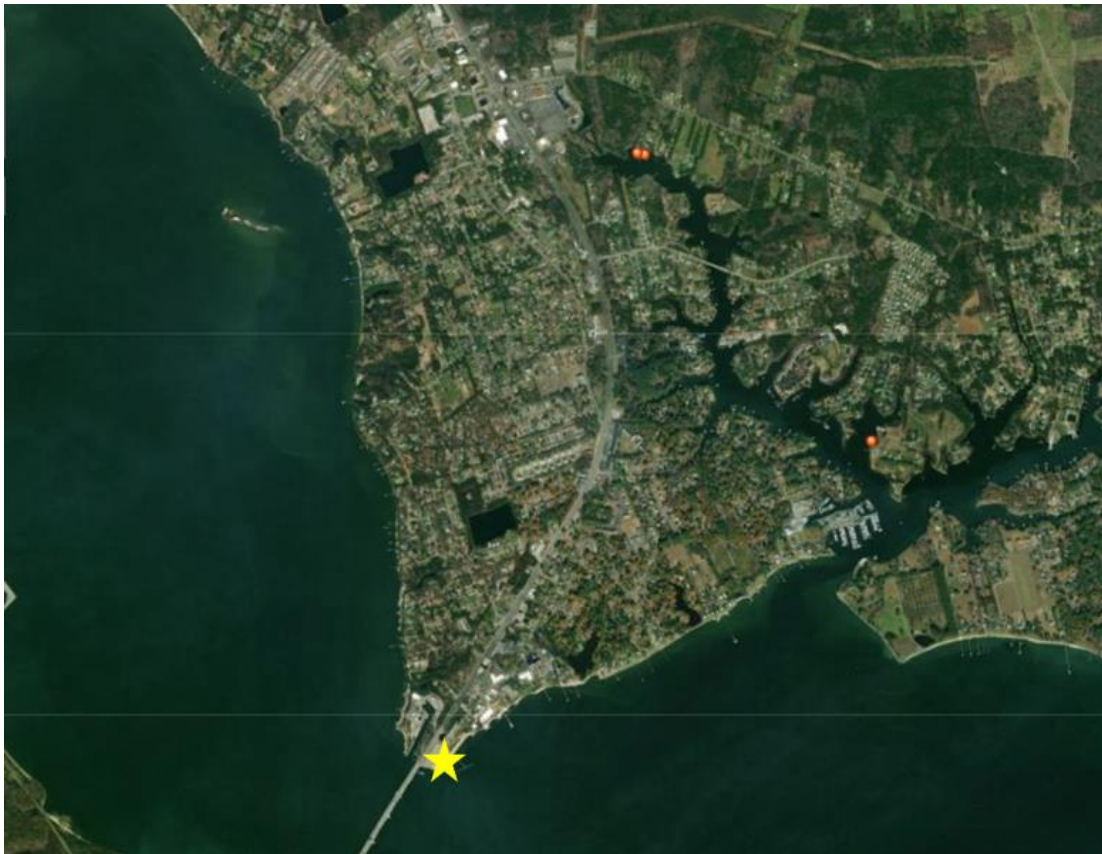


Figure 1 - Repetitive and Severe Repetitive Loss properties (red dots) within 2 miles of the project location (yellow star).

ii. Residential and Commercial Structures

Describe the residential and commercial structures impacted by this project, including how they contribute to the community such as historic, economic, or social value. Provide an exact number of residential structures and commercial structures in the project area.

Gloucester Beach Point Park does not contain any residential or commercially owned structures. The site includes a County-owned and operated 2,000 square foot facility that provides public restrooms, employee storage, and seasonal concessions. There is also a shower facility, interpretative sign panels, and a gazebo. There are two boat landings that support recreational and commercial seafood activity and a no-cost use fishing pier.

DCR's ConserveVirginia model identifies the site's importance for cultural and historic preservation. The Park hosts the only public beach access in the County. It is also the most popular public tidal boating site around. The no-cost use fishing pier provides a supplemental food source for many low-income families in the region.

In addition, the Park has a long history of being a hub for commercial use in the County, including historic ferry transportation and a working waterfront for various fisheries in the distant past to more recent boating, fishing, and beach recreational access.

iii. Critical Facilities/Infrastructure

Gloucester Beach Point Park serves as critical infrastructure with regards to its role in providing emergency services and marine patrol access to the water. In addition, the Park itself is a critical site for the County and region's water based recreational economy. Investing in a more resilient living shoreline system is a top priority to protect this valuable asset and ensure it continues to provide direct, indirect, and induced benefits to the County, region, and beyond.

As noted above, Gloucester County has filed one FEMA claim for damages incurred from tidal flooding at the site's single building. No FEMA claims have been filed since because the damage incurred to that structure have been mostly from nuisance tidal flooding which have slowly eroded and worn out the structure but has not created the level of an insurance claim. That being said, it is anticipated that the living shoreline system, with elevated dunes, will reduce nuisance flooding at the site, slowing or mitigating the gradual deterioration. Additionally, the primary losses to the County have been related to the costs incurred from staff time for repairs and maintenance following storm events, as well as the lost indirect and induced economic benefits when the public is unable to access the park following flood events.

Approach, Milestones, and Deliverables

Outline a plan of action laying out the scope and detail of how the proposed work will be accomplished with a timeline identifying expected completion dates. Determine milestones for the project that will be used to track progress. Explain what deliverables can be expected at each milestone, and what the final project deliverables will be. Identify other potential project partners.

Work Plan

1. Project Permitting (July 2025 – January 2026, 7 months --- *Note that all timelines are contingent upon the actual execution date of an award contract and are subject to change*)
 - Gloucester County staff will oversee the permitting process and attain all necessary permits for construction. County staff will meet with VIMS-SSP to review the entire project plan and discuss the scope as well as the scope that VIMS-SSP will be preparing.
 - The VIMS-SSP, which developed the project design (for the 50-yr flood), will be contracted to provide assistance to Gloucester County staff regarding technical aspects of the project design and will make modifications to the project design, as necessary.
 - Deliverable: Permit
2. Project Procurement (February 2026 – April 2026, 3 months)
 - Gloucester County staff will procure a qualified contractor for construction of the permitted project. This includes meeting with Purchasing to get the project ready for bid, hosting an onsite meeting with interested bidders, and reviewing bidder replies after Purchasing has verified completion of submittals.
 - VIMS-SSP will provide assistance and guidance throughout the procurement stages of the project regarding technical aspects of the project design and will make modifications to the project design, as necessary.
 - Deliverable: RFP and Contract
3. Living Shoreline Construction (April 2026 – June 2026, 3 months)
 - Gloucester County staff will host a meeting on site with VIMS, selected contractor and subs (if applicable) to discuss the project approach and clear them for starting work. Staff will have time on-site, on the phone, and on emailing communicating with the contractor to keep up with work during construction.
 - VIMS-SSP will conduct a pre-construction survey.
 - Contractor will construct the living shoreline, the widening of the beach, heightening of dunes, and installation of plants and rock sills as permitted, along with other grant related activities. DCR funds will be used for construction labor and materials. Gloucester County will oversee construction and ensure compliance with all grant terms and conditions.
 - Gloucester County staff will check on the site after construction ends and meet with VIMS-SSP and maintenance staff to review maintenance plan.
 - Deliverable: Completed project
4. Post construction monitoring of living shoreline (July 2026 – June 2027, 12 months)
 - MPPDC staff will contract with VIMS-SSP to conduct post-construction monitoring of the site by capturing ground and drone imagery.
 - VIMS-SSP will conduct a post-construction survey and a one-year post-construction survey.
 - Deliverable: Monitoring data

Maintenance Plan

For ongoing projects or projects that will require future maintenance, such as infrastructure, flood warning and response systems, signs, websites, or flood risk applications, a maintenance, management, and monitoring plan for the projects must be provided demonstrating how they will be maintained, managed, and monitored after the lifespan of this award for a minimum of ten years or the expected lifespan of the project, whichever is longer. Provide more detailed versions of those outlined as General Requirements.

VIMS-SSP will complete an as-built survey immediately following construction and another survey one-year post-construction. VIMS-SSP will also collect high-resolution LiDAR elevation data and drone imagery of the entire project in an effort to monitor changes over the first year. VIMS-SSP will use this data to evaluate the effectiveness of the project ensuring the dune is growing and retaining sand, which is crucial for shoreline stabilization.

VIMS-SSP will provide guidance to the County regarding proper maintenance techniques. Standard maintenance of living shorelines typically includes:

- Debris removal: Regular removal of debris, such as litter, to prevent accumulation that could disrupt the natural processes of the living shoreline and affect its stability.
- Vegetation management: Replanting vegetation and removing invasive species to maintain the health and stability of the living shoreline.
- Erosion control: Regular assessment and management of erosion, which may include adding additional sand to enhance the shoreline's protective function.

County staff, who have maintained the park for over 40 years, will conduct regular inspections and maintenance over the expected lifespan of the project. The Facilities Management department is responsible for:

- Maintenance, general repair, grounds keeping, and custodial care of County properties,
- Maintenance and inspection services on County vehicles and equipment, and
- Seasonal mosquito control in Mosquito Control Districts.

County staff are well-equipped to oversee any needed maintenance and are skilled in automotive and equipment repair, carpentry, landscaping, HVAC, masonry, mosquito control, painting, plumbing, and sign making. Staff performs interior building renovations and completes small construction projects. They also maintain the blue and green road name signs throughout the County.

Should any conditions occur at the site which rise above a level of state-of-good-repair maintenance, the County intends to consult VIMS-SSP for advice regarding any necessary major repairs and seek solutions accordingly.



GLOUCESTER COUNTY

County Administration

6489 Main Street
Gloucester, VA 23061
(804) 693-4042
www.gloucesterva.gov



October 30, 2024

Mr. Jake Shaw
Virginia Department of Conservation and Recreation
Community Flood Preparedness Fund
600 East Main Street, 24th Floor
Richmond, VA 23219-2094

RE: Application Authorization and Match Commitment for Gloucester Point Beach Park Project

Dear Mr. Shaw,

Gloucester County authorizes and supports Middle Peninsula Planning District Commission staff to request funding through the Virginia Department of Conservation and Recreation's Community Flood Preparedness Fund Round 5 (CID510071_Gloucester County_CFPF). This project will provide much needed flood and erosion protection to the Gloucester Point Beach Park, an extremely visible and popular recreational site for beach-going, fishing, and boating and commercial seafood activity. The 5-acre property owned by the County is the only publicly accessible beach in Gloucester County. A free public fishing pier, two boat landings, a play area, paved parking areas, open green space, public restroom facilities, staff storage area, and a concession room are located at the site. This project to construct a living shoreline will widen the beach and heighten dunes to provide greater protection during storms and reduce flooding at the County's only public beach.

This letter is also a commitment to match this project with \$128,250 (5% of project costs). The County will pay the match contribution during the agreement period and has the ability to cash fund the project upfront, requesting reimbursements on a quarterly basis. The grant project is a part of the County's Capital Improvement Plan and will be funded with General Fund dollars.

If you have any questions about the proposal application, please feel free to reach out to me by email at csteele@gloucesterva.info or by phone at 804-693-4042.

Sincerely,

A handwritten signature in black ink, appearing to read "Carol Steele".

Carol Steele
County Administrator



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Carol Steele
County Administrator

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National Flood Hazard Layer FIRMette



76°30'29"W 37°15'3"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

76°29'51"W 37°14'34"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/2/2023 at 8:34 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



COUNTY OF
GLOUCESTER
VIRGINIA

COMPREHENSIVE PLAN 2016 - 2036

The land of the life worth living.

Acknowledgments

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Christopher Hutson (Gloucester Point District)
Andrew James, Jr. (Ware District)
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Mr. Christopher Corr (Chair)
Mr. Warren Deal
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Ms. Louise Theberge (Board of Supervisors Representative)
Col. Tom Arnold (Planning Commission Alternate)
Mr. Buddy Rogers (Planning Commission Alternate)
Mr. Mark Strawn (Planning Commission Alternate)



Vision Statement

Gloucester County enjoys a diversity of suburban and rural characteristics while remaining a magnificent retreat from the nearby city life. The county is positioned at the southern tip of Virginia's Middle Peninsula, and its location provides citizens with the ability to access the more urban areas of Hampton Roads, Williamsburg, and Richmond, while maintaining a peaceful lifestyle found in the rural comforts and resources within the county. The exceptional quality of life found in Gloucester is based on the combination of its rural, small town character, and the abundance of natural, cultural and historic resources available within and adjacent to its boundaries.

Gloucester will protect and improve the quality of life enjoyed by its residents through preserving these resources and our rural character. The county will provide opportunities for growth by promoting development and redevelopment aimed at enhancing, encouraging and promoting community livability, prosperity and pride in "the land of the life worth living."



Chapters

1. Introduction
2. Existing Conditions
3. Economic Development
4. Housing
5. Transportation
6. Community Facilities
7. Natural Resources
8. Cultural and Historic Resources
9. Future Land Use



Appendix



Photo Sources:
Cover - Bruce Nelson Photography
This page - Gloucester Parks,
Recreation & Tourism and Bruce Nelson
Photography

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Gloucester Courthouse - Source: Gloucester Parks, Recreation & Tourism

CHAPTER 1

Introduction

Gloucester County's Comprehensive Plan is intended to assist community decision-makers in developing informed choices that shape the County's future through infrastructure investment and improvements, land use and transportation planning, and the need for community services and funding. County staff and the Planning Commission prepared this document, adopted on February 2, 2016 by the Board of Supervisors, with input from citizens and stakeholders.

This Introduction provides an overview of the following:

- What is a Comprehensive Plan?
- Why does Gloucester County have a Comprehensive Plan?
- The History of Comprehensive Planning in Gloucester
- How This Plan Was Developed

What is a Comprehensive Plan?

A Comprehensive Plan presents a representation of a community's vision for the future through a general, all-inclusive, long-range plan, an official public document prepared by the Planning Commission and adopted by the Board of Supervisors. The plan includes broad recommendations and policy discussions (general), comprises the entire County and the sectors related to its physical development (all-inclusive), and identifies current and future needs and conditions over a 20 year horizon (long-range). A local government's Comprehensive Plan accounts for all growth considerations within the entire jurisdiction, performed at the local level with local input addressing local issues. This living document evolves over time through regular reviews and updates as change occurs.

Although the Comprehensive Plan is not a legal document, it serves as a guide for decisions regarding

County development and informs land development ordinance revisions and other policy decisions, such as infrastructure improvements. The Comprehensive Plan's goals are achieved through implementation tools, as outlined in state code¹ and by the Virginia Chapter of the American Planning Association².

Why does Gloucester have a Comprehensive Plan?

The Community's Vision

Gloucester's vision for its future has been established through community input and review, starting with the first Comprehensive Plan, adopted in 1974. Gloucester continues to plan for tomorrow as it considers the existing conditions and expected future opportunities.

Legal Basis for Comprehensive Plans

Local authority and responsibility to develop and update the Comprehensive Plan originates from several state laws mandating the plan's contents, including elements such as transportation improvements, community facilities, land use, and affordable housing, and directing its adoption:

The local planning commission shall prepare and recommend a comprehensive plan for the physical development of the territory within its jurisdiction and every governing body shall adopt a comprehensive plan for the territory under its jurisdiction.

In the preparation of a comprehensive plan, the commission shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants. The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted

*and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants, including the elderly and persons with disabilities.*³

In addition to the above requirements, there are other mandates due to Gloucester's inclusion as a Chesapeake Bay locality. Since 2013, state code has required that Gloucester provide a coastal resource management section⁴ in conjunction with additional material mandated by the Chesapeake Bay Preservation Act⁵ and the Chesapeake Bay Preservation Area Designation and Management Regulations.⁶

Past Comprehensive Planning Efforts

Gloucester County's first Comprehensive Plan, adopted in 1974, contained three (3) key components: future land use, traffic circulation, and community facilities, leading to various implementation efforts regarding natural resources studies, parks and recreation facilities, property assessment, and establishing the precursor to the current Economic Development Authority. Due to the 1974 Plan's generality along with changing growth patterns, the Plan was updated in 1980 to be more comprehensive, address local population, housing, and economic trends, and include goals, objectives, and implementation strategies.

In 1991, the County adopted a new Comprehensive Plan, which included, among other elements, a contained growth strategy through a Development District. This Plan has been updated several times to include the Gloucester Point Plan (1995), update the Environmental, Parks and Recreation, and Economic chapters (1998), add a new Natural Resources and Environmental Quality chapter (2001), and incorporate the Dragon Run Watershed Management Plan (2004),

¹ Code of Virginia 15.2224

² Managing Growth and Development in Virginia: A Review of the Tools Available to Localities, 2014

³ Code of Virginia 15.2-2223

⁴ Code of Virginia 15.2-2223.2

⁵ 9VAC25-830

⁶ 9VAC25-830



Comprehensive Plan Update Public Meeting - Source: Gloucester Planning and Zoning

Gloucester Point/Hayes Village Development Area Plan (2011), and the Gloucester Court House Village Sub-Area Plan (2013).

Other implementation measures for Gloucester's Plans have included the County's first zoning ordinance, adopted in 1984 and updated in 1998, and a revised Subdivision Ordinance in 2000 (originally adopted in 1965). Although minor amendments to each ordinance have occurred since these actions, broad updates are anticipated upon this Plan's adoption.

Process for Plan Development and Adoption

This document has resulted from citizen, elected officials, and staff efforts through surveys, workshops, presentations, and public meetings. This process created a vision for the County's future to preserve the characteristics valued by residents and identify strategies to improve and enhance the quality of life for those who live, work, and play within Gloucester. This Plan reflects the residents' preferences for local development while addressing future needs. County staff conducted surveys in 2006, 2010, and 2015

to gauge residents' opinions and concerns. Although these surveys had low participation, similar input resulted from each exercise. The respondents' major concerns included environmental, historic, and rural resource preservation as well as growth considerations. The results of the surveys are available in Appendices B, F, and G of this document.

A Steering Committee was also appointed by the Planning Commission to review the previous Comprehensive Plan and guide this document's development. The Steering Committee membership included:

Dr. W. Keith Belvin
Mr. David Birdsall, Jr.
Ms. Reba Bolden
Mr. Jeff Breaks
Mr. Christopher Corr (Chair)
Mr. Warren Deal
Mr. Scott Harwood
Ms. Clara Hines
Mr. Corky Hogge
Mr. Mark Holthaus
Mr. Breck Montague
Mr. Jack Musick
Mr. Philip Olekszyk
Dr. Wes Wilson

Mr. George Zahn

Mr. Kenny Richardson (Planning Commission
Representative)

Ms. Louise Theberge (Board of Supervisors
Representative)

Col. Tom Arnold (Planning Commission Alternate)

Mr. Buddy Rogers (Planning Commission Alternate)

Mr. Mark Strawn (Planning Commission Alternate)

Several community meetings were held in 2008 and 2010. The 2008 meetings aimed to provide initial information to citizens, discuss the Comprehensive Plan, and gather feedback. Although a limited number of citizens attended these, they provided further feedback for this document. These responses can be found in Appendix I. The 2010 meetings provided citizens with updated information based upon the surveys and Steering Committee meetings and featured stations for citizens to react to various issues covered in this Plan's chapters.

Through the various events held, several major issues were identified, including:

1. Natural Resource Preservation
2. Rural Character Preservation
3. Cultural and Historic Resource Preservation
4. Route 17 Access and Safety
5. Balancing Growth and Use Conflicts

Following this public input period, from 2009 to 2015, the Hampton Roads Planning District Commission (HRPDC) and Gloucester County Department of Planning and Zoning staff produced the draft and final versions of the Comprehensive Plan for the Planning Commission's review at their monthly meetings as well as joint meetings with the Board of Supervisors, the Public Hearing before the Planning Commission, and the Commission's recommendation to the Board of Supervisors. The chapters have been available on the County's Comprehensive Plan webpage,⁷ created in 2008, and have been regularly updated as data became available, including incorporating the 2010 Census, the 2012 Agricultural Census, and annual zoning and permitting data.

⁷ <http://gloucesterva.info/Planning/ComprehensivePlanUpdate/tabid/574/Default.aspx>

Vision Statement

In 2015, the Board of Supervisors conducted a strategic planning effort, developing the following Vision Statement for 2035 to guide the Board's priorities through 2018:

Founded in 1651, Gloucester County has a rich and varied history that includes Werowocomoco, the cultural and political center of the Powhatan Confederacy; Revolutionary War battlefields; and the homes of Dr. Walter Reed, and early civil rights activist T.C. Walker. Today, Gloucester citizens enjoy the beauty of a rural Virginia countryside, while remaining within a short commute of the activities and shopping opportunities offered by metropolitan Hampton Roads.

Moving towards the future, Gloucester will benefit from steady and consistent economic growth enabled by a robust infrastructure, business-friendly government and a top-notch public education system. Gloucester's citizens will enjoy a wealth of recreational activities, shop locally at numerous and varied markets and stores, and have access to county-based, world-class health care. Gloucester will offer all the amenities of modern life, while continuing to surround its citizens with the tranquility of rural and waterfront living.

Gloucester is, and will continue to be, "The Land of the Life Worth Living."

During the Board of Supervisor's review of the Plan, the Comprehensive Plan Steering Committee's Vision Statement was amended to reflect the Board's Vision Statement for 2035. The following Vision Statement, as amended, was adopted:

Gloucester County enjoys a diversity of suburban and rural characteristics while remaining a magnificent retreat from the nearby city life. The county is positioned at the southern tip of Virginia's Middle Peninsula, and its location provides citizens

with the ability to access the more urban areas of Hampton Roads, Williamsburg, and Richmond, while maintaining a peaceful lifestyle found in the rural comforts and resources within the county. The exceptional quality of life found in Gloucester is based on the combination of its rural, small town character, and the abundance of natural, cultural and historic resources available within and adjacent to its boundaries.

Gloucester will protect and improve the quality of life enjoyed by its residents through preserving these resources and our rural character. The county will provide opportunities for growth by promoting development and redevelopment aimed at enhancing, encouraging and promoting community livability, prosperity and pride in “the land of the life worth living.”



Rural character along Old Pinetta Road - Source: Gloucester Planning and Zoning

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*Gloucester County aerial of Sarah Creek -
Source: Bruce Nelson Photography*

CHAPTER 2

Existing Conditions

Gloucester County, located at the southern tip of Virginia's Middle Peninsula, was officially established in 1651 and has historically maintained a lower population than its neighbors to the south (Peninsula) and an agriculture, forestry, and water-based economy. Regional neighbors on the Middle Peninsula include Middlesex, King and Queen, and Mathews Counties, with York County located immediately to the south across the York River. The County, consisting of 218 square miles of land, is defined by its shoreline, being surrounded by over 296 miles of waterways, including the York River to the south, the North, Severn, and Ware Rivers to the east, and the Piankatank River to the north, as shown on Map EC-1.

Gloucester remained a primarily rural, agricultural community through the Civil War, where the County's economy consisted of large, tobacco-growing plantations. Following the war, cultivation of other agricultural products, such as corn, soybeans, and flower bulbs increased. The County remained rural

with a stable population through 1970, covered by scattered countryside houses spread across farmlands and surrounded by undisturbed natural areas, although a few small, rural settlements existed.

The George P. Coleman Bridge, constructed in 1952 to connect Gloucester Point and Yorktown by a two-lane toll bridge, opened the opportunity for regular travel



George P. Coleman Bridge - Source: William Thomas, Virginia Beach

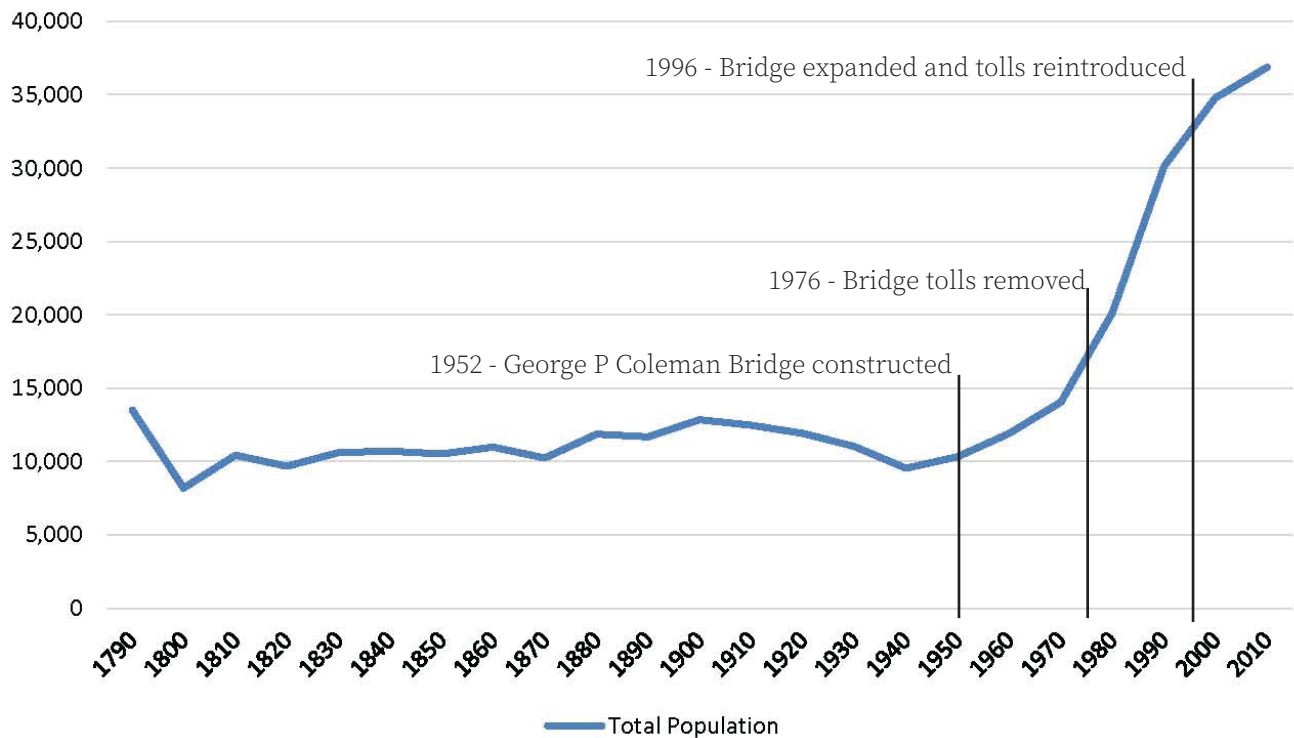
Map EC-1: Regional Context



Data Source: US. Census Bureau

Gloucester County is located at the southern end of Virginia's Middle Peninsula. It is bordered by King and Queen County to the west, Middlesex County to the north, and Mathews County to the east. York County lies across the York River to the south. In addition to the York, several other rivers form Gloucester's shorelines. These include the Piankatank, which separates Gloucester County from Middlesex County, and the North, Severn, and Ware Rivers, which extend from Gloucester County into the Mobjack Bay. Gloucester's regional context is discussed on pages 7 & 8.

Figure EC-1: Gloucester County Total Population, 1790 to 2010



Source: U.S. Census Bureau, University of Virginia Geospatial and Statistical Data Center. 2010 values are based on the 2010 Census Redistricting Data (Public Law 94-171) Summary File.

and job opportunities on the Peninsula as previous access occurred through a small-scale ferry service. Gloucester was situated to experience suburban growth due to its proximity to jobs in the Hampton Roads metropolitan area and its undeveloped, rural character. Although the Coleman Bridge tolls limited some growth, their removal in 1976 produced a roughly 15% population increase in the 1960's and 1970's and a roughly 40% increase in the 1980's and 1990's. In 1996, the bridge was expanded to four (4) lanes to accommodate increased traffic, financed by reintroduced bridge tolls, contributing to a declining growth rate, as show in Figure EC-1.

Gloucester's 83% population growth since 1980 reflected regional growth trends, where Hampton Roads and the Middle Peninsula grew by over 37% and 50%, respectively,¹ outpaced by only James City County, Chesapeake, and York County during this time period.

¹ Population data obtained from the U.S. Census Bureau.

As a result, the County has become the largest Middle Peninsula community and remains of substantial size within Hampton Roads. Although the County's population has grown, local economic growth has not kept pace and many residents commute to other localities for employment, primarily to Hampton, Newport News, and York County. Gloucester's connection to Hampton Roads established the County as a bedroom community that offers lower taxes and housing costs as well as a high, rural quality of life compared to its southern neighbors that provide greater job variety and more employers than found locally.

More recently, local growth has slowed to a minimal rate as a result of a number of factors, including the national recession and a continued toll on the Coleman Bridge. As the economy rebounds, the local growth rate should increase to a level near the regional and statewide rate in combination with increased local economic development and revenue.

Local growth through the twenty-first century has increased demand for government services, utilities, and transportation infrastructure with some loss of the natural environment, increased roadway congestion, and a varied quality of commercial and residential construction. Gloucester encourages appropriate growth balanced with adequate services and protection of the County's attractive qualities.

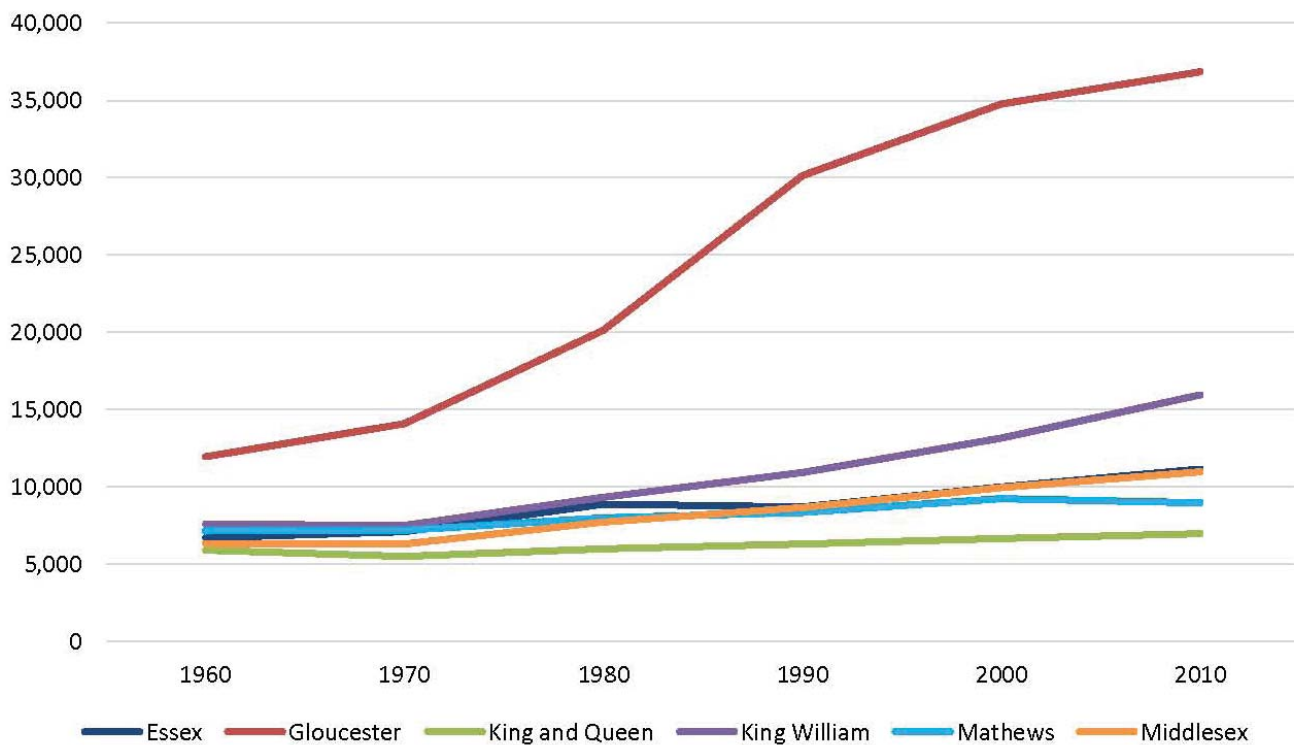
Population Characteristics

Demographic analyses reveal a community's population trends, helping to identify current needs and project future conditions. This section examines Gloucester's population characteristics compared to its regional neighbors.

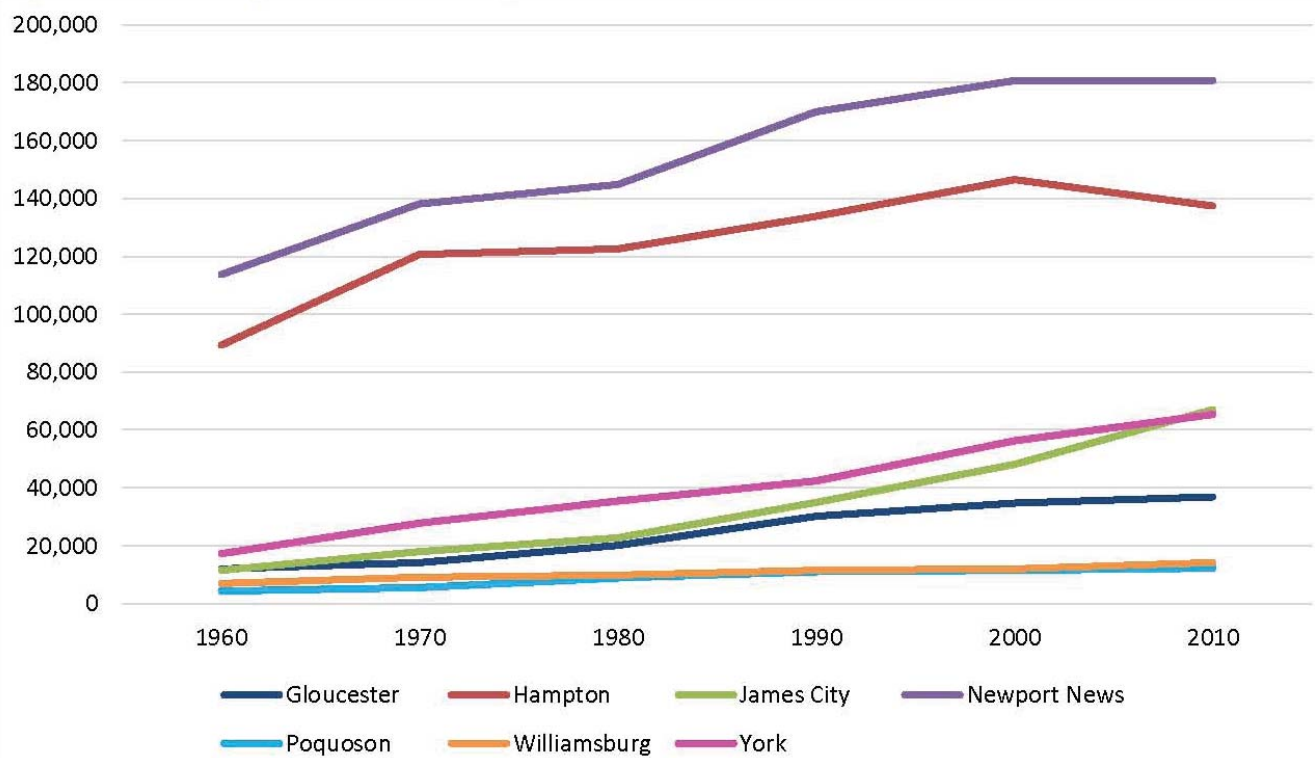
Population

Although Gloucester is geographically located on the Middle Peninsula, the County is economically connected to the Peninsula, two regions with very different characteristics. Gloucester is the largest Middle Peninsula locality, but significantly smaller than the most populated Peninsula localities as Middle Peninsula localities are typically smaller and more rural than those on the Peninsula. Gloucester contributes to nearly 41% of the Middle Peninsula's population, but only about 7% of the Peninsula's. Figures EC-2 and EC-3 show the population change from 1960 to 2010 for the Middle Peninsula and Peninsula, respectively.

Figure EC-2: Population Change on the Middle Peninsula, 1960-2010



Source: U.S. Census Bureau, University of Virginia Geospatial and Statistical Data Center

Figure EC-3: Population Change on the Peninsula, 1960-2010

Source: U.S. Census Bureau, University of Virginia Geospatial and Statistical Data Center

Age

Gloucester's median age of 42.6 years old is younger than most Middle Peninsula localities, but older than many Peninsula localities. Gloucester's greatest concentration is between 40 and 60 years old, representing roughly 32% of the total population, and over 60% of all residents are of working age, as shown in Figure EC-4. However, 21% of the County's population is of school age and 18% is over 65, providing insight into current and potential future educational and senior needs. Figures EC-5 and EC-6 compare the age distribution for Middle Peninsula and Peninsula localities, respectively.

Gender and Race

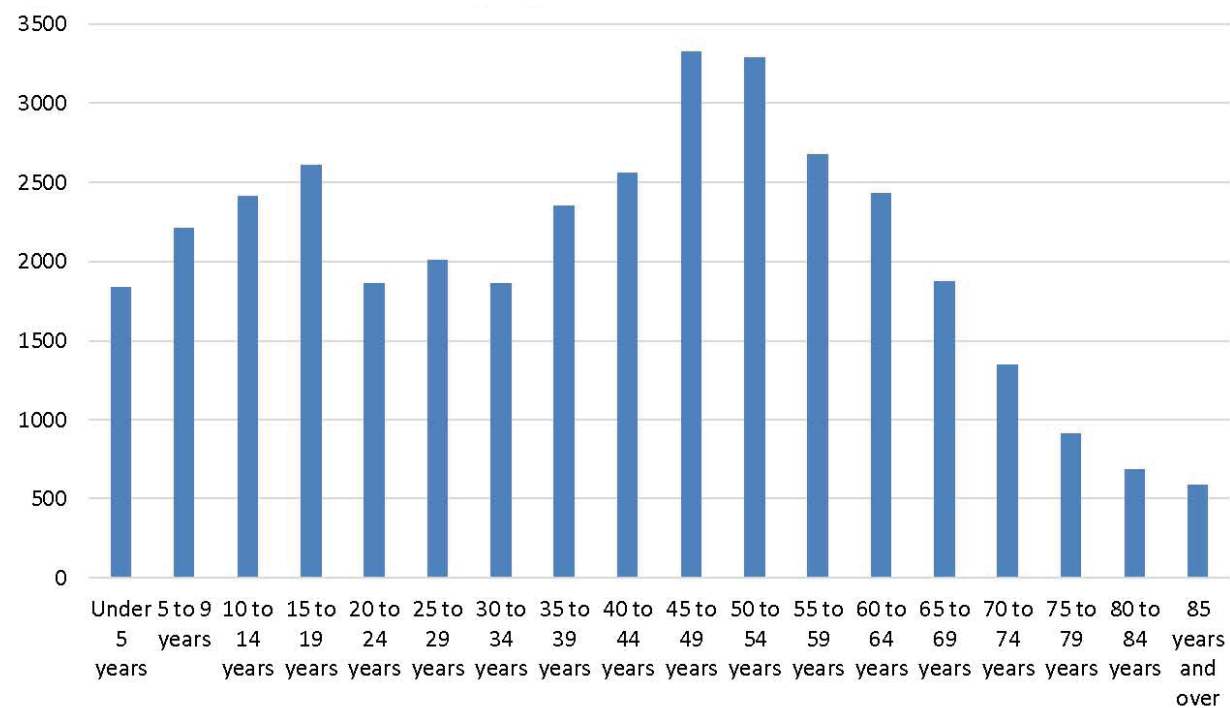
Gloucester consists of a nearly even distribution of men and women, similar to most surrounding localities. Gloucester County contains an approximately 87%

white population, higher than most of the Peninsula and Middle Peninsula. However, Blacks and African Americans are the largest minority group and Gloucester has received many contributions from notable African Americans throughout its history.

Population Projections

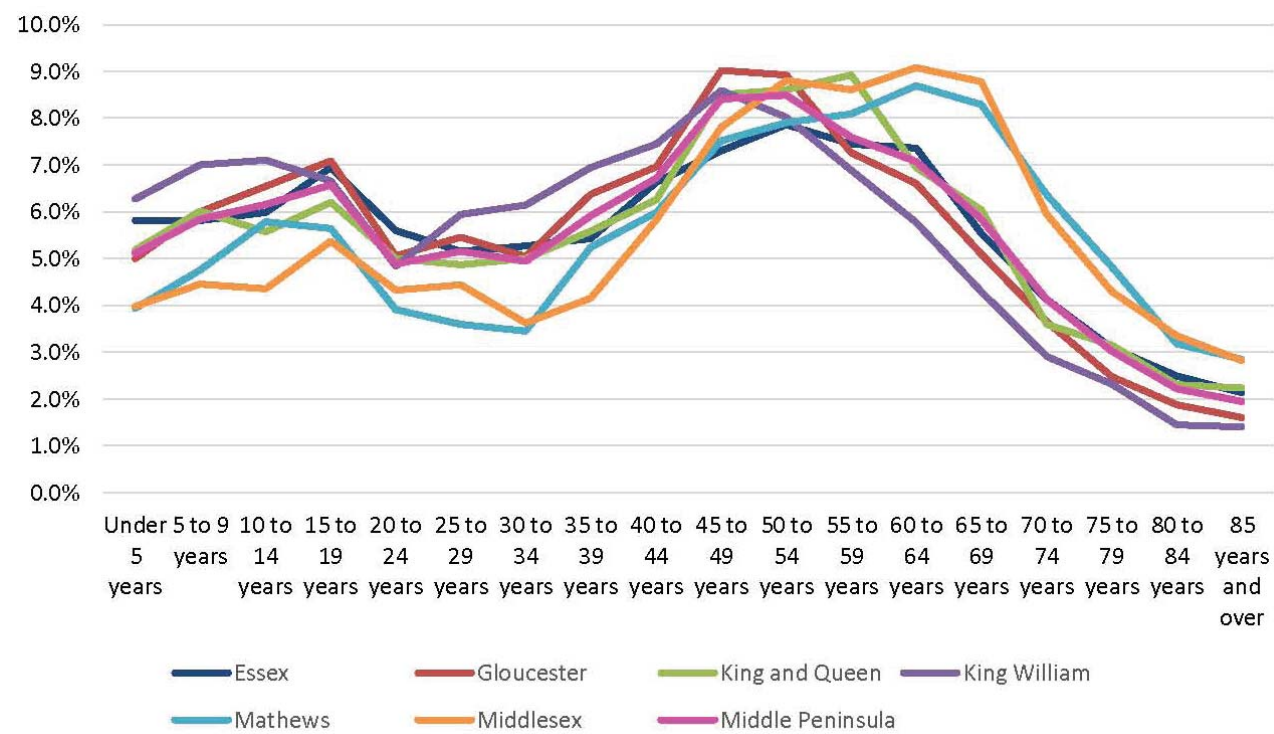
The Hampton Roads Planning District Commission produces regional projections for population, households, and workers as it creates economic and transportation plans, with the most recent projections forecasting 2040 populations. Gloucester is expected to grow by roughly 9% to over 40,000, slower than many Hampton Roads localities. Figure EC-7 compares Gloucester's projected growth to other Peninsula localities.

Figure EC-4: Gloucester County Age Distribution in 2010



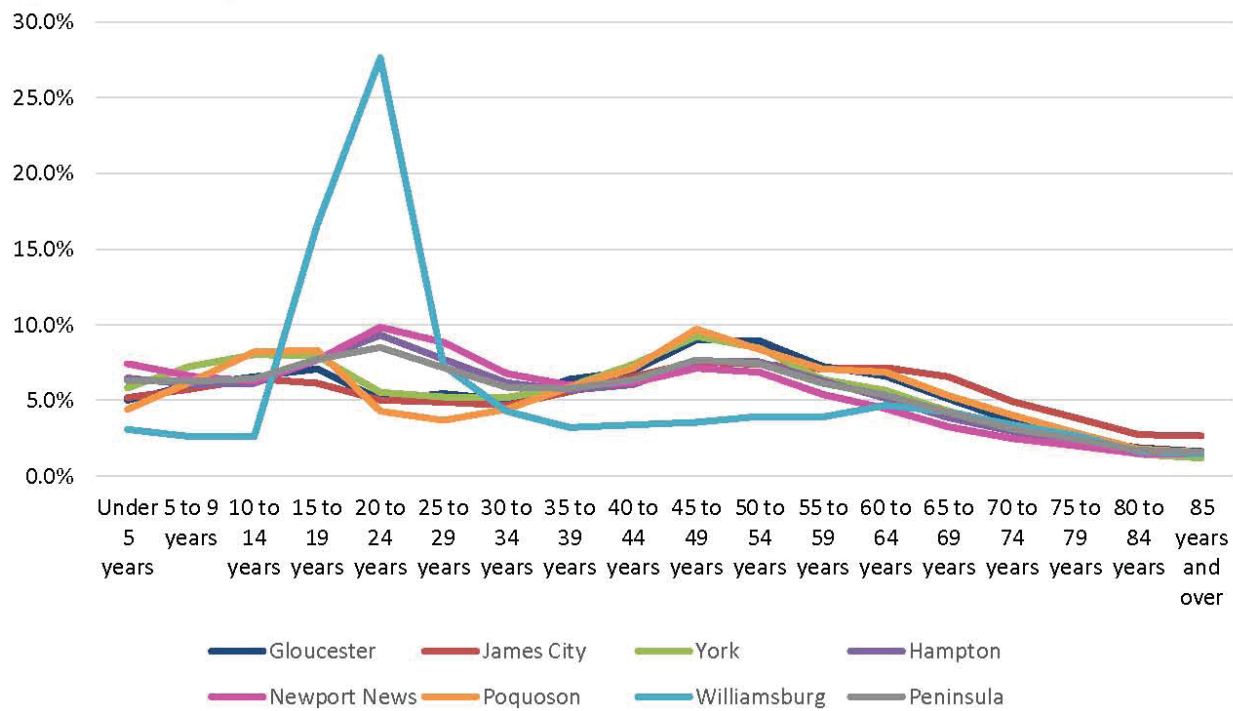
Source: U.S. Census Bureau

Figure EC-5: Age Distribution in Middle Peninsula Localities, 2010



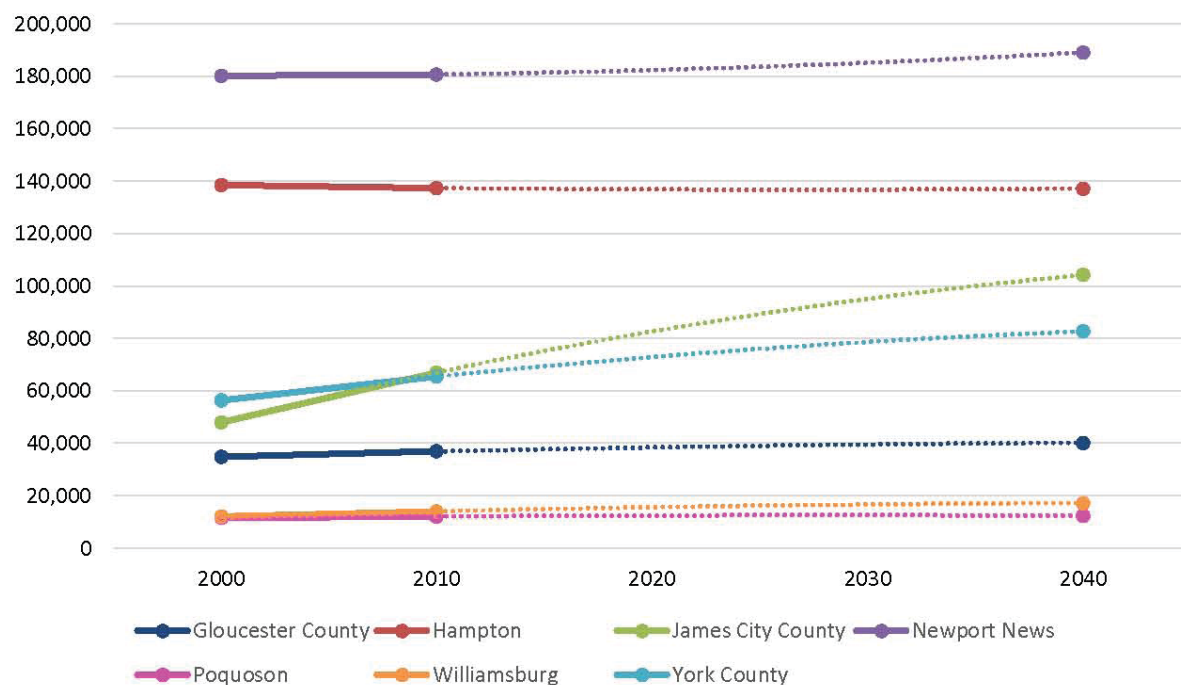
Source: U.S. Census Bureau

Figure EC-6: Age Distribution in Peninsula Localities, 2010



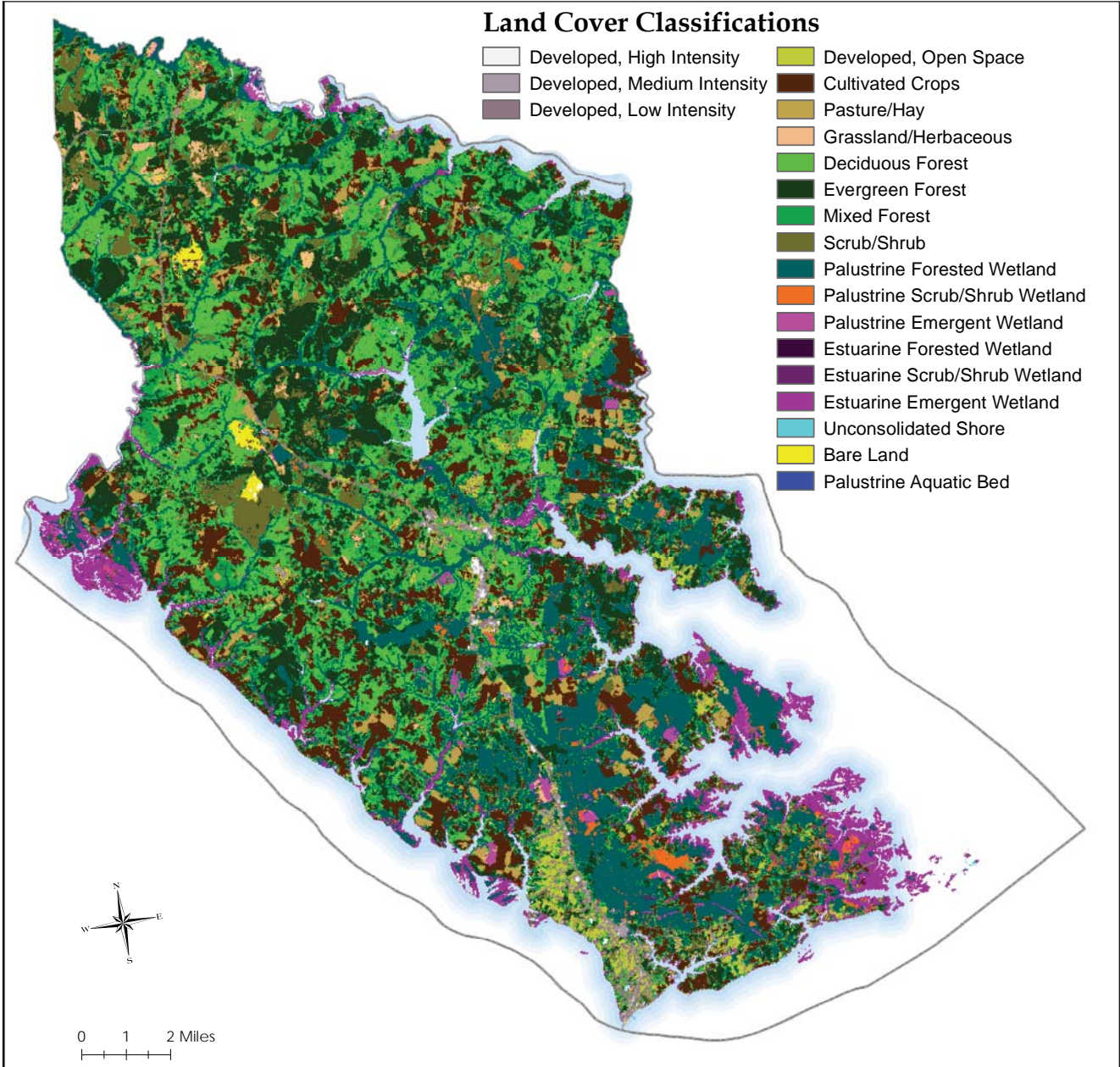
Source: U.S. Census Bureau

Figure EC-7: HRPDC Projected Population Growth on the Peninsula, 2000-2040



Source: Hampton Roads Planning District Commission

Map EC-2: Land Cover



Data Source: NOAA Coastal Change Analysis Program (C-CAP), NOAA Coastal Services Center

Land cover refers to actual conditions on the ground and is usually described in terms of impervious surfaces and vegetation. The most recent land cover data available for Gloucester County is from the 2005-2006 survey of the Coastal Change Analysis Program (C-CAP), part of the National Oceanic and Atmospheric Administration. The CCAP data classifies land cover into nine (9) categories and twenty-four (24) classifications.

Land Cover is discussed on page 15.

Existing Land Uses and Development Patterns

The County consists of relatively concentrated residential development surrounded by agricultural and forested land. Recently, Gloucester has served as a suburb for residential populations commuting to the Hampton Roads and Richmond metropolitan areas with the local economy comprised of mainly service and retail occupations. Past and current land development practices have established two (2) historic centers, surrounded by residential development, natural features, and agricultural activities with the majority of residents and businesses primarily located along Route 17 and Main Street. Current local land uses cover five (5) broad categories: residential, agricultural/forestral, commercial, industrial, and public/institutional, as shown by local land cover and zoning data.

Land cover data for the County is available through the National Land Cover Dataset, produced by the United

States Geological Survey, and the Coastal Change Analysis Program (C-CAP), generated by the NOAA Coastal Services Center.² Local C-CAP data shows both the most recent conditions (as of 2010) and land cover changes since 1992, as shown in Table EC-1 and Map EC-2.

² Coastal Change Analysis Program Regional Land Cover. NOAA Coastal Services Center. <http://www.cscnoaa.gov/digitalcoast/data/ccapregional/>



A misty morning on the Dragon Run (Credit: Teta Kain) - Source: Dragon Run Watershed Management Plan

Developed Land describes areas modified for human use, such as for buildings, parking lots, or lawns. The four categories of developed areas are High Intensity (80% to 100% impervious cover), Medium Intensity (50% to 79% impervious cover), Low Intensity (21% to 49% impervious cover), and Open Space (less than 20% impervious cover).

Agricultural Land refers to areas used for the production of crops or livestock. They are classified as either Cultivated Crops or Pasture/Hay.

Grasslands (Grassland/Herbaceous) are areas with 80% or greater total vegetative cover and are generally unmanaged.

Forest Lands are areas dominated by trees generally greater than 5 meters in height and that have greater than 20% vegetative cover. Forest lands are classified as Deciduous, Evergreen, or Mixed.

Scrub/Shrub refers to areas dominated by shrubs or small trees less than 5 meters in height that make up greater than 20% of total vegetation.

Barren Lands are areas with little or no vegetation and include Barren Land, Tundra, Perennial Ice/Snow, and Unconsolidated Shore.

Wetlands are areas that are regularly or permanently saturated with water and divided into two broad categories: Estuarine Wetlands, which occur in tidal areas with salinity greater than 0.5%, and Palustrine Wetlands, which include other tidal and nontidal wetlands. Wetlands are either Forested, Scrub/Shrub, or Emergent.

Water and Submerged Lands are areas covered by water and include Open Water and Palustrine and Estuarine Aquatic Beds, which are characterized by plant growth on or at the water's surface.

Table EC-1: Land Cover Change in Gloucester County, 1992-2006

Classification Name	1992 Acres	1996 Acres	2001 Acres	2005 Acres	2010 Acres	Change, 1992-2010	% Change, 1992-2010
Developed, High Intensity	147	155	164	152	155	8	5.44%
Developed, Medium Intensity	470	486	522	519	514	44	9.36%
Developed, Low Intensity	1,774	1,779	1,843	2,633	2,638	864	48.70%
Developed, Open Space	2,760	2,810	2,894	2,834	2,843	83	3.01%
Cultivated Crops	16,367	16,541	16,156	17,077	17,087	720	4.40%
Pasture/Hay	4,099	4,070	4,820	4,373	4,387	288	7.03%
Grassland/Herbaceous	1,921	1,780	478	1,698	1,703	-218	-11.35%
Deciduous Forest	23,393	22,063	21,794	23,042	23,002	-391	-1.67%
Evergreen Forest	26,633	27,800	26,901	25,870	25,885	-748	-2.81%
Mixed Forest	10,281	10,509	10,634	10,334	10,323	42	0.41%
Scrub/Shrub	9,303	8,782	10,451	11,138	11,093	1,790	19.24%
Palustrine Forested Wetland	32,537	33,278	33,293	29,067	29,093	-3,444	-10.58%
Palustrine Scrub/Shrub Wetland	1,841	1,519	1,543	1,796	1,789	-52	-2.82%
Palustrine Emergent Wetland	912	781	791	1,470	1,472	560	61.40%
Estuarine Forested Wetland	0	0	0	1	1	1	N/A
Estuarine Scrub/Shrub Wetland	77	77	77	84	85	8	10.39%
Estuarine Emergent Wetland	6,266	6,266	6,291	6,258	6,242	-24	-0.38%
Unconsolidated Shore	101	108	115	76	73	-28	-27.72%
Barren Land	84	159	242	511	512	428	509.52%
Palustrine Aquatic Bed	10	10	10	8	8	-2	-20.00%

Source: NOAA Coastal Services Center

Zoning

Zoning designations indicate land designated for certain uses. Gloucester County's Zoning Ordinance contains seventeen (17) designations, including four (4) commercial, four (4) conservation, five (5) residential, two (2) overlay, one (1) industrial, and one (1) special designation, with fifteen (15) designations currently in use, as listed in the Table EC-2 and shown on Map EC-3. Additionally, two (2) Village Development Areas, Gloucester Court House and Gloucester Point/Hayes, are identified for additional density and mixed uses.

Residential

Residential land comprises the largest developed land use within the County, with the highest residential

concentrations located in the Court House and Gloucester Point/Hayes areas. As public water and sewer are available throughout much of the Route 17 corridor between Gloucester Point and the Court House (within the Development District shown in Map EC-3), areas inside the Development District are identified for higher density commercial and residential development. Gloucester Point/Hayes and the Court House are identified as Village Development Areas (VDA's), areas designated for higher density development due to proximity to transportation facilities, public water and sewer availability, and/or a developed area to be used for redevelopment or infill development. Outside of the VDA's, residential development has primarily occurred along major roadways with scattered residential lots and subdivisions dispersed throughout other rural areas.

Recent residential subdivisions have contained single-



Snug Harbor Neighborhood - Source Gloucester County Planning and Zoning

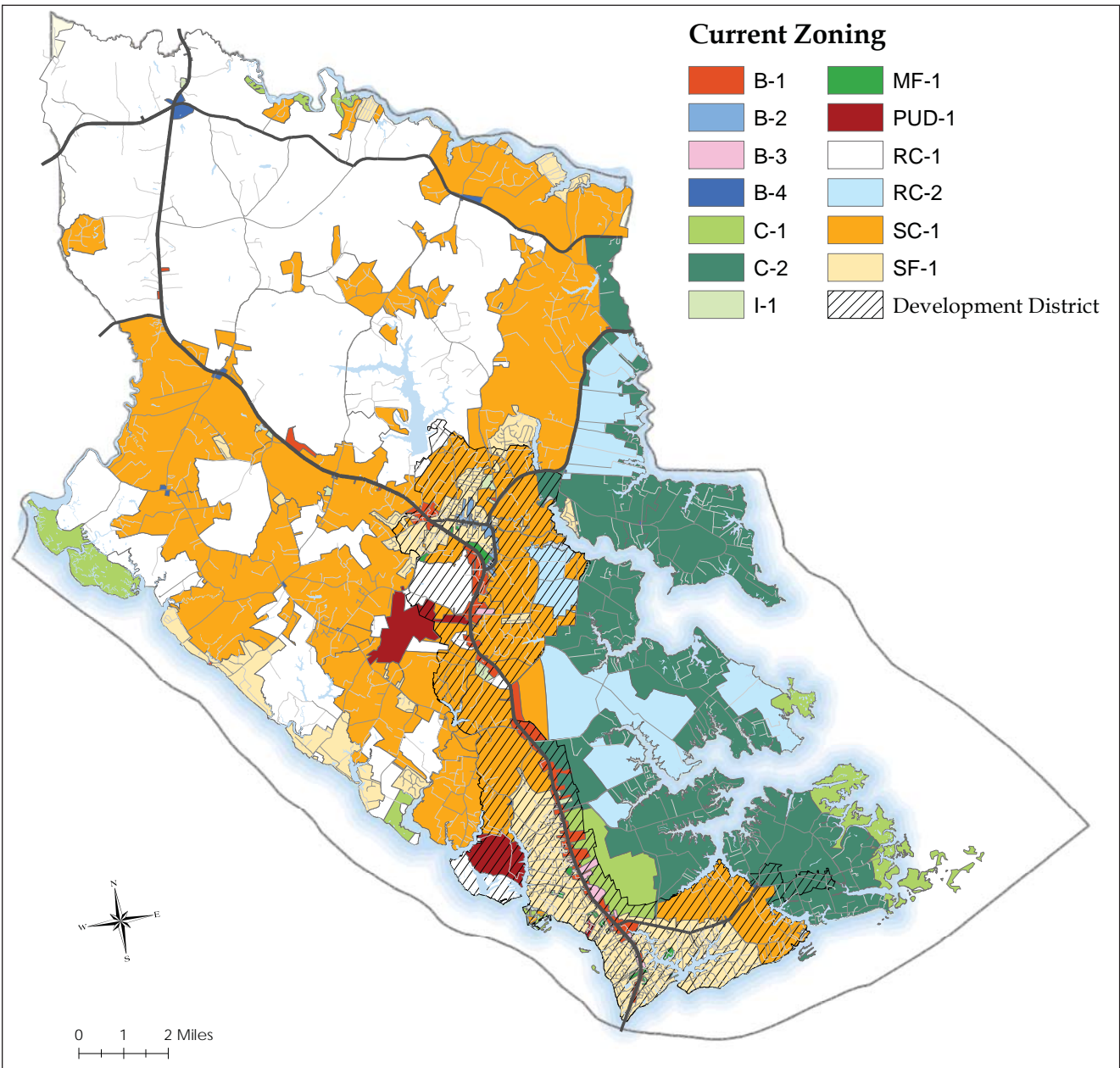
Table EC-2: Gloucester County Current Zoning Designations

Zoning Category	Zoning Code	District Type	Parcels	Area (acres)	Percentage
Business	B-1	Commercial	755	1,549	1.11%
Village Business	B-2	Commercial	260	183	0.13%
Office Business	B-3	Commercial	127	238	0.17%
Rural Business	B-4	Commercial	56	237	0.17%
Conservation	C-1	Conservation	162	4,886	3.50%
Bayside Conservation	C-2	Conservation	3,852	19,141	13.72%
Limited Industrial	I-1	Industrial	36	231	0.16%
Medium Density Multifamily Residential	MF-1	Residential	426	211	0.15%
Planned Unit Development	PUD-1	Special	85	1,569	1.12%
Rural Countryside	RC-1	Residential	2,107	50,404	36.12%
Rural Conservation	RC-2	Conservation	106	7,729	5.54%
Suburban Countryside	SC-1	Residential	8,409	43,530	31.20%
Single-Family Detached Residential	SF-1	Residential	8,514	9,627	6.90%
Highway Corridor Development District *	HCDD	Overlay	-	-	-
Historic Preservation	H-1	Overlay	17	806.47	N/A

Source: Gloucester County Information Technology Department

* The Highway Corridor Development District was revised in 2014 to include all parcels along the US Route 17 corridor within 150 feet, from Gloucester Court House to the Coleman Bridge, as well as parcels zoned business and industrial outside of that area but still adjacent to the US Route 17 corridor.

Map EC-3: Zoning



Data Source: Gloucester County Planning and Zoning Department, Gloucester County Zoning Ordinance

Zoning refers to legal designations developed and assigned by a local government to parcels that describe what uses can occur and what structures can be built on those properties. Gloucester’s Zoning Ordinance contains seventeen (17) designations covering commercial, conservation, residential, industrial, and special uses, of which fifteen (15) are currently in use. Most of Gloucester is zoned to permit residential uses.

Zoning is discussed on page 16.

Business Districts (B-1) are appropriate for general business uses. **Village Business Districts (B-2)** are appropriate for retail, office, service, and public use establishments and are intended to foster village scale commercial development in activity centers. **Office Business Districts (B-3)** are intended for business parks or campuses. **Rural Business Districts (B-4)** are intended to provide for the needs of rural areas and include a range of business and industrial uses.

Conservation Districts (C-1) are intended to protect natural resources, open space, and watersheds and reduce hazards. **Bayside Conservation Districts (C-2)** are intended to protect natural resources and reduce hazards while allowing some limited low density residential development in areas near the Chesapeake Bay. **Rural Countryside Districts (RC-1)** are intended to protect and encourage agricultural activities. **Rural Conservation Districts (RC-2)** are intended to protect natural resources in areas along the Chesapeake Bay while allowing some limited residential development.

Suburban Countryside Districts (SC-1) are intended for low density residential development in areas constrained by natural conditions. **Single-Family Detached Residential Districts (SF-1)** are intended to preserve existing neighborhoods by encouraging similar development. **Hamlet Cluster Districts (HC-1)** are intended for clustered, moderate density residential development at rural service centers. **Medium Density Multifamily Residential Districts (MF-1)** are intended to provide for moderate to high density development in areas served by public utilities. **Manufactured Home Districts (MH-1)** are intended to allow for the development of manufactured home parks. Gloucester does not currently have any land designated as either HC-1 or MH-1.

Other designations include **Limited Industrial Districts (I-1)**, **Historic Preservation Districts (H-1)**, the **Highway Corridor Development District (HCDD)**, and **Planned Unit Development Districts (PUD-1)**.

family detached homes, with some located outside the Development District. Should residential development increase, the County's rural, agricultural areas not served by public water or sewer may experience residential growth, especially in the Suburban Countryside district. New on-site waste treatment technology has increased development in more rural areas as these alternative septic systems allow for residences on land that was previously unbuildable with a conventional septic system. Since septic system maintenance is required by state code, appropriate use of on-site septic systems will serve to protect groundwater and surface water supplies.

Approximately 6% of the County's total housing stock is multifamily, including structures with two or more dwelling units³ and much of this housing was built prior to 1990. Although most areas zoned for multifamily housing are near Gloucester Point/Hayes and the Court House, multifamily housing rezoning requests have increased due to the limited number of vacant, multifamily parcels. Additionally, Planned Unit Developments may include multifamily housing when compatible with the overall project.

Agricultural/Forest

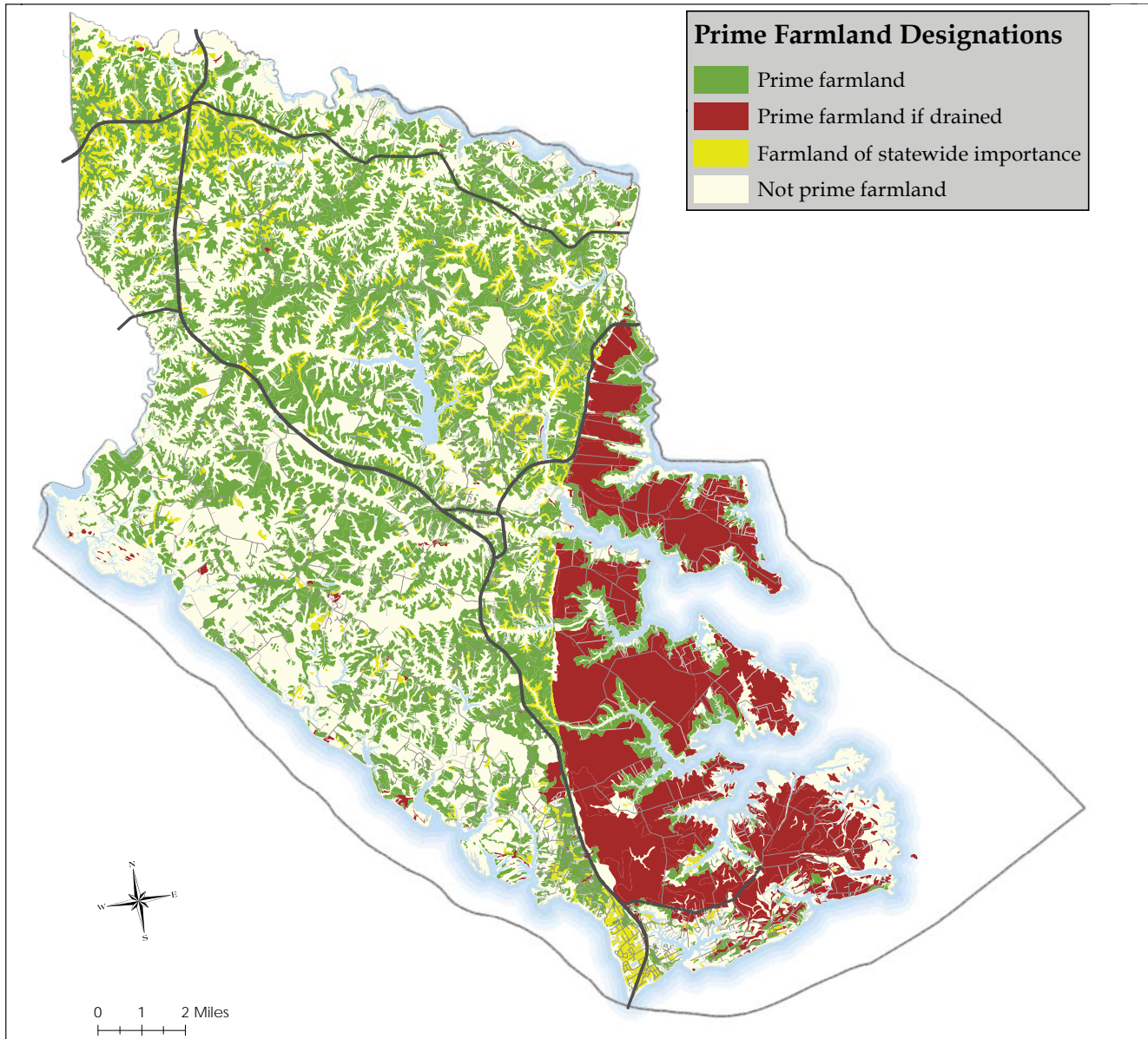
Forests and forested lands, including deciduous, evergreen, and mixed forests, and palustrine and estuarine forested wetlands, cover approximately

3 2009-2013 American Community Survey 5-Year Estimates



Agriculture land off Fletcher Road - Source: Gloucester Planning and Zoning

Map EC-4: Prime Farmland



Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS) identifies areas that are appropriate for farming through its soil surveys. Gloucester County possesses over 53,000 acres of prime farmland, over 22,000 acres of land that would be considered prime farmland if properly drained, and over 7,500 acres of farmland that is of statewide importance. The NRCS classifies farmland based on its potential agricultural productivity. **Prime farmland** is considered the best for agricultural use in terms of climate, location, physical and chemical properties, available water supply, permeability, and erosion potential. **Farmland of statewide importance** is land that is not quite as good as prime farmland for agricultural uses or that requires additional treatment to produce high agricultural yields. The precise definition of farmland of statewide importance varies by state, while prime farmland meets a national standard. Prime farmland is discussed in greater detail on pages 19-21 & 127.

98,000 acres of Gloucester,⁴ over two-thirds of all County land. Additionally, Gloucester contains approximately 21,500 acres of farmland, including pastureland and cropland, a decrease from the 23,000 acres of farmland reported in 2007. Although soybeans and corn are the major crops produced, a significant amount of livestock, including cattle and horses, are also kept. Many local farms are small-scale, with nearly 60% selling less than \$2,500 in product, and over 70% are less than 50 acres. The number of farms over 500 acres has also decreased since 2007.

The Natural Resources Conservation Service conducts soil surveys to identify farmland as prime farmland, farmland of statewide importance, farmland of local importance, and unique farmland. Nearly 53,300 acres within the County is classified as prime farmland (most suitable for crop production), 22,000 acres is considered prime farmland if drained, and over 7,500 acres is categorized as farmland of statewide importance (suitable for crop production). As shown on Map EC-4, most of the County's prime farmland is located west of Route 17 and north of Route 3/14 and some undeveloped areas near Gloucester Point/Hayes are classified as farmland of statewide importance.

Both forestland and farmland benefit the County and contribute to its quality of life. Conversion of agricultural lands is an important consideration since farms and forestlands significantly contribute to the local economy and are identified with the County's rural character and rich history. Additionally, agriculture, forestry, and conservation lands require less County resources, providing both fiscal and environmental benefits.

Commercial

Route 17 land use has shifted from rural residential to commercial since the 1950's due to the Coleman Bridge construction and establishment of Route 17, which is reflected in the County's current zoning pattern. As newer, convenience-oriented shopping centers, retail, service, and fast food establishments were built, commercial activity within the Court House,

⁴ Coastal Change Analysis Program Regional Land Cover. NOAA Coastal Services Center. <http://www.csc.noaa.gov/digitalcoast/data/ccapregional/>



*Typical commercial development along Route 17 -
Source: Gloucester Planning and Zoning*

primarily along Main Street, decreased. However, recent enhancement and redevelopment efforts have since helped to revive this traditional commercial corridor.

Most of Gloucester's commercial developments are located along Route 17 between Gloucester Point and the Court House, Main Street in the Court House, and at intersections along Route 17 north of the Court House, with some water-dependent uses near the coastlines. These commercial uses, primarily retail, medical care, recreation, and entertainment, provide employment and shopping destinations for County and other Middle Peninsula residents. There are also some small- and medium-sized commercial establishments along secondary roads, which generally include neighborhood-oriented businesses.

Increased development on Route 17 intensified congestion along this roadway due to additional site entrances and exits and a more dispersed development pattern. Route 17 features many strip developments with undeveloped or vacant land interspersed within, creating a linear development pattern between the Court House and Gloucester Point/Hayes, which contrasts with the rural character north of the Court House. As growth is encouraged throughout this corridor, it is important to consider potential impacts on aesthetics, traffic congestion, connectivity, access management and natural resource preservation and



*Rappahannock Concrete Corp along Route 17 -
Source: Gloucester Planning and Zoning*

potential conflicts between pedestrian, cyclists, and other transportation modes are also important factors as active transportation becomes more practical with increased commercial activity and proximity to services.

Industrial

Industrial uses are not established in a central location and exist at varying intensities. Light industrial uses are found throughout the County while heavier industries are typically located away from other incompatible uses. Light industries include laboratory testing, ink cartridge recycling, and rental storage facilities, medium industrial uses contain warehousing and trucking or contractor storage, and heavy industries involve sand and gravel operations, concrete manufacturing, asphalt manufacturing, wood processing, a landfill, and a recycling facility.

Many Industrial uses in the County were established prior to zoning or are located on existing industrial zoned properties. Vacant land zoned for future industrial operations is limited and the establishment of most industrial uses requires a rezoning or special exception. Impediments to establishing new, large industrial facilities include considerations such as major roadway access, proximity to incompatible uses and environmentally sensitive areas, and the absence of rail or natural gas.

Institutional

Local institutional uses include schools, fire stations, libraries, government office buildings, post offices, churches, the Riverside Walter Reed Medical Center, the County's water treatment plant, and the Virginia Institute of Marine Science and Rappahannock Community College campuses. These uses occupy only a small percentage of the total land area but are important community resources and employment centers.

Special Areas

Gloucester possesses several areas specified for smaller area planning efforts due to their economic contributions, population concentrations, or environmental characteristics. Special plans have been conducted for Gloucester Court House, Gloucester Point/Hayes, and the Dragon Run Special Planning Area.

Gloucester Court House

Gloucester Court House, the County seat and a major population center located in the middle of the County, consists of historic structures, a public square, and several land uses, including residential, commercial, and public uses. Most residents would consider the Court House to be a distinct village due to its courthouse green, grid street system, and historic downtown Main Street.

The Court House has progressed through several development phases with the original courthouse complex built between 1679 and 1684 to include a jail, Clerk's office, and lawyers' offices. Through the late 1800's, this area contained only a few establishments, but as the population increased following the Civil War, private and public buildings, including those along Main Street, were established. However, come the 1900's, more development occurred outside the Court House, especially along Route 17 following its construction.

Currently, Gloucester Court House is a major historical



Gloucester Court House Main Street - Source: Gloucester Parks, Recreation & Tourism

area, designated in the County's Historic Overlay District as well as the State and National Historic Registers and retaining several historic structures along with the traditional small-town character. The Court House also includes a mixture of uses, such as commercial, residential, and institutional, along with the Edgehill and Main Street shopping centers. This area houses the County's government offices, an elementary school, the main library branch, a fire and rescue station, several churches, and the Riverside Walter Reed Medical Center, containing a hospital, doctors' offices, and other medical facilities. The local residential pattern, based off of Main Street, is of greater density than most of the County, with many single-family detached residences and other multi-family units.

The Court House Village Sub-Area Plan, adopted in February 2013, was the Court House's first specific area plan, with prior efforts designating business and single- or multi-family residential uses. This Sub-Area Plan, conducted through a collaborative effort between the Main Street Preservation Trust and the County, examines the Main Street core along with the surrounding areas that contribute to a functional mix of uses typically seen in village areas.

Gloucester Point/Hayes

The Gloucester Point/Hayes area, located at the southern end of the County, is the most densely developed population center within the County, containing roughly 27% of the total population within 3% of the County. This area rapidly grew when the Coleman Bridge opened (1952), resulting in primarily concentrated residential development. Although Gloucester Point/Hayes has long been considered a "Village Center," it does not contain certain characteristics of traditional villages and most commercial development has occurred along Route 17.

This first specific area plan, the Gloucester Point Plan, adopted in 1995, contained the Census Bureau's geographic boundaries for the Census Designated Place (CDP) due to Gloucester Point's concentrated population. A subsequent plan, the Gloucester Point/Hayes Village Development Area Plan (2011), updated this sub-area planning effort. Through significant local stakeholder input, the sub-area plan established a vision for this area through three (3) "core" village centers and outlying neighborhood development.

Dragon Run Special Planning Area

The Dragon Run watershed, home to various plant and animal species and recognized for its ecological integrity, is an important natural area within the County. Historically an important natural resource for Native American and European inhabitants, this area continues to support forestry, farming, hunting, and fishing activities.

Although development pressure in the watershed is currently low, future land development could disrupt the area's natural and economic resources and rural character. The Middle Peninsula Planning District Commission (MPPDC) formed the Dragon Run Steering Committee in 1985 (composed of local elected officials and landowners) to promote local cooperation and coordination to address watershed issues and encourage proactive development and implementation of goals, objectives, and action plans to form a watershed management plan. The MPPDC, in partnership with the Virginia Coastal Zone Management Program, create the Dragon Run Watershed Special Area Management Plan (SAMP) in 2002 to protect the Dragon Run through collaborative, multi-level planning that develops and implements enforceable policies as well as identifies and helps mitigate land use conflicts through open discussion and consensus building. During this process, the

Steering Committee identified two (2) main conflicts: balancing conservation and private property rights and weighing private land use and public water use. The SAMP process culminated in the Dragon Run Watershed Management Plan, adopted in 2003, and aimed to support and promote community-based efforts to preserve the cultural, historic, and natural character of the Dragon Run, while preserving property rights and the traditional uses within the watershed.⁵ This plan included three (3) main goals:

1. Establish a high level of cooperation and communication among the four (4) counties within the Dragon Run Watershed to achieve consistency across county boundaries.
2. Foster educational partnerships and opportunities to establish the community's connection to and respect for the land and water of the Dragon Run.
3. Promote the concept of landowner stewardship that has served to preserve the Dragon Run Watershed as a regional treasure.

Through adopting the Watershed Management Plan, Gloucester embraced several policies that include preservation tools and recommendations for this area.

⁵ Dragon Run Steering Committee, "Dragon Run Watershed Management Plan," November 2003, Middle Peninsula Planning District Commission



Dragon Run (Photo Credit: Teta Kain) - Source: Dragon Run Watershed Management Plan



Courtesy of Sara Harris Photography for the Gloucester Village Main Street Preservation Trust

CHAPTER 3

Economic Development

Assessing a locality's current economic conditions and planning for growth are important functions of a comprehensive plan, especially for local governments striving to attract and retain businesses, provide residents with employment opportunities, and support the local tax base. Employment patterns, population changes, and the types and availability of jobs give insight into a locality's growth or decline. Analysis of this information will help to better understand Gloucester's economic climate along with that of Hampton Roads and the Middle Peninsula. This chapter provides an overview of the current local economy and future opportunities.

Service industries are the County's primary source for employment and sales tax revenues resulting from Gloucester's history and position in the regional economy. Located on the outskirts of Hampton Roads' urban centers, many residents commute to jobs outside the County closer to regional centers. Gloucester is also limited by a single major transportation corridor, Route 17, which, combined with the historically agrarian economy, has resulted

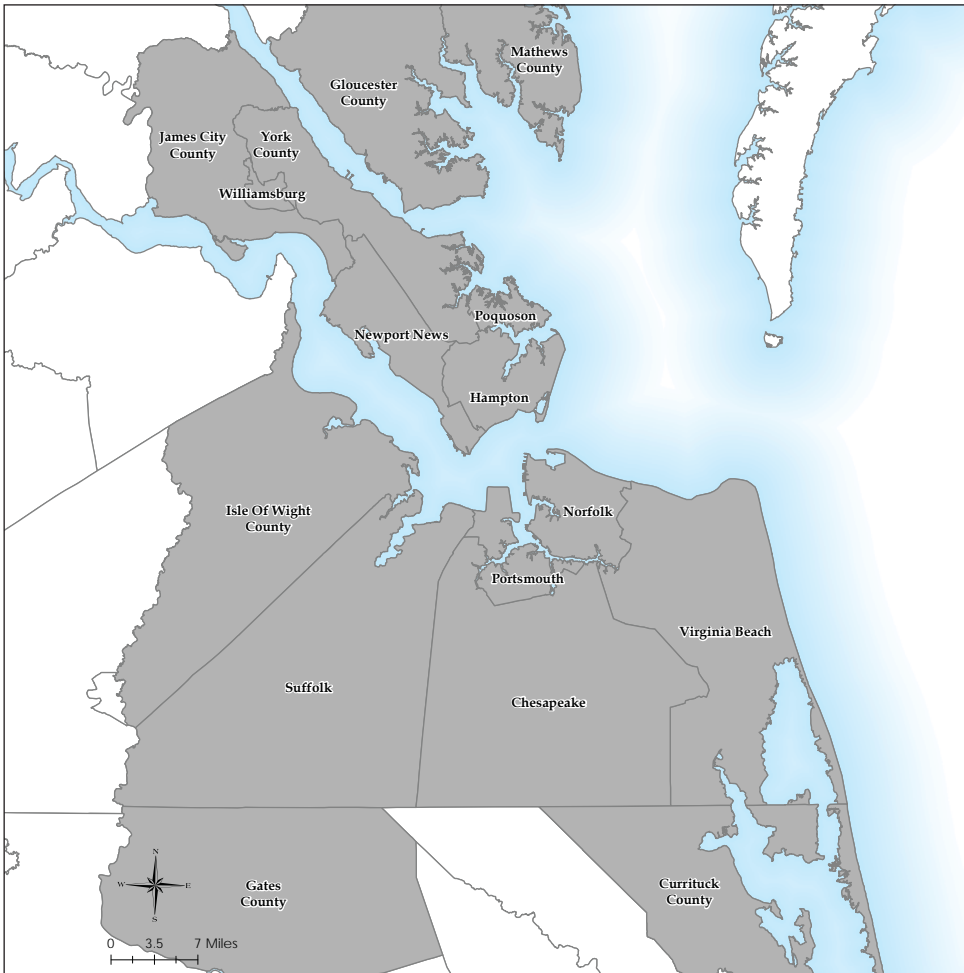
in slower economic development compared to other Hampton Roads localities.

Existing Conditions and Trends

Gloucester is located within the Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area (MSA), also referred to as the Hampton Roads MSA, an urban area with a population of 50,000 or more including adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.¹ This region contains nine (9) cities and seven (7) counties, as shown on Map ED-1, and is part of a larger Combined Statistical Area with two (2) North Carolina Micropolitan Statistical Areas that consist of Camden, Dare, Pasquotank, Perquimans, and Tyrell Counties. Gloucester is contained in the Hampton

¹ <http://www.census.gov/population/www/metroareas/metroarea.html>

Map ED-1: Hampton Roads MSA

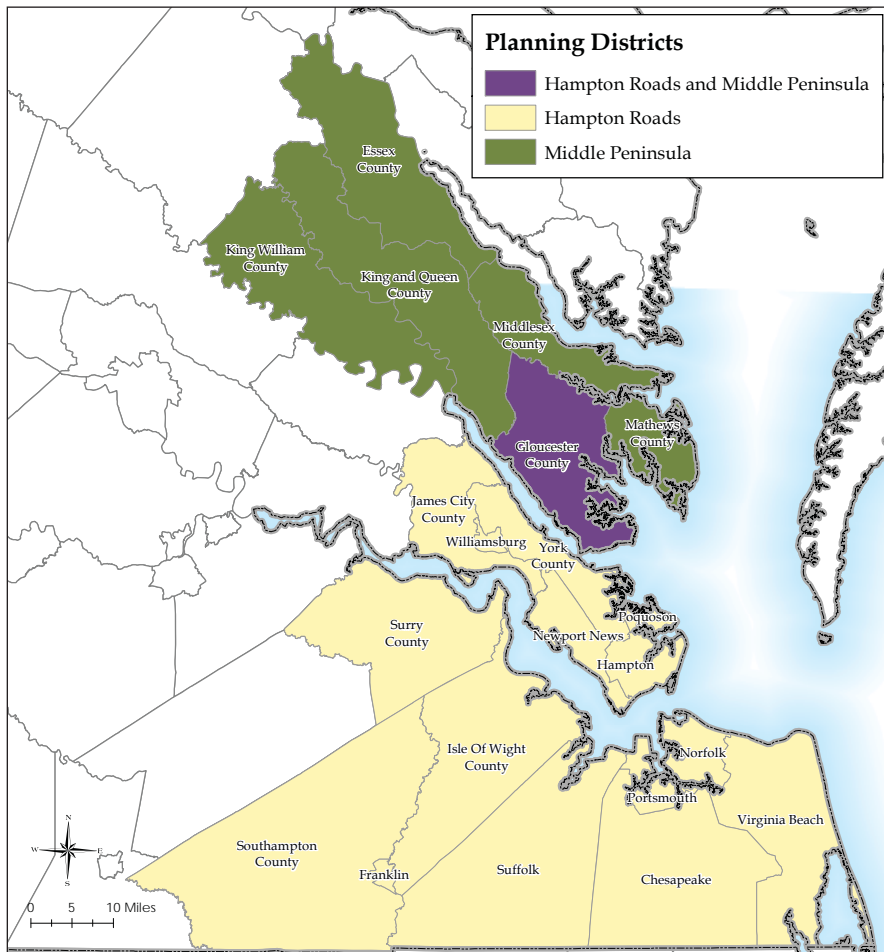


Data Source: Office of Management and Budget, U.S. Census Bureau

Metropolitan Statistical Areas (MSA's) are designed by the Office of Management and Budget and are defined as urban areas with a population of 50,000 or more and any adjacent counties that have "a high degree of social and economic integration (as measured by commuting to work) with the urban core." Urban cores are identified based on evidence of development, such as roads, homes, businesses, and infrastructure. Each MSA contains principal cities, central counties, and outlying counties. The Hampton Roads MSA (the formal designation is the Virginia Beach-Norfolk-Newport News, VA-NC MSA) consists of five (5) counties (Gloucester, Isle of Wight, James City, Mathews, Surry, and York) and nine (9) independent cities (Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg) in Virginia, as well as Currituck County and Gates County in North Carolina. The current population of the region is estimated at 1.7 million residents.

In addition, Hampton Roads now forms the largest part of a new Combined Statistical Area with two (2) micropolitan statistical areas in North Carolina: the Elizabeth City Micropolitan Statistical Area, which consists of Camden, Pasquotank, and Perquimans Counties, and the Kill Devil Hills Micropolitan Statistical Area, which consists of Dare and Tyrell Counties. The regional economy is discussed on page 25.

Map ED-2: Planning District Commissions



Data Source: Hampton Roads Planning District Commission, Code of Virginia

Planning District Commissions (PDC's) are voluntary, state-enabled, locally-created regional planning agencies and forums. The purpose of a PDC is "to encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance," according to §15.2-4207 of the Code of Virginia. The authorization for and responsibilities of PDC's are described in the Regional Cooperation Act, as amended. Functional areas that PDC's may address include, but are not limited to: economic and physical infrastructure development, solid waste, water supply, and environmental management, transportation, criminal justice, emergency management, human services, and recreation. Primary duties of PDC's include conducting studies on regional issues and problems, providing technical assistance to state agencies and localities, serving as liaisons between localities and state agencies, and conducting regional strategic planning. Gloucester County is a member of two (2) PDC's: the Hampton Roads Planning District Commission and the Middle Peninsula Planning District Commission. The Hampton Roads Planning District Commission members include six (6) counties (Gloucester, Isle of Wight, James City, Southampton, Surry, and York) and ten (10) cities (Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg). The Middle Peninsula Planning District Commission includes six counties (6) as members: Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex. Planning District Commissions are discussed on page 28.

CHAPTER 3 - ECONOMIC DEVELOPMENT

Roads MSA because of its commuter ties to the urban core, including Newport News, Hampton, James City County and York County.

Gloucester is a member of both the Hampton Roads and Middle Peninsula Planning District Commissions, though Hampton Roads has historically had a greater regional impact on local economic growth and development. However, as the Middle Peninsula continues to grow, its influence is likely to increase. The boundaries of the Hampton Roads and Middle Peninsula Planning Districts are shown on Map ED-2.

Gloucester Court House, the County seat, is 59 miles east of Richmond, 135 miles south of Washington, D.C., and 45 miles north of Norfolk and the Hampton Roads ports, one of the world’s largest and busiest natural, deep-water harbors. Several military installations, including Naval Station Norfolk, Naval Air Station Oceana, and Joint Base Langley-Eustis, employ over 140,000 individuals and the federal government is Hampton Road’s most significant employer. Newport News Shipbuilding is the MSA’s largest private employer and the region’s economy is comprised of

service-based industries along with other new, diverse industries. Regional employment increased by 50,000 jobs between 2000 and 2010.

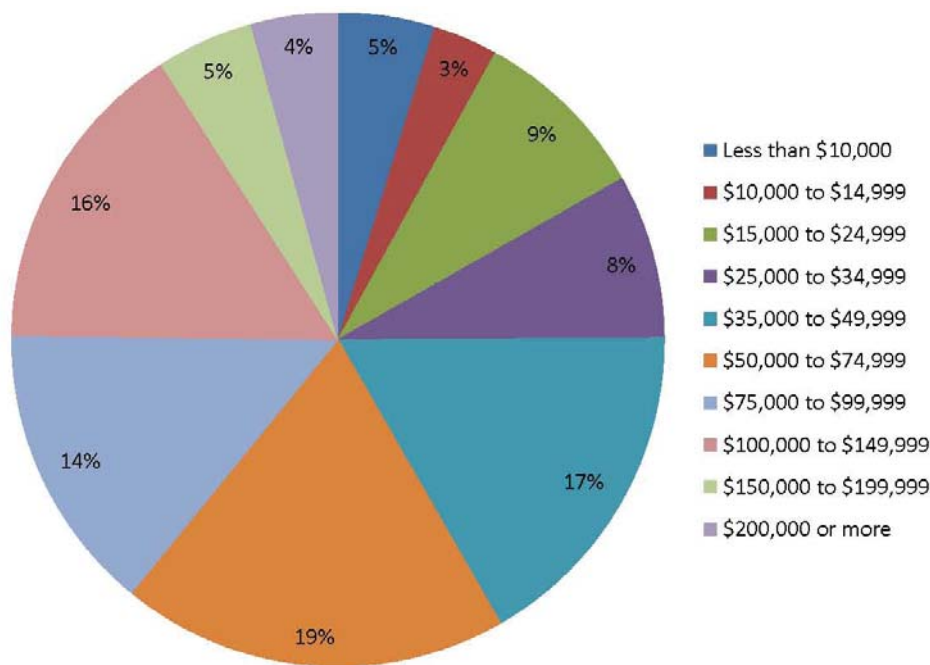
Income

The County’s Annual per capita income (PCI) in 2013 was \$28,673, lower than the Hampton Roads MSA average of \$28,894.² However, the County’s median household income was \$60,519, slightly higher than the MSA’s median household income of \$58,844, but lower than Virginia’s median household income of \$63,907, as shown in Table ED-1.

Roughly 25% of Gloucester County’s households earn between \$25,000 and \$50,000, while nearly 34% earn between \$50,000 and \$100,000. Approximately 17% of Gloucester’s households earn less than \$25,000, while almost 25% earn more than \$100,000, as shown in Figure ED-1.

2 2009-2013 5-year American Community Survey

Figure ED-1: Median Income Distribution in Gloucester County, 2011-2013



Source: American Fact Finder, www.census.gov

Table ED-1: 2009-2013 Income Comparisons

	Per Capita Income	Median Household Income	Median Family Income
Gloucester County	\$28,673	\$60,519	\$72,719
Virginia Beach-Norfolk-Newport News, VA-NC MSA	\$28,894	\$58,844	\$70,343
Virginia	\$33,493	\$63,907	\$76,754
United States	\$28,155	\$53,046	\$64,719

Source: 2009-2013 American Community Survey

Real Estate and Finance

Gloucester County collects various taxes, including real estate tax and personal property taxes on automobiles, trucks, motor homes, mobile homes, motorcycles, trailers, airplanes, business personal property, farm machinery, and tools. Local taxes are set annually with each budget and are typically

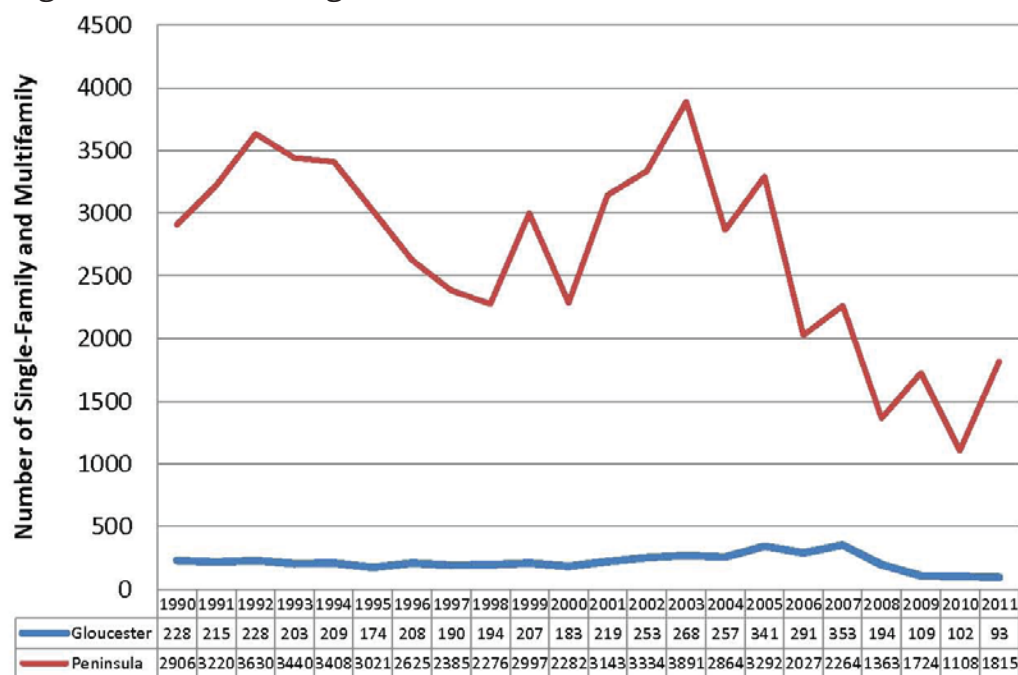
lower than most Hampton Roads localities. The Board of Supervisors adopts the County's annual budget each Spring, with the largest components being the County's Public Schools, Public Safety, capital needs, and debt funds.

Construction and Housing

Gloucester averaged over 220 single- and multi-family housing permits annually between 2000 and 2011, a significant decrease from the 30-year average of over 250 permits per year since 1980. However, residential building permits were rising through the 2000's (reaching a high of 353 permits in 2007) until the housing market decline in 2008 slowed this pace to roughly 100-125 per year since 2008. Although manufactured homes account for approximately 15% of the current housing stock (nearly 2,200 homes), the number of permits for new manufactured homes has declined over time.³

³ Gloucester County Housing Needs Assessment, 2007

Figure ED-2: Building Permits Issued in Gloucester and the Peninsula, 1990-2011



Source: Gloucester County Building Inspections, HRPDC 2012 Data Book

The number of building permits issued regionally has varied over the last 30 years, as shown in Figure ED-2. While permits issued has remained relatively stable in Gloucester, the Peninsula’s yearly variation resulted from additional permits issued in James City County and Newport News between 2001 and 2005.⁴

Although the amount of building permits issued decreased during the housing decline and recession, as the economy recovers, development is likely to rise, resulting in increased permitting and residential construction.

Retail Sales

Local retail sales have grown faster than the regional average over the past 20 years, increasing by 4.8% annually (compared to the Peninsula and HRPDC annual averages of 3.3%) from 1990 to 2011. However, the County’s share of regional retail sales has remained below its population and income shares, indicating room for expansion in this sector, as shown in Table ED-2.

4 HRPDC 2010 Data Book



Courtesy of Sara Harris Photography for the Gloucester Village Main Street Preservation Trust

Table ED-2: 2010 Share of Population, Income, and Retail Sales

	Population	Income	Retail Sales
Gloucester – Peninsula	7.2%	6.8%	5.9%
Gloucester – Hampton Roads	2.2%	2.1%	1.9%

Source: HRPDC

Regional Employment Trends

From 2000 to 2010, Hampton Roads’ civilian employment expanded at a 0.4% average annual rate,⁵ slightly lower than Virginia’s 0.8% rate, as shown in Table ED-3. Of the eleven (11) metropolitan statistical areas within Virginia, the Hampton Roads MSA had the fifth fastest average annual employment growth and the second largest total employment.

Gloucester Employment Trends

In 2014, Gloucester’s unemployment rate was 4.8%, compared to 5.6% on the Peninsula, 5.7% in Hampton Roads, 5.2% in Virginia, and 6.2% across the nation.⁶ From 1990 to 2011, the County’s civilian labor force increased by 33.5%, from 15,217 to 20,316, and civilian employment increased by 30.2%, from 14,679 to 19,124. Unemployment remained relatively level, between 400 and 800 persons, from 1990 to 2008, but increased in 2009 (1,254) and 2010 (1,349), primarily due to the economic downturn, before declining in 2011 to 1,112.

Although the County contains approximately 7% of the Peninsula’s population and 2% of the Hampton Roads regional population, the local employment share is slightly higher, with roughly 8% of the Peninsula’s total employment and nearly 2.4% of the region’s total employment.

The Virginia Employment Commission (VEC) reports

5 U.S. Bureau of Economic Analysis
6 VA Employment Commission: VA Workforce Connection

Table ED-3: Average Annual Employment Growth in Virginia Metropolitan Statistical Areas

	1970-1980	1980-1990	1990-2000	2000-2010	1970-2010
Blacksburg-Christiansburg-Radford, VA	2.7%	1.9%	1.1%	-0.2%	1.4%
Charlottesville, VA	3.8%	2.7%	2.3%	1.4%	2.6%
Danville, VA	0.7%	0.0%	0.8%	-1.3%	0.1%
Harrisonburg, VA	2.8%	2.8%	2.5%	0.9%	2.2%
Kingsport-Bristol-Bristol, TN-VA	2.4%	1.3%	0.8%	-0.4%	1.0%
Lynchburg, VA	2.1%	1.7%	1.3%	0.2%	1.3%
Richmond, VA	2.6%	2.3%	1.6%	0.7%	1.8%
Roanoke, VA	2.2%	1.8%	1.5%	-0.2%	1.3%
Virginia Beach-Norfolk-Newport News, VA-NC	2.1%	2.8%	1.0%	0.4%	1.6%
Washington-Arlington-Alexandria, DC-VA-MD-WV	2.5%	3.5%	1.4%	1.3%	2.2%
Winchester, VA-WV	2.7%	3.6%	2.5%	1.0%	2.4%
Virginia	2.6%	2.9%	1.7%	0.8%	2.0%
United States	2.3%	2.0%	1.8%	0.4%	1.6%

Source: Bureau of Labor Statistics

the top local employers are local government (including schools), retail, health care, and food services, as listed in Table ED-4. The major non-local government employers are Riverside Health System the Virginia Institute of Marine Science, Rappahannock Community College, and Wal-Mart. Roughly 19% of Gloucester's civilian employees work in retail trades, 17% in local government, 17% in health care and social assistance, and 11% in accommodation and food services (as of the first quarter of 2015).⁷

⁷ Virginia Employment Commission

Table ED-4: 20 Largest Employers in Gloucester County, 1st Quarter 2015

1.	Gloucester County Public Schools
2.	Riverside Health System Regional Medical Center (Riverside Walter Reed Hospital)
3.	Virginia Institute of Marine Science
4.	County of Gloucester
5.	Wal-Mart
6.	Rappahannock Community College
7.	Walter Reed Convalescent and Rehabilitation Center
8.	Lowes' Home Centers, Inc.
9.	Food Lion
10.	The Home Depot
11.	Canon Environmental Technologies, Inc.
12.	Farm Fresh
13.	JL Jkm Enterprises Lc
14.	Gloucester House
15.	Hope in Home Care
16.	Hardee's
17.	Rappahannock Concrete Corporation
18.	Wen Gap LLC
19.	Dominion Virginia Power
20.	Applebees

Source: Virginia Employment Commission, Labor Market Information



Source: Riverside Health System

Major Industries

Gloucester's economy has historically been natural resource-based, with local land and water providing farmers and watermen jobs and income for decades. More recently, these industries, while still important components, are declining as other industries, such as retail and health care, have increased locally. Should this trend continue, Gloucester's economy will likely become even more diverse in the future.

Agriculture

In 2012, Gloucester County had over 130 active farms, with the average size being 149 acres and the median size being 34 acres. The number of large farms (500 acres and above) has remained relatively stable since the late 1980's, between 10 and 15 farms, while the number of smaller farms (fewer than 50 acres) has increased, from 61 in 1987 to 85 in 2007. The average farm size has decreased by nearly 25% since the 1987 Census of Agriculture, from 199 acres to 149 acres and the median farm size (recorded since 1997) has decreased by over 40%, from 58 acres to 34 acres, as shown in Table ED-5.

Table ED-5: Gloucester County Farm Characteristics, 1987 to 2012

Farm Size (acres)	1987	1992	1997	2002	2007	2012
Average Size	199	221	215	168	144	149
Median Size	*	*	58	47	17	34
1 to 9	17	19	20	32	35	30
10 to 49	44	35	29	56	77	55
50 to 179	30	23	31	33	24	29
180 to 499	24	18	15	18	9	10
500 to 999	9	10	5	4	4	6
1,000 +	6	6	8	10	10	6
Total Farms	130	111	108	153	159	136

Source : USDA Census of Agriculture

* Data not collected in this year.



Agriculture field - Source: Gloucester Planning and Zoning

Total cropland decreased by 25% since 1987, from 18,315 acres to 13,673 acres. However, the average value of local farms increased by over 60% from 1987 to 2007, from \$460,069 to \$750,378 and the market value of agricultural products, including crops and livestock, increased by more than 200%, from \$3,570,000 to \$11,273,000. While there were more farms with total sales over \$100,000 in 2012 (when compared to 1987), there were also more farms with total sales less than \$10,000. The number of operators whose primary occupation is farming has fluctuated over the last quarter-century, and, especially, the last decade. In 2007, there were 92 operators who were farmers and 67 who had other primary occupations. However, in 2012, those number reversed, to 53 farmers and 83 with other primary occupations, indicating that farming is still practiced within Gloucester, but farming trends are changing, as shown in Table ED-6. While traditional agriculture may be declining, existing local agricultural lands still provide opportunities for diversified agricultural-based businesses, agritourism, niche farms, farmers' markets, and similar enterprises, allowing property business owners to capitalize on the community's rural character while providing sufficient revenues. These businesses also cater to tourists, particularly those from urban areas seeking to experience rural recreational opportunities. The County should look

Table ED-6: Gloucester County Farm Operators, 1987 to 2012

	1987	1992	1997	2002	2007	2012
Total Farms	130	111	108	153	159	136
Operators, Farmers	58	57	55	64	92	53
Operators, Other	72	54	53	89	67	83

Source: USDA Census of Agriculture

for opportunities to support and expand these forms of agriculture as a component of the local culture as well as an economic opportunity.

Working Waterfronts

Watermen are uniquely referenced in the Chesapeake Bay region, with many identifying themselves by their

catch or gear, such as “oyster tongers,” “crabbers,” “clambers,” “pound netters,” or “scallop dredgers.” This historic lifestyle has occurred for hundreds of years and continues to define our coastal heritage.

Watermen impact the local economy beyond their catch as they harvest seafood and distribute their product to processing plants, wholesalers, retailers, and restaurants, resulting in indirect economic benefits for those who build and repair boats, sell ice, and run marinas. The Virginia Institute of Marine Science (VIMS) estimates that fishing within the County generates nearly 600 full-time jobs throughout Virginia. Although watermen are independent and adaptable to change, they currently face increased challenges, causing a decline in their total catch and the total number of practicing watermen. Similar to agriculture, working waterfronts are tied to the County’s culture and efforts to protect this industry, such as recreational and tourism opportunities, are crucial. Specific land use designations to preserve working waterfronts can be found in the Future Land Use chapter.



Oyster boat - Source: www.chesapeakebay.net

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Other Industries

The largest local employment sector in 2015 was retail trade, with over 1,700 employees, followed by health care and social assistance, educational services, accommodation and food services, and professional, scientific, and technical services, as shown in Table ED-7. Although not included in U.S. Bureau of Labor Statistics reports, government is another substantial sector.

Expanded local sales and services has increased economic diversity, but most residents commute outside the County for employment, increasing from 35% in 1960 to 58% in 2010. Approximately 82% of commuters travel to Hampton Roads, 6% travel to other Middle Peninsula and Northern Neck localities, and 12% travel to Richmond and the surrounding areas.⁸

Tourism

In 2014, domestic tourism and travel spending in Virginia totaled \$22.4 billion, an increase of 4.1% from 2013, and nearly 217,000 Virginians are directly supported by domestic travel, with a total 2014 payroll

of over \$5 billion.⁹ The recent economic downturn has resulted in less tourism revenue, but this industry still influences Gloucester's economy. Although local tourism does not significantly contribute to the regional economy, this industry is growing, with employment and local tax revenue increasing by 7% and 11%, respectively, since 2010. Continued and expanded partnership with key stakeholders will assist in improving tourism opportunities and revenues.

⁹ Economic Impact of Domestic Travel on Virginia and Localities (2014)



Gloucester County Visitors Center - Source: Gloucester Parks, Recreation & Tourism



One of many events hosted in Gloucester's Main Street Village attracting both tourist and residents - Source: Gloucester Parks, Recreation & Tourism .

Table ED-7: Employment by Sector in Gloucester County and Virginia, 1990-2012

	Virginia				Gloucester County			
	1990	2000	2010	2015	1990	2000	2010	2015
Agriculture, forestry, fishing & hunting	0.44%	0.42%	0.33%	0.30%	1.15%	0.60%	0.67%	0.54%
Mining, Quarrying, and Oil and Gas Extraction	0.55%	0.26%	0.24%	0.20%	***	***	***	***
Utilities	0.68%	0.52%	0.53%	0.50%	***	***	***	***
Construction	6.81%	6.48%	5.44%	5.04%	7.27%	8.57%	6.68%	6.02%
Manufacturing	14.63%	10.67%	6.74%	6.59%	5.43%	4.15%	1.76%	1.94%
Wholesale trade	3.65%	3.37%	3.11%	3.00%	1.76%	1.45%	2.78%	2.39%
Retail trade	13.28%	12.12%	11.47%	11.34%	17.18%	18.21%	19.39%	19.26%
Transportation & warehousing	3.57%	4.03%	3.40%	3.53%	2.63%	2.75%	2.28%	1.89%
Information	2.79%	3.57%	2.30%	2.05%	2.13%	1.53%	1.20%	0.84%
Finance and insurance	3.55%	3.58%	3.42%	3.63%	2.33%	2.08%	2.74%	2.42%
Real estate and rental and leasing	1.70%	1.59%	1.47%	1.40%	1.49%	1.56%	1.30%	1.15%
Professional and technical services	6.22%	8.51%	11.04%	10.99%	9.20%	7.18%	7.84%	8.08%
Management of companies and enterprises	1.23%	2.11%	2.09%	2.05%	***	***	***	***
Administrative and waste services	4.31%	6.25%	5.66%	5.96%	1.26%	2.38%	2.40%	3.18%
Educational services	7.66%	8.22%	9.93%	9.90%	16.90%	16.97%	15.61%	13.47%
Health care and social assistance	8.33%	9.39%	12.10%	12.76%	12.26%	11.76%	13.61%	17.25%
Arts, entertainment, and recreation	1.25%	1.63%	1.82%	1.55%	1.15%	2.69%	1.96%	1.76%
Accommodation and food services	7.16%	7.44%	8.36%	8.71%	6.49%	8.61%	10.92%	10.54%
Other services, except public administration	3.52%	3.56%	3.63%	3.63%	5.17%	4.09%	3.86%	4.26%
Public administration	8.49%	6.17%	6.83%	6.61%	4.12%	4.04%	4.06%	4.01%
Unclassified establishments	0.18%	0.12%	0.09%	0.27%	2.08%	1.38%	0.95%	***

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages

*** Data is non-disclosable.



Top five employment sectors in Gloucester County: Retail trade (19.26%), Health care and social assistance (17.25%), Educational services (13.47%), Accommodation and food services (10.54%), and Professional and technical services (8.08%). Image Credits: Sara Harris Photography, Riverside Health System, Gloucester County Schools, and Rappahannock Community College

Projections

The Hampton Roads Planning District Commission (HRPDC) produces projections for local and regional population, employment, and workforce. These figures, shown in Tables ED-8, ED-9, and ED-10, are used for long-range regional and local planning efforts.

Gloucester's 2040 population is expected to increase by 9.1%, a slower rate than the regional (22.2%) and Peninsula (13.5%) rates, as listed in Table ED-8.

Gloucester also expects a workforce increase of 8.9%, slightly below the anticipated population growth, but lower than those for the Peninsula (12.9%) and Hampton Roads (18.7%), as shown in Table ED-9.

Additionally, local employment is expected to increase, although not as much as the projected population increase. Overall employment is estimated to rise by 26.2%, similar to the Peninsula (25%) and Hampton Roads (28.5%) rates, as listed in Table ED-10, and local retail employment is expected to increase by nearly 30%.

Table ED-8: Projected Population Growth

	1970	1980	1990	2000	2010	2040 (Forecast)	Projected Growth, 2010-2040
Gloucester County	14,059	20,107	30,131	34,780	36,858	40,200	9.1%
James City County	17,853	22,339	34,859	48,102	67,009	104,200	55.5%
York County	27,762	35,463	42,422	56,297	65,464	82,700	26.3%
Peninsula	333,140	364,449	435,197	481,330	513,704	583,000	13.5%
Hampton Roads	1,108,393	1,213,999	1,454,183	1,566,801	1,666,310	2,037,000	22.2%

Source: HRPDC

Table ED-9: Projected Increase in Workforce by Place of Residence

	1980	1990	2000	2010	2040 (Forecast)	Projected Growth, 2010- 2040
Gloucester County	8,447	14,387	16,952	18,003	19,600	8.9%
James City County	10,133	17,692	21,922	30,264	47,000	55.3%
York County	16,970	21,420	28,636	33,033	41,700	26.2%
Peninsula	165,816	212,763	229,790	250,121	282,500	12.9%
Hampton Roads	552,970	723,785	761,207	829,358	984,700	18.7%

Source: HRPDC

Table ED-10 Projected Increase in Overall Employment

	1970	1980	1990	2000	2010	2040 (Forecast)	Projected Growth, 2010-2040
Gloucester County	3,493	6,468	9,700	13,002	14,421	18,200	26.2%
James City County	5,646	12,330	19,645	25,943	37,183	58,300	56.8%
York County	8,450	10,967	18,676	24,746	33,354	47,290	41.8%
Peninsula	153,365	190,391	256,242	289,273	300,245	375,400	25.0%
Hampton Roads	542,081	663,144	870,688	963,231	994,089	1,277,700	28.5%

Source: HRPDC

Challenges and Opportunities

Gloucester's economic development strategies and policies are crucial components to the Comprehensive Plan since the type and extent of economic growth directly impacts land use decisions and infrastructure investments. The ability to pay for new services and appropriately guide growth depends on the balance between economic growth and residential development. Increased high-paying jobs allow the County to provide additional services and facilities without raising real estate or personal property taxes and having these jobs outside the County provides revenue to other localities while Gloucester still must provide resident services. Balancing economic development with residential growth maintains and improves quality of life while local economic development and the County's fiscal capacity are directly linked to the region's economy, affecting residential development, infrastructure, needs, and services.

Job location also impacts local infrastructure needs since jobs outside the County increase the transportation infrastructure investment needed to support commuters while local economic

development requires additional community facility investment, including transportation, utilities, and communications, to support increased jobs and workers. Employment expansion beyond the County's borders, specifically in the Hampton Roads area, influences local growth as well as transportation facilities and other types of infrastructure. Travel to employment outside the County will require further investments in commuter highway capacity or transit service, potentially in the form of an express bus serving Gloucester Court House and Gloucester Point/Hayes with connections to York County, Oyster Point, and Newport News, as envisioned in the Hampton Roads Regional Transit Vision Plan.¹⁰ As the village areas grow, development and redevelopment that provides commuter parking to support a dedicated bus service should be considered.

Over the past few decades, Gloucester has experienced considerable residential growth along with some economic growth. As Hampton Roads commuters choose to live on the Middle Peninsula, additional residential development strains the County's ability to provide the necessary services and facilities. Industrial and commercial growth can increase the County's fiscal capacity without impacting the local quality

¹⁰ http://www.drpt.virginia.gov/activities/files/Final_Report_03-17-11.pdf



Gloucester's economic development strategies and policies are crucial components to the Comprehensive Plan. The ability to pay for new services and appropriately guide growth depends on the balance between economic growth and residential development. Source: Gloucester County Planning and Zoning

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of life. Appropriate residential, commercial, and industrial growth that addresses potential conflicts is critical for balancing local economic development with history and culture.

The County's two (2) urbanized areas, Gloucester Court House and Gloucester Point/Hayes, connected by the Route 17 corridor, are more appropriate for development than the outlying areas. Concentrating the majority of industrial and commercial development in the Development District will assist in providing efficient infrastructure improvements and reduce the negative impacts of development in other areas of the County.

Sustaining Farms - On and Off the Water

Within Gloucester, the commercial seafood industry has had to adapt to changes in coastal land use and waterfront property. Historically, coastal communities featured strong fishery and shipbuilding industries that supported recreational and commercial uses.

However, in-migration and additional coastal development have threatened traditional working waterfront industries, as described by Jack Wiggin:

*"The viability of many businesses on the Gloucester (Massachusetts) waterfront has been and remains tied to the health of the commercial fisheries...without an economically viable waterfront business, property owners are unable, and lending institutions unwilling, to invest in capital improvements needed to maintain piers, wharves and other waterfront infrastructure."*¹¹

As local waterfront properties become more desirable, increased market values and real estate taxes may force seafood processing businesses to close and watermen to operate elsewhere. Additionally, traditional access points become privately maintained, further limiting access for watermen. Although the community values working waterfronts and their cultural heritage, the County lacks the resources to support this industry through publicly owned and maintained facilities, compelling watermen to either seek innovative options or cease operations.

¹¹ Preserving and Promoting a Working Harbor: The Experience of Gloucester, Massachusetts



Perrin River landing during the 2012 Chesapeake Bay blue crab season, September 2012. Photo taken from The Perrin River Commercial Seafood Harbor Master Plan.

Many local water bodies, such as the Perrin River and Aberdeen Creek, are established commercial seafood points. The Middle Peninsula Planning District Commission (MPPDC) and the Middle Peninsula Chesapeake Bay Public Access Authority (PAA) have focused efforts in these waterbodies to explore and improve commercial watermen conditions through funding from the Virginia Coastal Zone program to develop *The Perrin River Commercial Seafood Harbor Master Plan (2012)* and the *Aberdeen Creek Harbor Master Plan (2014)*,¹² with their recommendations incorporated into this Comprehensive Plan. As a result, the County, PAA, and other partners have taken steps to remove barriers threatening the commercial seafood industry while looking for other ways to preserve the local working waterfront culture and provide for growth of new and traditional waterfront industries.

Despite its recent decline, agriculture is still an important component to Gloucester's economy and culture. Agritourism is one option to help maintain local agriculture through combining entertainment, economic, and educational uses, such as corn mazes, markets, festivals, wineries, and retail and educational garden centers. Through an agritourism policy backed by the Comprehensive Plan and supportive zoning ordinances, Gloucester can maintain, attract, and develop options to promote local agriculture.

Maintaining viable working lands for agriculture, forestry, and aquaculture preserves the rural character

¹² <http://www.mppdc.com/index.php/reports/abc-reports>

while providing economic stability for these property owners. Specific efforts to promote agriculture, such as establishing special agriculture, aquaculture, and forestry districts and promoting conservation easements,¹³ along with developing policies that resolve use conflicts, will help preserve Gloucester's traditional culture and economy and provide benefits to the County while requiring few services in return.

This Plan begins to identify and protect working waterfronts and agriculture by designating areas on the Future Land Use Map for these uses, reflecting the County's support of these activities in their current locations and desire for their continuance while recognizing their specific infrastructure needs.

Increased Tourism

Gloucester possesses many cultural, historic, and natural resources that provide various benefits, including increased tourism, a major component of the local and regional economy. Tourism opportunities include lodging, dining, and other activities that accommodate day travelers from the Hampton Roads and Richmond regions. Gloucester should support travel-related businesses, especially those centered on the County's natural and historic resources. Resource preservation is vital to continuing and expanding local tourism. The Middle Peninsula State Park and

¹³ Report of the Center for Rural Virginia On the Expansion and Promotion of Farm Business and Rural Enterprises, November 2010



Gloucester County farm off Fletcher Road - Source: Gloucester County Planning and Zoning.

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Werowocomoco are examples of increased tourism opportunities stemming from the County's unique historical and natural attributes. There are a number of destinations throughout Hampton Roads, such as Williamsburg and Yorktown, that could generate a greater market for overnight visitors traveling to and staying within Gloucester.

Outdoor recreation is both a component of local tourism and residents' quality of life, with many localities providing land for outdoor recreational activities such as hiking, camping, biking, birding, boating, fishing, and swimming. Numerous economic benefits are associated with parks, open spaces, and sports and recreation programs since residents and businesses consider parks and recreational programs important "quality of life" factors. These services offer other benefits, such as reduced crime, greater community health, increased property values, and local tax revenues. Potential homebuyers often desire natural open space and walking and bicycling trails, and parks located near residences have a

positive impact on property values while reducing health care costs.¹⁴ Gloucester's natural and historic resources, along with its geographic location, offer many ecotourism and agritourism opportunities that highlight the County's rural character. Local facilities, such as parks, water access, and dedicated open space, also encourage visitors. These resources can be linked together to maintain and promote existing industries and traditions, such as agriculture, forestry, and working waterfronts, benefiting both tourists and County residents.

Special area plans that encourage tourism and growth will maximize returns on infrastructure investments. The Gloucester Courthouse Village Plan, adopted in 2010, makes recommendations for physical design, economic development, and marketing of this area, including lighting and landscaping upgrades, infrastructure improvements, and business incentives. Additionally, the Gloucester Point/Hayes Village

14 2013 Virginia Outdoors Plan, DCR



An aerial view of the archaeological core of Werowocomoco (a national park), on the York River in Gloucester County, VA - Source: Virginia Department of Historic Resources

Development Area Plan, adopted in 2011, focuses on encouraging economic growth in southern Gloucester and the Gloucester Court House Village Sub-Area Plan, adopted in 2013, includes connectivity, preservation, and economic vitality components.

Industrial Development Opportunities

The VIMS-Industry Partnership, established in 2003 as a joint venture between VIMS and the College of William & Mary's (W&M) Office of Economic Development, is a forum for facilitation and collaboration between faculty and staff and the Virginia business community that advises the VIMS Dean and Director regarding long-term partnerships with industry professionals and improved collaboration and technology transfer. More than 30 industry members from 19 companies, including the Gloucester County Director of Economic Development, participate in various initiatives,

from small, concept-based projects to multi-million dollar, multi-year programs that include Bio-Sensors, Autonomous Underwater Vehicles (AUV's), Algae-Biofuels, and Observing Systems.

The Gloucester Business Park, a 70-acre development located south of the Court House, was specifically designed to attract new and expanding commercial and industrial businesses within the County. This site is owned by the Gloucester County Economic Development Authority and includes various tenants, such as Canon Environmental Technologies, Inc. and Sentara Health Systems. The business park can accommodate business expansion and has been identified as a site for employment and light industrial uses.

In addition to the Gloucester Business Park, the County's Economic Development Authority has considered the prospect of establishing or supporting a future industrial park to provide opportunities for small trade and contracting business start-up or



The Gloucester Business Park, a 70-acre development located south of the Court House - Source: Gloucester Economic Development

expansion. Additional industrial development should be located where sufficient access is available and conflicts are mitigated.

Business Development

Small-business development is crucial to local economic development and programs promoting new business start-up and development may play an important role in future economic expansion. Numerous new or existing programs provided by Rappahannock Community College, the Virginia Department of Business Assistance, and the U.S. Small Business Administration can support economic development. Vocational programs for students, similar to existing programs offered through New Horizons and the Rappahannock Community College Workforce Development Center, provide other opportunities.

Advances in telecommunication technologies along with flexible work arrangements have increased the amount of people working from home, resulting in positive community impacts, such as decreased congestion, energy consumption, and air pollution. Similarly, infrastructure and training creates opportunities for individuals that otherwise might have difficulty finding work, such as single parents, elderly, and disabled individuals. The County can promote alternative working environments for residents through efforts that increase opportunities for at-home businesses and improved information technology resource access.

VDOT, to promote projects that serve the public, increase economic opportunities, and accomplish the County's goals. Involvement during the early stages of discussions is especially important. Sites or uses considered for development should be consistent with the County's Future Land Use Plan and the Plan's goals and objectives. Since efforts by the various entities require cooperation, the Department of Economic Development should continue to coordinate these pursuits as they consider flexible economic development strategies that expand the local economy and achieve other goals.

Goals, Objectives, and Implementation Strategies

Effective economic development requires coordinated decisions across multiple sectors and entities. Gloucester County Administration along with the Departments of Economic Development, Planning and Zoning, Public Utilities, and Parks, Recreation, and Tourism, among others, can facilitate discussions between developers and other agencies, such as

Goal ED-1: Expand and create diverse economic and commercial development opportunities that promote a balanced local economy.		
Objectives	Implementation Strategies	Time Frame
Support and promote economic opportunities for existing county institutions and stakeholders.	Review ordinances to ensure they support and promote economic opportunities.	Short Term
Provide necessary services and facilities for commercial and industrial development.	Work with the Economic Development Authority and other partners to ensure that resources are available.	Short Term
	Increase the availability of necessary infrastructure for existing and future commercial and industrial development, including water, sewer, and telecommunications infrastructure.	Ongoing
Encourage economic development by streamlining development processes.	Regularly evaluate existing processes for improvement.	Ongoing
Goal ED-2: Promote local employment.		
Objectives	Implementation Strategies	Time Frame
Encourage a diverse workforce.	Establish partnerships with local and regional businesses and associations that equip employees.	Ongoing
	Encourage training and educational programs that provide continuous vocational and enrichment opportunities for County small business owners.	Ongoing
	Encourage cooperation and partnerships between the County's educational institutions.	Ongoing
Goal ED-3: Promote industries that preserve Gloucester's cultural, historical, and natural resources.		
Objectives	Implementation Strategies	Time Frame
Support industries that are culturally and historically significant, such as agriculture, forestry, and water-based occupations.	Encourage commercial recreation, tourism, fisheries, and water- and boating-related industries.	Ongoing
	Revise current ordinances to ensure the continuance of these uses.	Short Term
	Encourage industries that minimize impacts on the natural environment.	Ongoing

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Goal ED-4: Promote quality commercial and industrial development and redevelopment within the community.		
Objectives	Implementation Strategies	Time Frame
Minimize conflicts resulting from commercial and industrial development.	Work to mitigate conflicts between business development adjacent to residential areas during the review process.	Ongoing
Encourage existing businesses to maintain high-quality structural soundness, aesthetic appearance, circulation systems, and accessibility.	Encourage Universal Design within development and redevelopment projects to increase accessibility for all users.	Ongoing
Encourage all businesses to provide necessary accommodations for the disabled and elderly.	Maintain consistency with the Americans with Disabilities Act in development and redevelopment projects.	Ongoing
	Encourage Universal Design within development and redevelopment projects to increase accessibility for all users.	Ongoing
Goal ED-5: Promote economic development in appropriate and suitable areas.		
Objectives	Implementation Strategies	Time Frame
Identify appropriate sites for retail, commercial, and industrial development based on topography, geology, accessibility, infrastructure, and proximity to complementary uses.	Consider location and design of commercial and industrial development in plans for transportation and other infrastructure improvements.	Ongoing
	Ensure that land access and utility provisions are adequate for commercial development and are suitable for other land uses.	Ongoing
	Develop and implement a plan for the County's waterfronts that promotes various uses, including residential, recreational, commercial, and industrial in appropriate areas and addresses use conflicts.	Short Term
	Identify areas with unique economic development potential and encourage similar land uses on adjacent land when possible.	Ongoing
	Encourage utilization of existing and vacant buildings for economic development.	Ongoing



*River Club at Twin Island, Gloucester, VA -
Source: Gloucester Planning and Zoning*

CHAPTER 4

Housing

Housing location and type influences transportation, services, employment, and the local economy while neighborhoods that provide quality housing promote civic pride.

Comprehensive planning and the corresponding implementation efforts guide the amount, type, and quality of housing, which furthers Gloucester's primary housing goal to provide safe, adequate, and affordable housing for all County residents.

The Housing chapter aims to assess the County's existing housing stock by reviewing current demographics and housing supply and identifying housing needs. It further sets a framework to address current and future housing needs and provide guidelines to protect and enhance the quality of life throughout Gloucester.

Housing Inventory

Overview

The 2010 U.S. Census estimates 15,852 existing housing units within the County, resulting in an average density of 73 units per square mile, with 11,463 units being owner-occupied, 2,830 renter-occupied, and 1,559 vacant, as shown in Table H-1.

From 1990 to 2000, owner and renter occupied units increased by 21.0% and 14.3%, respectively, while vacant units decreased by 7.9%. Increases in owner-occupied units (7.3%), renter-occupied units (15.7%), and vacant units (14%) also occurred between 2000 and 2010 and increases occurred for owner-occupied units (29.9%), renter-occupied units (32.2%), and vacant units (5%) over the 20-year period. Overall occupied units have increased, likely resulting from migration into the County.

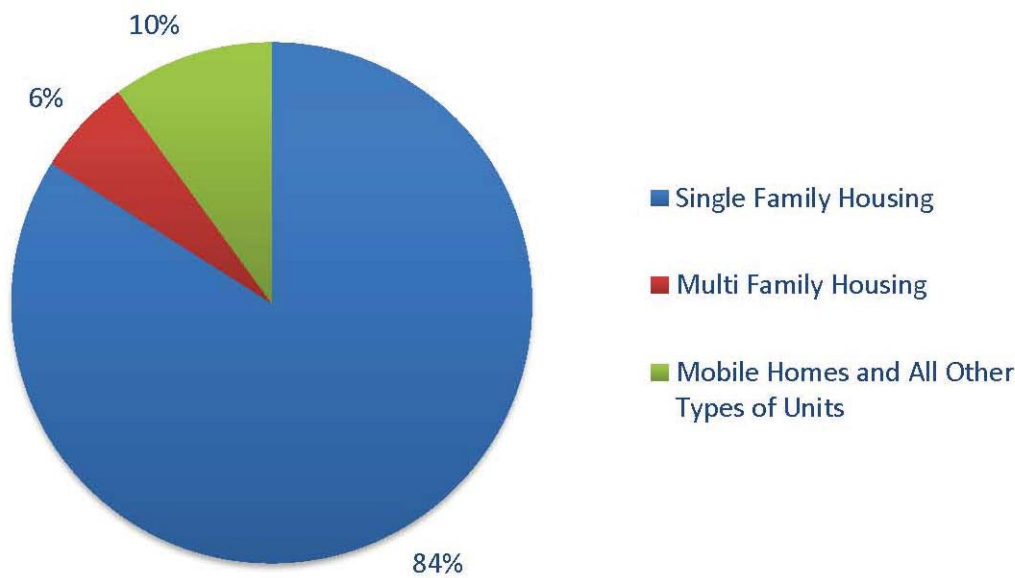
Housing Type

Gloucester’s housing types include single-family and multifamily housing as well as manufactured housing, with Figure H-1 illustrating the current percentage share for each housing type and Table H-2 providing a 20-year comparison. Roughly 84% of Gloucester’s housing is single-family (including modular homes), whereas multi-family housing (including duplexes or two-family homes) represents 6% of the housing units and manufactured housing (commonly known as mobile homes) comprising

10% of the County’s housing stock. Since 1998, new mobile homes are allowed only within mobile home parks and agriculturally zoned districts and American Community Survey data¹ shows a decline in existing mobile homes since 1990.

1 The American Community Survey (ACS) produces annual and multi-year estimates of population and housing characteristics along with data for small areas, including tracts and population subgroups.

Figure H-1: Comparison of Occupancy Status



Source: American Community Survey Data

Table H-1: Comparison of Occupancy Status

	1990	1990-2000 Percent Change	2000	2000-2010 Percent Change	2010	1990-2010 Percent Change
Total Units	12,451	16.4%	14,494	9.4%	15,852	27.3%
Owner Occupied	8,825	21.0%	10,681	7.3%	11,463	29.9%
Renter Occupied	2,140	14.3%	2,446	15.7%	2,830	32.2%
Vacant Units	1,485	-7.9%	1,367	14.0%	1,559	5.0%

Source: U.S. Census Data

Table H-2: Comparison of Housing Types

	1990	1990 (%)	2000	2000 (%)	2009-2011	2010-2012 (%)	2011-2013	2011-2013 (%)
Single Family Housing	8,261	75%	10,252	78%	13,451	85%	13,348	84%
Multi-Family Housing	581	8%	1,017	8%	809	5%	955	6%
Mobile Homes and All Other Types of Units	1,854	17%	1,858	14%	1,586	10%	1,639	10%

Note: Table H-2 includes both U.S. Census 100% decennial data (1990 & 2000) and American Community Survey (ACS) sample 3-year estimate data.

Source: U.S. Census, American Community Survey Data

Housing Location

Of the eight (8) County Census Tracts, most of the housing stock (20.2%) is located in Tract 1001, which has the second lowest population density (87 persons per square mile). Census tract 1004 has the lowest housing stock and population density, with 4.3% of the County's housing stock and a population density of 58 persons per square mile, and Census Tract 1003.01 is the most populated tract, with a population density of 1,390 persons per square mile. Table H-3 details the County's housing stock and Map H-1 illustrates the population density.

Age and Quality

Housing age may indicate housing quality as quality declines over time unless repairs and renovations occur. The majority of the County's housing stock is under 40 years old and over 60% has been constructed since 1980, compared to only 11% constructed before 1950, as shown in Table H-4. Much of the local housing stock was constructed according to national standards (since replaced by international standards), established in the 1960's, and only 1% of Gloucester's housing stock lacks complete plumbing or kitchen facilities.

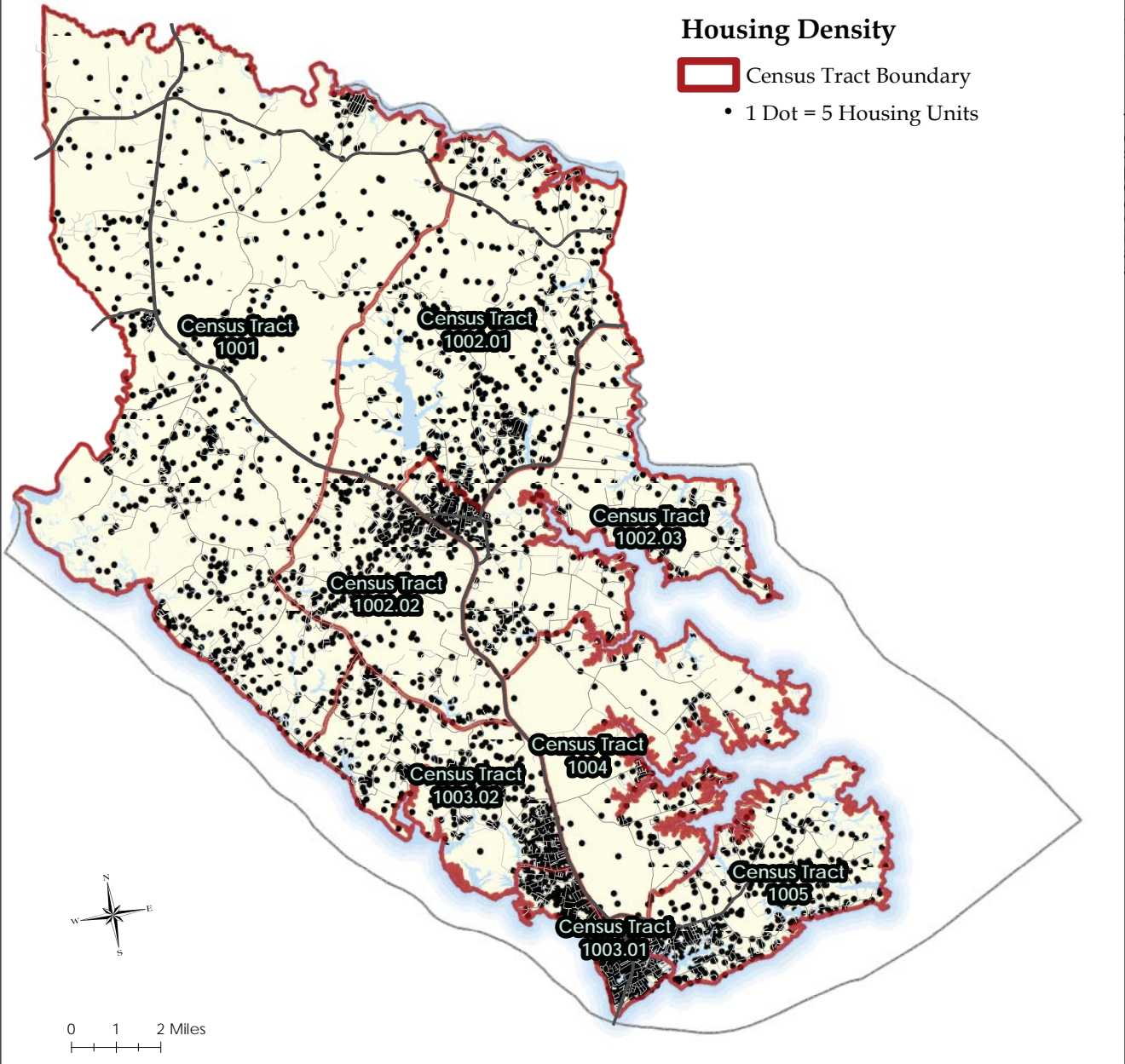
Table H-3: Housing by Census Tract (1990-2010)

Census Tract		1990		2000		2010	
1990 & 2000	2010	Number	Percentage	Number	Percentage	Number	Percentage
1001	1001	2,208	17.7%	2,717	18.7%	3,209	20.2%
1002	1002.01	3,864	31.0%	4,777	33.0%	2,273	14.3%
	1002.02					1,498	9.4%
	1002.03					1,809	11.4%
1003	1003.01	3,918	31.5%	4,510	31.1%	2,580	16.3%
	1003.02					2,016	12.7%
1004	1004	780	6.3%	736	5.1%	680	4.3%
1005	1005	1,681	13.5%	1,754	12.1%	1,787	11.3%
Total County		12,451		14,494		15,852	

Note: Census tract boundaries change over time. As a result, two (2) tracts from 1990 and 2000 were split for the 2010 Census

Source: U.S. Census Bureau Data

Map H-1: Housing Density



Data Source: U.S. Census Bureau

The location, type, and density of development directly impacts a community’s quality of life, environmental conditions, the need for services, and many other aspects. Identifying changes in development patterns and trends assist localities in evaluating current and future community needs. Residential development within the County is concentrated primarily in and around Gloucester Court House and Gloucester Point/Hayes in proximity to existing services. Future growth is encouraged within and between these areas with lower densities and less intensive and more traditional uses of land supported in other areas of the County.

Housing density is discussed on pages 45-49.

On average, houses within the County are larger than those in other jurisdictions, averaging 6.1 rooms per housing unit, slightly higher than the 5.9 rooms per housing unit average for Hampton Roads and Virginia. Typically, a larger house will be located on a more sizable lot, indicating that lots within Gloucester are, on average, also larger than other jurisdictions.

Local residential densities, measured in homes per acre, are also relatively low, a characteristic common throughout the Middle Peninsula. Gloucester's minimum lot sizes for conventional subdivisions within residential zoning districts, as set forth in the 2015 Zoning Ordinance, range from 10,000 square feet with public water & sewer (2 acres without) in the most populated districts to five (5) acres in rural districts. Higher density and alternative housing options have been identified as a need in Gloucester.



Example of older home in Gloucester County -
Source: Gloucester Planning and Zoning

Table H-4: Housing Age and Quality (1990-2013)

	1990		2000		2011-2013 (ACS Data)	
	Housing Units	Percentage of Total	Housing Units	Percentage of Total	Housing Units	Percentage of Total
Built 2010 or later	N/A		N/A		196	1%
Built 2000 to 2009	N/A		1,531	11%	3,140	20%
Built 1990 to 1999	405	3%	1,424	10%	1,959	12%
Built 1980 to 1989	4,871	39%	4,212	29%	4,522	28%
Built 1970 to 1979	2,675	21%	3,054	21%	2,713	17%
Built 1960 to 1969	1,483	12%	1,324	9%	891	6%
Built 1950 to 1959	811	7%	1,060	7%	782	5%
Built 1940 to 1949	650	5%	591	4%	314	2%
Built 1939 or earlier	1,556	13%	1,298	9%	1,421	9%
Total	12,451		14,494		15,942	
Completed Plumbing Facilities	99%		99%		99%	
Lacking Complete Plumbing Facilities	1%		1%		1%	
Completed Kitchen Facilities	98%		99%		99%	
Lacking Complete Kitchen Facilities	2%		1%		1%	

Note: Table H-4 includes both U.S. Census decennial data (1990 & 2000) and American Community Survey (ACS) sample 3-year estimate data.

Source: U.S. Census, American Community Survey Data

Housing Occupancy and Tenure

Housing Occupancy and Tenure, as detailed in Table H-5, describes the amount of occupied (non-vacant) housing units and the type of occupant (owner or renter). Although 90% of the County's housing stock is occupied, the 10% vacancy rate is slightly higher than the 9% state average and roughly 80% of local occupied housing is owner-occupied, with 20% rented.

Table H-5: Housing Occupancy and Tenure

Total Housing Units	15,852
Occupied Housing Units	14,293 (90%)
Owner-Occupied Housing Units	11,463 (80%)
Renter-Occupied Housing Units	2,830 (20%)
Vacant Housing Units	1,559 (10%)
Homeowner Vacancy Rate	1.9%
Rental Vacancy Rate	6.1%
Average Household Size of Owner-Occupied Units	2.59
Average Household Size of Renter-Occupied Units	2.4

Source: 2010 U.S. Census

Special Needs Population

Persons with special needs include the frail elderly, persons with disabilities, mental illness, substance abuse or addiction, HIV/AIDS, and homeless families or individuals. Although Census data estimates the number of special needs individuals, it is difficult to determine how many have housing needs and, as many have very low incomes, their needs may have been accounted for within low income household estimates.

Persons with Disabilities

The Middle Peninsula/Northern Neck Community Services Board (CSB) assists mentally ill and mentally disabled clients with housing services throughout a 10-county region. Lack of affordable housing units is a limiting factor in client release from the Eastern State Hospital. A 60-bed adult living facility in Gloucester Court House provides daily case management for elderly, mentally disabled clients referred by the CSB. Gloucester permits group homes serving up to eight



Source: Riverside Health System

(8) physically or mentally disabled residents in all zoning districts which allow for single family homes. Group homes with more than eight (8) residents are permitted by right in the multifamily zoning district and as a special exception in residential and agricultural zoning districts.

Community Service Board clients may also qualify for the Belroi Home, a transitional housing facility in Gloucester that independently houses up to four (4) individuals with mental illness and controlled substance addiction. Gloucester permits transitional homes serving up to eight (8) residents as a conditional use in some zoning districts and transitional community facilities serving between eight (8) and fifty (50) residents as a conditional use in some business zoning districts. Local and regional housing options for residents with illegal or controlled substance addictions are limited due to a lack of transitional homes and community facilities.

Elderly and Frail Elderly

The elderly have special housing needs, which limit the available housing options. In most cases, the homes they raised their families in are too large, costly, and difficult to maintain, or lack necessary safety and convenience items. Houses with stairways or high cupboards or residences located far from shopping opportunities often become unsuitable as people age and struggle to perform daily activities. Although a home still provides security for the elderly, it is often economically unfeasible for them to remain in their house without assistance or costly renovations. However, it may also be difficult to find suitable alternatives.

Gloucester's 2007 Housing Needs Assessment estimated 780 frail elderly requiring supportive services with the County. In 2010, Bay Aging established the Service Coordination Program at Daffodil Gardens (among other regional elderly apartment properties), where a designated service coordinator provides community-based support services for residents on a weekly basis, which often prevents the need for an alternative living situation (assisted living or a nursing home). Other services provided to Daffodil

Gardens residents include demand response public transportation (Bay Transit), Meals on Wheels, and additional programming through the Active Lifestyle Center, Adult Day Break, Home Care, and Options Counseling. However, Daffodil Gardens currently has a waiting list for new residents and Bay Aging hopes to expand these services if funding becomes available.

Homeless Families and Individuals

Gloucester, in conjunction with 11 other counties, participates in the annual "Point in Time" Survey through the U.S. Department of Housing and Urban Development (HUD), which estimates the number of homeless families and individuals in each locality. Although the January 2015 count found 12 homeless individuals living within Gloucester, the local homeless population may be higher since homeless families and individuals often double-up with relatives and friends when limited affordable housing is available, a temporary solution that may result in periods of homelessness.

In 2014, the Gloucester Resource Council, in partnership with various community groups and faith-based organizations, established the Gloucester United Emergency Shelter Team (GUEST), a collaborative



Homeless camp in Gloucester - Source: Northern Neck Middle Peninsula Housing Coalition "Point in Time" presentation to the Board of Supervisors on 4/17/18

effort to provide homeless sheltering during winter months that includes overnight living arrangements, daily meals, and transportation with shelters hosted by local nonprofit and faith-based organizations. In 2015, this group also opened an adult day program to assist the homeless in finding jobs and housing and provide a place to shower and receive other assistance.

Section 8 Housing Choice Voucher Program

Bag Aging administers the County's Section 8 Housing Choice Voucher Program, eligible for single-family homes, townhomes, apartments, and mobile homes. As of June 2015, 70 leased vouchers were in use in Gloucester, but qualified applicants may have an extended waiting period prior to finding eligible housing.

Inventory of Supportive Housing for Persons with Special Needs

Several supportive housing facilities for persons with special needs (those with physical and mental disabilities, the elderly, and the homeless) are located within the County, as shown in Table H-6.

Housing Cost & Affordability Analysis

Housing Cost and Value

Housing cost (measured by total value) in Gloucester is increasing according to the current value of an individual's home and actual sales data. The 2011-2013 American Community Survey lists the median value for a single-family unit as \$225,000, as shown in Table H-7. Income increases generally have not kept pace with increased housing cost, presenting an extra challenge for those seeking adequate housing.

Gloucester County Assessors Median Home Sale Price

The County Assessor reports the 2014 median and mean sale price within the County as \$181,500 and \$206,397, respectively. Between 2000 and 2014, both median and mean sales prices increased along with a real estate market increase.

Table H-6: Inventory of Supportive Housing for Persons with Special Needs

Facility Name	Type of Facility	Location of Facility
Village Green Apartments	Low Income Housing	Gloucester Court House, VA
Daffodil Gardens	Income Restricted Elderly Housing	Gloucester Court House, VA
Cary Avenue Adult Home	Elderly and Disabled Person Housing	Gloucester Court House, VA
Gloucester House	Elderly Housing	Gloucester Court House, VA
Frances Sanders Nursing Home	Elderly Housing	Gloucester County, VA
Belroi Home	Disabled Transitional Housing	Gloucester Court House, VA
Laurel Shelter	Domestic Violence and Transitional Housing	Gloucester County, VA
Salvation Army	Homeless and Transitional Housing	Gloucester County, VA
Woodland Pointe Apartments	Disabled Low Income Housing	Gloucester Court House, VA

Source: Middle Peninsula-Northern Neck Community Services Board

Affordability

The U.S. Department of Housing and Urban Development (HUD) establishes “affordable” housing costs (including home mortgage or rent payments and all other anticipated payments directly associated with housing) as no more than 30% of a household’s (owner or renter) gross annual income. Since the 2011-2013 American Community Survey lists Gloucester’s median household income as \$59,134, monthly housing costs for a family with this income should not exceed \$1,478, as noted in Table H-9. Households paying more than what is “affordable” may sacrifice other basic necessities, such as food, clothing, and health care, and have trouble with routine household maintenance, which has greater impacts on lower income households who have fewer housing choices.

Home Ownership Affordability

Local affordable housing options have decreased since 2000, with the median home sales price increasing from \$117,000 to \$181,500 and over 60% of closings in 2014 selling for \$150,000 or more. For a family to afford the median home in Gloucester, an annual income of at least \$59,000 is necessary.

The most common job industries, including industries containing teachers, nurses, police officers, clerks,

Table H-7: Housing Value

Range	Units	Percentage
Less than \$50,000	588	5%
\$50,000 to \$99,999	378	3%
\$100,000 to \$149,999	910	8%
\$150,000 to \$199,999	3,083	26%
\$200,000 to \$299,999	4,072	35%
\$300,000 to \$499,999	2,127	18%
\$500,000 to \$999,999	572	5%
\$1,000,000 or more	68	1%
Total	11,798	N/A
Median Value	\$225,000	

Source: U.S. Census, American Community Survey Data



Median priced home for sale - Source: Gloucester Planning and Zoning

and accountants, have salaries too low to afford the County’s median home price, as the median mortgage cost is \$1,471 and 38.9% of owners spend at least 30% of their income on housing.

Rental Housing Affordability

Since 80% of homes are owner-occupied, Gloucester’s rental housing availability is lower than other

Table H-8: Assessors Home Sales

Price Range	Total Sales		
	2000	2010	2014
Less than \$50,000	30	18	56
\$50,000 to \$99,999	77	42	92
\$100,000 to \$149,999	91	69	92
\$150,000 to \$199,999	37	122	133
\$200,000 to \$299,999	16	156	171
\$300,000 to \$499,999	6	44	71
\$500,000 or more	12	12	24
Total	269	463	639
Median Home Price	\$117,000	\$192,000	\$181,500
Mean Home Price	\$158,045	\$212,745	\$206,397

Source: Gloucester County Real Estate Assessment Department (2015)

Table H-9: Housing Affordability by Income

Percent of Median	Household Income	Affordable Monthly Home Payments
180%	\$106,441	\$2,661
150%	\$88,701	\$2,218
120%	\$70,961	\$1,774
100%	\$59,134	\$1,478
80%	\$47,307	\$1,183
50%	\$29,567	\$739
30%	\$17,740	\$444

Source: American Community Survey Data

localities, with the median rent being \$837 and 34% of renters paying at least 30% of their income on rent. Section 8 Vouchers, Village Green Apartments, and Daffodil Gardens Apartments provide the only publicly-subsidized housing within the County and increasing the affordable rental housing stock is a major need.

Gloucester Residents and Service Providers Input

In 2011, Gloucester conducted a survey, distributed to Gloucester Resource Council members to seek housing needs input. Of the 35 responses, 57.1% represented non-profit organizations and housing was the primary function for 16.3%. The results, which are located in the Appendices, offered insight on local service provision, housing needs, and unmet needs.

Planning Issues for the Future

Housing Density

Typical single-family residential developments in the County are approximately three (3) houses per acre, relatively low compared to other areas, and minimum lot sizes for conventional subdivisions in residential and agricultural zoning districts are listed in Table H-10. Future growth will require new, creative housing techniques that increase housing affordability and

Table H-10: Minimum Lot Sizes for Subdivisions

Zoning District	Minimum Lot Size	
	Public Water and Sewer	Private Water and/or Sewage Disposal
C-2 (Bayside Conservation)	5 Acres	5 Acres
RC-1 (Rural Countryside)	5 Acres	5 Acres
RC-2 (Rural Conservation)	5 Acres	5 Acres
SC-1 (Suburban Countryside)	2 Acres	2 Acres
SF-1 (Single Family)	10,000 Sf	2 Acres

Note: Lots created on a private road require a minimum of five (5) acres.

Source: Gloucester County Zoning Ordinance 2015



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density where appropriate while maintaining the local quality of life and rural character.

Housing Alternatives

Gloucester can supplement the existing housing supply through incorporating housing options, such as various housing types, densities, and styles into its ordinances, which can aid in expanding Gloucester's housing stock to include high-quality rental and ownership housing options available to all.

The County has since ceased administrating the VHDA Section 8 Housing Choice Voucher Program, terminated its Administrative Service Agreement with VHDA, ended the Gloucester Housing Department, and dissolved the GHAB. The Gloucester Resource Council is working to address some of these recommendations through their affiliated groups.

Housing Programs

Various federal, state, and regional housing programs are available in addition to those provided by non-profit organizations, churches, and humanitarian groups. Since Gloucester does not currently have a Housing Department, assistance is provided by local and regional agencies and non-profit groups.

Housing Needs Assessment

The County's previous Housing Department administered the Virginia Housing Development Authority's (VHDA) Section 8 Housing Choice Voucher Program for the six (6) Middle Peninsula localities and served as staff to the Gloucester Housing Advisory Board (GHAB). The Housing Needs Assessment and Strategy Study,² promoted by the Resource Council, GHAB, and Housing Department to assess housing conditions and community needs, identify workforce and affordable housing production barriers, prioritize needs, and establish a strategic action plan, was presented to the Board in 2008 and referred to the Comprehensive Plan Steering Committee for incorporation into the Comprehensive Plan. The Planning Commission reviewed the Housing Needs Assessment recommendations and incorporated several, but not all, into the final goals and implementation strategies, found in the Appendices.

² <http://gloucesterva.info/Portals/0/planning/documents/Projects/AffordableHousingNeedsAssessment.pdf>

CHAPTER 4 - HOUSING

H-1: To encourage housing of various types and price levels so as to accommodate current and future County residents.		
Objectives	Implementation Strategies	Time Frame
To encourage the use of existing housing stock through incentivizing renovation and improvement to the minimum standards.	Support Bay Aging, Bay Family Housing, and other non-profit agencies to encourage rehabilitation of existing substandard housing through grants, loans, and other funding options.	Ongoing
Encourage the removal and replacement of vacant or blighted housing where renovation is not feasible though available federal, state, or local programs.	Review and revise Ordinances to encourage redevelopment of existing nonconforming houses within the Development District.	Short Term
	Encourage increased densities in the Village Development Areas (VDAs) for properties on public water and sewer in exchange for traditional neighborhood design performance standards.	Short Term
	Adopt a Traditional Neighborhood Design District (TND) to implement density bonuses and incentives for redevelopment.	Short Term
To consider revisions to the land development and construction codes that reflect new techniques and innovations in order to facilitate housing development, rehabilitation, and construction.	Review Ordinances to determine impediments to innovative techniques and flexibility in design.	Short Term
Establish standards for multifamily, joint use, and mixed density developments to ensure high quality projects in appropriate locations within the county.	Develop and adopt a TND Ordinance for the VDA's where higher densities and mix use development are most appropriate.	Short Term
H-2: Promote the use of safe and livable neighborhood designs in new residential developments, including planned mixed use and density, pedestrian, context sensitive, and transit friendly designs.		
Objectives	Implementation Strategies	Time Frame
Encourage roads, bikeway, and walkways connectivity in new and existing residential and commercial developments to promote an increased sense of community safety while decreasing traffic congestion.	Review and revise the Subdivision Ordinance to provide appropriate context-sensitive standards for new development.	Long Term
	Develop and adopt a TND Ordinance for the VDA's encouraging active transportation alternatives, connectivity, and Transit Oriented Development for future transit opportunities.	Short Term

H-3: Use recommendations of the 2008 Housing Study to explore ways to meet low, moderate, and fixed-income housing needs.		
Objectives	Implementation Strategies	Time Frame
Reinforce neighborhood sustainability through an expanded code enforcement program that adopts and administers a property maintenance code.	Consider the benefits of a property maintenance code compared to the additional staff time and resources required to enforce such a code to determine if the County wishes to pursue this.	Long Term
Increase the amount of land zoned for multi-family housing.	Rezone areas where higher density, multi-family, and mixed use housing would be appropriate as shown on the Future Land Use Plan.	Short Term
	Adopt quality design and development standards for all multi-family housing developments through revised Zoning Ordinances for VDA's and other areas.	Short Term
	In the revised ordinances, increase the allowable density within the multi-family zoning districts on public water and sewer to make redevelopment financially feasible for developers.	Short Term
	Define overall development standards that establish a high quality of development to achieve the type of development specified in the Comprehensive Plan and Village Sub-Area Plans.	Short Term
Provide benefits to developments creating workforce and affordable housing.	Through board policy and code amendments, create a streamlined permitting process, assist in financing infrastructure improvements, and waive local fees.	Long Term
	Adopt local legislation to increase the workforce and affordable housing supply through inclusionary zoning requiring developers set aside a portion of proposed housing units for lower income households.	Long Term
	Designate a department or agency to administer the affordable housing program.	Long Term
Streamline the review and approval process.	Establish a proffer policy and clear guidelines for rezoning expectations, especially those increasing density and having other impacts.	Long Term
	Review current checklists, handbooks, and processes to improve efficiency.	Short Term
	Dedicate appropriate staff time towards permit review.	Long Term

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Route 17 at Fox Mill Center - Source: Gloucester Planning and Zoning

CHAPTER 5

Transportation

Maintaining and improving an efficient transportation network to serve residents, commuters, and visitors is important for Gloucester's future growth and quality of life and collaboration with local, regional, state, and federal partners as well as private stakeholders is necessary to achieve and maintain an adequate transportation system. The current network includes state highways, secondary and subdivision roads, private roads, sidewalks, transit service, and water access that serves three (3) primary functions: to move traffic through the County along major corridors, allow for safe and efficient travel within the County, and promote commerce by providing access to goods and services for residents and visitors.

State code requires Virginia localities to identify "infrastructure needs and recommendations that include the designation of new and expanded transportation facilities and that support the planned development of the territory covered by the plan and shall include, as appropriate, but not be limited to, roadways, bicycle accommodations, pedestrian

accommodations, railways, bridges, waterways, airports, ports, and public transportation facilities. The plan shall recognize and differentiate among a hierarchy of roads such as expressways, arterials, and collectors. In developing the plan, the locality shall take into consideration how to align transportation infrastructure and facilities with affordable, accessible housing and community services that are located within the territory in order to facilitate community integration of the elderly and persons with disabilities."¹

Existing Conditions and Trends

Gloucester residents depend on the County's 95 miles of primary roads, 320 miles of secondary roads, and 295 miles of private roads to meet their transportation needs. The Virginia Department of Transportation (VDOT) classifies roads based upon their location and

¹ Code of Virginia § 15.2-2223

CHAPTER 5 - TRANSPORTATION

service character, with functional usage combining mobility, the ability to get from place to place, and accessibility, connections or access between various land uses. Roads are categorized as urban or rural based upon population and further divided into principal and minor arterials, collectors, and local (secondary) roads, with arterials having the highest mobility but least accessibility, local roads having high accessibility but the least mobility, and collectors falling in between. Gloucester's existing public roadway system includes one (1) principal arterial (U.S. Route 17), four (4) minor arterials (State Routes 3, 14, 33, and 198), numerous major collectors, and a system of secondary roads serving the remainder of the County, as shown on Map TR-1. Route 17 carries a

significant portion of all traffic with limited alternate routes.

In 2013, the highest average traffic volumes in Gloucester, as determined by VDOT, were seen on four (4) segments of Route 17 between the York County line and TC Walker Road and three (3) stretches of road experienced at least 25% traffic volume growth between 2000 and 2013: Route 3 between Ware Neck Road and Main Street, Route 14 between the King and Queen County Line and Route 17, and Route 17 between the northern intersection with Main Street and the southern intersection with Main Street, as listed in Table TR-1.



Principal Arterial, George Washington Highway (Rt. 17) north end of county
Source: Gloucester Planning and Zoning



Minor Arterial, Dutton Road (Route 198)
Source: Gloucester Planning and Zoning

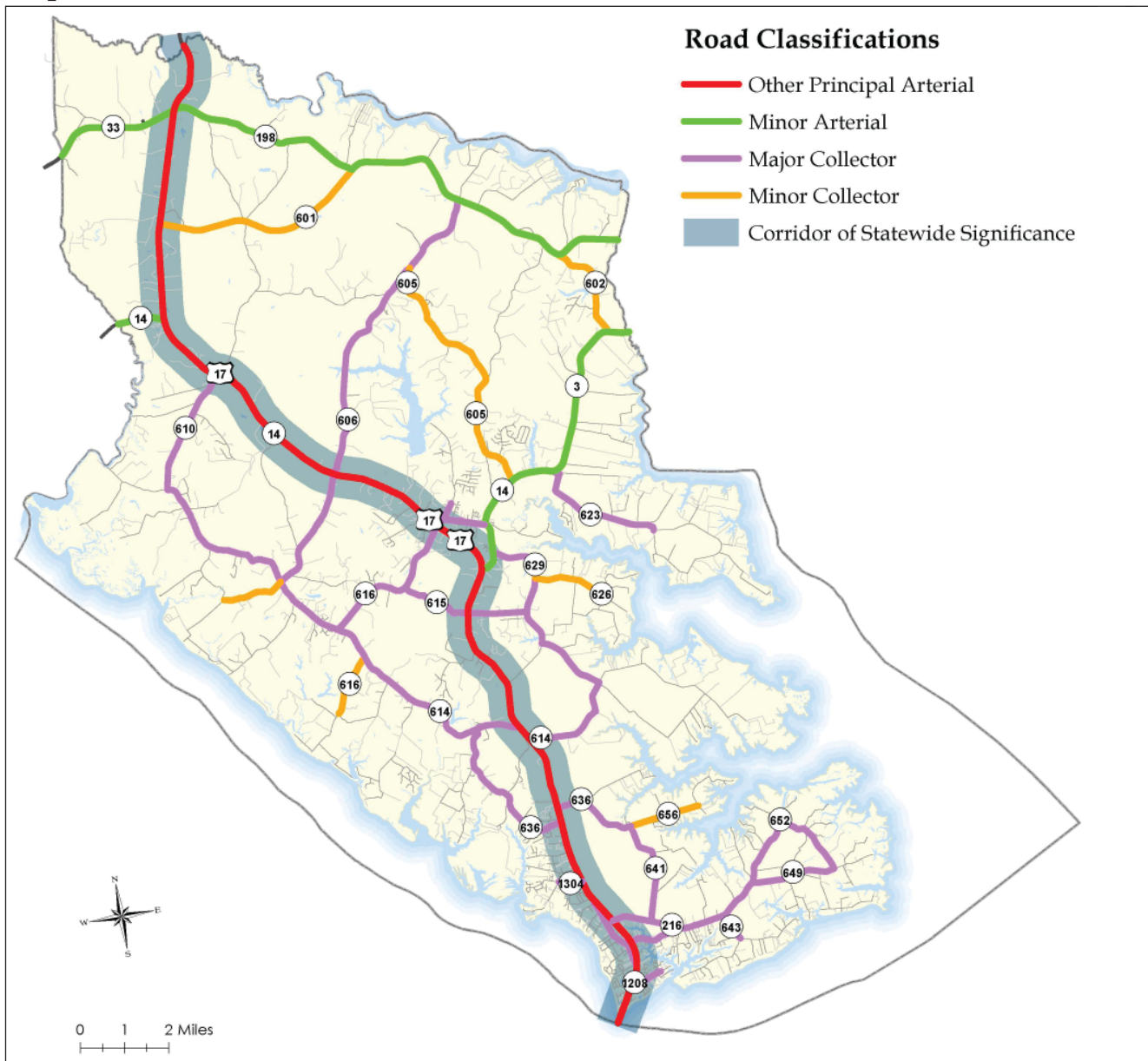


Major Collector - Hickory Fork Road (Route 614)
Source: Gloucester Planning and Zoning



Minor Collector, Indian Road (Route 605)
Source: Gloucester Planning and Zoning

Map TR-1: Road Classifications



Data Source: Virginia Department of Transportation

Gloucester's transportation system consists of roughly 95 miles of primary roads and 320 miles of secondary roads, both maintained by the Virginia Department of Transportation (VDOT). These roads are further categorized based upon their location (urban or rural) and intended level of service: arterials (principal or minor), collectors (major or minor), and local (secondary) roads. Arterial roads have the highest speed limits and most lanes, but few access points, while local roads have many access points, but less lanes and lower speed limits. Additionally, Gloucester has nearly 300 miles of private, named roads serving at least three (3) homes. The County has one (1) principal arterial (U.S. Route 17), four (4) rural minor arterials (State Routes 3, 14, 33, and 198), various collector roads, and many local and private roads. Road classification is discussed on pages 59-60.

Table TR-1: Traffic Counts, 2000-2013

Segment From	Segment To	Weekday Volume				% Change, 2000-2013
		2000	2005	2010	2013	
VA-3 John Clayton Mem. Hwy						
Mathews County Line	SR-623 Ware Neck Rd	12,000	14,000	13,000	13,000	8%
SR-623 Ware Neck Rd	Bus US-17 Main St. Gloucester CH	14,000	19,000	18,000	18,000	29%
VA-14 Adner Rd						
King & Queen County Line	US-17 George Washington Mem. Hwy.	3,100	4,200	4,200	4,100	32%
US-17 George Washington Mem. Hwy						
Middlesex County Line	VA-33/SR-198 Glenns Rd	11,000	13,000	12,000	13,000	18%
VA- 33/198 Glenns Rd	VA-14 Adner Rd	5,900	7,200	6,900	7,000	19%
VA-14 Adner Rd	SR-615 Willis Rd	10,000	12,000	13,000	12,000	20%
SR-615 Willis Rd	SR-606 Ark Rd	12,000	13,000	14,000	13,000	8%
SR-606 Ark Rd	Bus US-17 Main St. North of Gloucester CH	14,000	15,000	17,000	16,000	14%
Bus US-17 Main St. North of Gloucester CH	Bus US-17 Main St. South of Gloucester CH	16,000	18,000	21,000	20,000	25%
Bus US-17 Main St. South of Gloucester CH	SR-628 TC Walker Rd	25,000	30,000	31,000	29,000	16%
SR-628 TC Walker Rd	SR-636 Brays Point Rd. Ordinary	28,000	33,000	35,000	33,000	18%
SR-636 Brays Point Rd. Ordinary	SR-216 Guinea Rd	34,000	37,000	38,000	35,000	3%
SR-216 Guinea Rd	SR-1208 Roper Rd	31,000	35,000	34,000	33,000	6%
SR-1208 Roper Rd	York County Line	28,000	36,000	32,000	33,000	18%
C5US-17 Main St						
US-17 North of Gloucester CH	SR-1007 Cary Ave	9,500	7,800	7,600	6,700	-29%
SR-1007 Cary Ave	VA-3 John Clayton Mem. Hwy	9,300	13,000	11,000	11,000	18%
VA-3/14 John Clayton Mem. Hwy	US-17 South of Gloucester	18,000	23,000	22,000	22,000	22%
VA-33 Lewis Puller Mem. Hwy						
King & Queen County Line	US-17 George Washington Mem. Hwy.	7,300	6,700	6,700	7,700	5%
VA-198 Glenns Rd						
US-17 George Washington Mem. Hwy.	SR-601 Pampa Rd	2,000	2,200	1,900	2,200	10%
VA-198 Dutton Rd						
SR-601 Pampa Rd	SR-606 Harcum Rd	2,000	2,300	2,300	2,400	20%
SR-606 Harcum Rd	Mathews County Line	2,000	2,500	2,100	2,400	20%
VA-216 Guinea Rd						
US-17 Hayes	SR-649 Achilles	8,200	9,400	8,700	8,300	1%

Note: Weekday Volume is measured in Annual Average Weekday Traffic

Sources: Virginia Department of Transportation



Abby Gale Lane - Gloucester County Private Road - Source: Gloucester Planning and Zoning

Private Roads

Many residential areas are served by private roads and lack of maintenance and enforceable upkeep provisions causes some of these roads to fall into poor condition, posing risks to residents and hindering emergency access, deliveries, and other essential services. New private road development is currently limited by subdivision ordinance requirements and the zoning ordinance mandates an association or other entity be responsible for private road and common area maintenance.

Use of public funds for private road upgrades to be accepted into the state system is at the discretion of the governing body, but funding is limited and some roads are not eligible as right-of-way dedication may not be feasible or desired by private road owners. Educational materials for property owners, including information

on private road maintenance and establishing road maintenance agreements, would benefit and inform property owners served by private roads.

Commuting Patterns

An estimated 58.1% of County residents commute to work outside the County, as shown in Table TR-2,² with 83.3% of residents driving alone to work, 11.2% carpooling, 3% working from home, and 2.6% taking public transportation, walking, or using other means. Between 2000 and 2013, commuters increased by 5.8%, with out-commuters growing by 3%, commuters driving alone rising by 4%, and carpoolers declining by 2.8%.

² The ACS defines commuters as workers who take some form of transportation to get to work; those working from home are not included in this figure.

Table TR-2: Number of Commuters and Destinations, 2000-2013

	Within County	Outside County	Total	Percent Commute Outside County
2000 Decennial Census	6,895	10,057	16,952	59.33%
2009-2013 American Community Survey	7,474	10,363	17,837	58.1%

Sources: U.S. Census, American Community Survey

Level of Service

Level of service (LOS) refers to a roadway's traffic operational condition, measured alphabetically, A-F, with Levels A, B, and C representing uncongested conditions with minimal delays in traffic flow, Level D signifying unstable flow with substantial drops in operating speed, and Levels E and F characterizing congested conditions with stop-and-go traffic. Peak afternoon traffic flows along major County road segments have acceptable LOS's (ranging from A-C), as shown in Table TR-3 and Map TR-2, although not all road segments have been studied. Hickory Fork Road (Route 614), from Route 17 to Belroi Road (Route 616), was rated a LOS D in 2013, but has since been improved to include a new bridge and road reconstruction.



Park and Ride Facility on Guinea Road - Source: Planning and Zoning Department

Levels of Service

Levels of Service A, B, and C (LOS A-C) represent free flow or uncongested conditions with minimal delays. Most of Gloucester's roadways have received this grade.

Level of Service D is characterized by unstable flow with substantial drops in speed possible. Hickory Fork Road from Belroi Road to U.S. Route 17 is graded as LOS D.

Level of Service F represents congested conditions with stop-and-go traffic. There are currently no roads graded as LOS F with in the County.

Level of Service is shown for the entire road and not by road segment as listed in Table TR-3.

Park and Ride Facilities

Alternative transportation mode provision is important for congestion management along Gloucester's roadways. In addition, this improves residents' quality of life and increases job accessibility locally and regionally. The Middle Peninsula Rideshare is Gloucester's designated Transportation Demand Management Agency and aims to provide ridesharing services to employment centers from Middle Peninsula locations. Traffix, a Transportation Demand Management Agency for Hampton Roads Transit, also serves Gloucester County. These programs provide carpool and vanpool assistance, park-and-ride lots, and Guaranteed Ride programs. Park-and-ride lots in Gloucester are located at the Guinea Road Convenience Center (the intersection of Routes 17 and 216) and Rappahannock Community College's Glenns Campus along Route 33. A potential additional lot to serve central Gloucester County could be located in the Court House area.

Map TR-2: Level of Service



Data Sources: Hampton Roads Transportation Planning Organization, Gloucester County, & Virginia Department of Transportation

Level of Service (LOS) refers to a roadway's traffic operation conditions (capacity and traffic) at the peak afternoon traffic flow. Roads with multiple lanes and/or low traffic volume typically have the highest LOS grade. Roadways with sufficient traffic or capacity (heavily-traveled primary roads and highways) are normally evaluated for their level of service.

Level of Service is discussed on page 64. Alternative transportation is discussed on pages 68-70.

Table TR-3: Level of Service during the Afternoon Peak Travel Period

Belroi Rd			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Hickory Fork Rd	Route 17	A-C	E-F
Guinea Rd			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Route 17	Maryus Rd	A-C	E-F
Hickory Fork Rd			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Route 17	Belroi Rd	D	E-F
Main St (Bus Rte 17)			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Route 17 (South Intersection)	Route 3/14 East	A-C	E-F
Route 3/14			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Route 17 Bus	Cow Creek	A-C	A-C
Cow Creek	Mathews County	A-C	A-C
Route 14			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
King and Queen County	Route 17	A-C	D
Route 17			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
York County line (Coleman Bridge)	Route 216 (Guinea Rd)	A-C	E-F
Route 216 (Guinea Rd)	Route 614 (Hickory Fork Rd)	A-C	E-F
Route 614 (Hickory Fork Rd)	Route 17 Bus South (Main St)	A-C	E-F
Route 17 Bus South (Main St)	Route 17 Bus North (Main St)	A-C	A-C
Route 17 Bus North (Main St)	Route 606 (Ark Rd)	A-C	A-C
Route 606 (Ark Rd)	Route 14	A-C	A-C
Route 14	Routes 33/198	A-C	A-C
Routes 33/198	Middlesex County	A-C	A-C
Route 33			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
King and Queen County	Route 17	A-C	A-C
Route 198			
Segment From	Segment To	2013 PM LOS	Projected 2034 PM LOS
Route 17	Route 601 (Pampa Rd)	A-C	A-C
Route 601 (Pampa Rd)	Route 606 (Harcum Rd)	A-C	A-C
Route 606 (Harcum Rd)	Mathews County	A-C	A-C

Note: Projected 2034 PM LOS is based upon the Hampton Roads Travel Demand Model.

Source: Hampton Roads Transportation Planning Organization

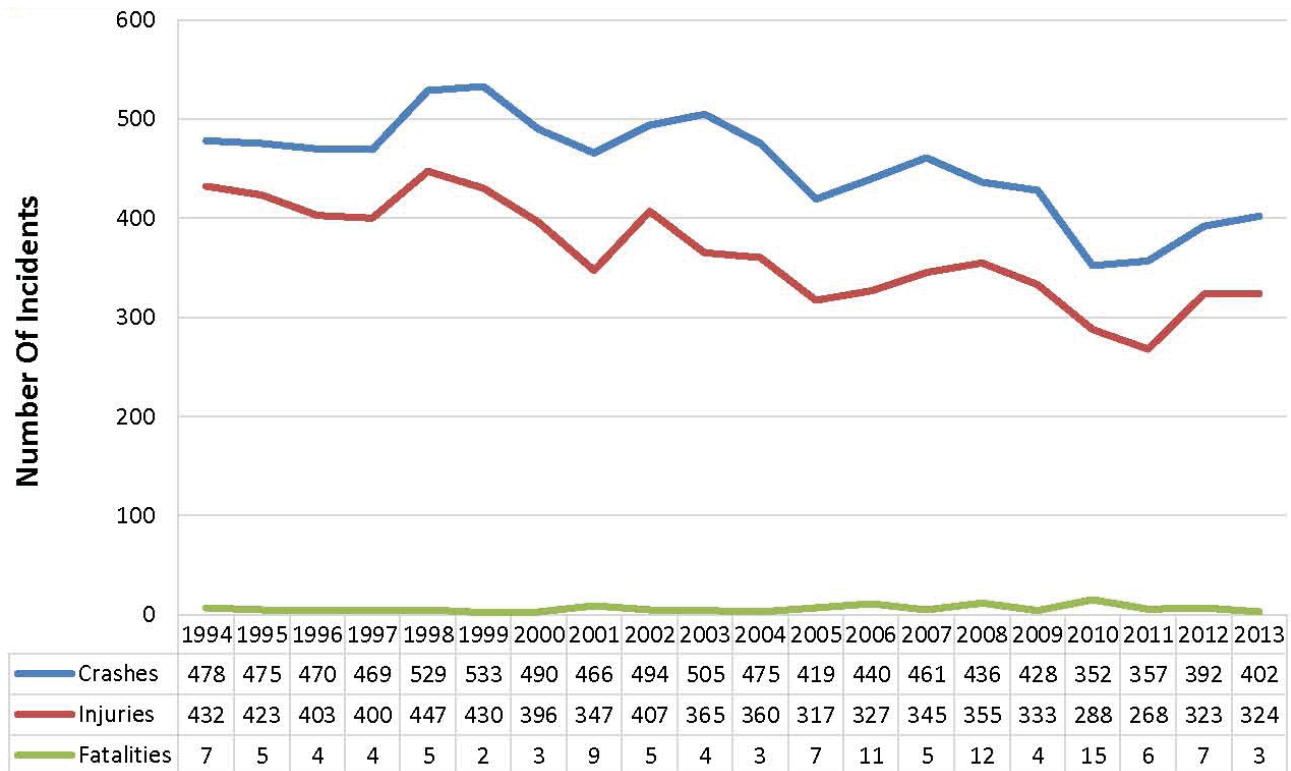
Safety

Local crash data, provided by the Virginia Department of Motor Vehicles (DMV), reports an overall downward trend since 1994, with the highest number of crashes occurring in 1998 and 1999 and spikes in 2003 and 2008. Additionally, crash-related injuries peaked in 1998, but have followed an overall downward trend and fatalities have remained relatively low, averaging six (6) fatalities annually between 1994 and 2013, as illustrated in Figure TR-1. Crashes and injuries commonly occurred along Route 17, the most traveled road.

The Hampton Roads Rural Safety Study, completed in 2006 by the Hampton Roads Planning District Commission (HRPDC), examined rural roadway safety data and trends. This study found that although the highest number of crashes between 1999 and 2004 occurred in Gloucester, the total crashes decreased

by 10.9% during that time, whereas Hampton Roads increased by 8.7%. Additionally, the County saw the second highest amount of vehicle-miles traveled but the second lowest crashes per million vehicles-miles traveled among rural jurisdictions. The study noted that Gloucester had the highest number of injuries and rate of alcohol-related crashes (12%) in 2004, compared to the regional rate of 7.8%. Multiple countermeasures for unsafe road segments were recommended, including increased police enforcement, widened shoulders, rumble strips, and additional distance to trees for Glenns/Dutton Road (Route 198) between Route 17 and Turks Ferry Road (Route 637) and adding shoulders and rumble strips, increasing the distance between trees and the road, and improving roadway marking visibility for Dutton Road (Route 198) between Harcum Road (Route 606) and Burkes Pond Road (Route 602). The County and VDOT should coordinate future maintenance and safety projects to implement these recommendations.

Figure TR-1: Gloucester Crash Data, 1994-2013



Sources: Virginia Department of Motor Vehicles: Virginia Traffic Crash Facts

High Risk Rural Roads

In 2009, VDOT completed a study of high risk rural roads, which included several intersections in Gloucester:

- Route 17 and Davenport Road/Woods Cross Road (Route 610)
- Route 3/14 and Ware Neck Road (Route 623)
- Route 17 and TC Walker Road (Route 628)
- Route 17 and Burleigh Road/Short Lane (Route 615)
- Route 17 and Business 17 South/Main Street

Recommendations included replacing stop bars, adding advanced intersection warning signs, relocating turn lanes, providing signage, installing warning lights, and reducing speed limits. The intersection of Route 17 and Davenport Road/Woods Cross Road (Route 610) meets three (3) of nine (9) signalization warrants (although warrant satisfaction does not mean that a signal will be installed) and, consequentially, a flashing warning signal has been placed on both sides of this intersection to reduce accident risks. Along with intersection improvements associated with the new Page Middle School on TC Walker Road, a traffic signal has been installed at the intersection of Route 17 and TC Walker Road (Route 628).

Alternative Transportation

Bicycle and Pedestrian Facilities

Gloucester County has limited local bicycle and pedestrian infrastructure and facilities. Although sidewalks exist along Main Street in the Court House area, along Route 17 at Gloucester Point, and in certain subdivisions, they are not found as commonly elsewhere. County Code requires sidewalk improvements based upon a development's location, such as within the Highway Corridor Development District, and use, such as commercial uses and some major subdivisions. Limited pedestrian facilities and connections across Route 17 inhibit safe pedestrian

travel to commercial centers and other areas, even over short distances. The County promotes active transportation improvements within the Village Development Areas, residential subdivisions, and where pedestrian connections are desirable and attainable. Pedestrian facilities are not only important safety measures, but also provide alternative transportation, recreation, and exercise options.

Bicycle usage in Gloucester is hindered by a lack of on-road facilities and safety concerns. Beaverdam Park features a 9.5 mile multi-use trail between the Roaring Spring Road and Fary's Mill Road entrances that accommodates horseback riding, mountain biking, hiking, and other activities, but dedicated bike trails are not available within the County.

Active transportation planning, including bicycle and sidewalk facilities, is needed to fully determine existing needs and improvement opportunities. Several completed studies and plans, including the two (2) Village Sub-Area Plans and the Business 17 Corridor Study, have been used for improvement funding to establish active transportation, primarily in the Village Development Areas.



Biker at James Store on Route 3/14 - Source: Gloucester Parks, Recreation & Tourism

Non-Drivers

Non-drivers include those who cannot or do not use automobiles to meet their transportation needs and certain groups, such as children, teens, the elderly, and the disabled, are more likely to be non-drivers. Therefore, it is important to recognize their needs when performing local transportation planning, especially because rural non-driver mobility is often limited by automobile-centric transportation networks, inadequate bicycle and pedestrian facilities, and a lack of transit options. The Non-Driver Opportunity Analysis, published in 2009 by the Hampton Roads Transportation Planning Organization (HRTPO), found that although Gloucester does not have many non-drivers, those present have little access to activity centers, and that the County was a low-mobility area. Gloucester Court House was identified as a higher mobility area, but the amount of non-drivers in the Court House is below average. The highly dispersed local non-driver population provides challenges for solutions like a fixed-route bus service and alternative transportation options. The two (2) Sub-Area Plans include pedestrian and bicycle facility provisions, improved transit options, and increased connectivity, helping to expand non-driver opportunities. Affected groups should be included during transportation planning to ensure that their needs are met and specific steps are outlined, such as promoting walking and biking for school-aged children where appropriate, coordinating federal and state-funded sidewalk improvements with VDOT, and working with Bay Transit to establish additional and expanded fixed-route bus services.

Rail Service

Rail service does not exist within the County, but rail freight and passenger options are available in Newport News and Williamsburg, with the Newport News Marine Terminal providing lines to Chicago and St. Louis and the Norfolk Southern Corporation serving industries in West Point.

Amtrak stations in Williamsburg and Newport News offer passenger rail service to Richmond, Washington, D.C., and the Northeast Corridor. A high-speed

passenger rail service through the existing corridor is planned, although passenger rail directly serving the Middle Peninsula is not included in this expansion.

Air Service

The Newport News-Williamsburg International Airport (PHF), located in Newport News 24 miles south of the Court House, is the closest major commercial airport and offers regular passenger service on two (2) major airlines. Additionally, the Norfolk International Airport (ORF), located roughly 50 miles south of the Court House, offers passenger service on four (4) major airlines, and the Richmond International Airport (RIC), located 53 miles westward in Henrico County, offers regular passenger service on eight (8) major airlines, with air freight service available at both airports.

General aviation services are also available at the Middle Peninsula Regional Airport (FYJ), located 19 miles northwest of the Court House in King and Queen County, which offers a 5,000 foot lighted runway and refueling, among other services, and is the only airport in proximity to Gloucester without requiring a major river crossing. The Middle Peninsula Regional Airport Authority, of which Gloucester is a member, operates this airport.

Bus Service

Intercity bus service, provided by Greyhound Lines, runs through the Virginia (Lower) Peninsula, with stations in Williamsburg and Hampton. Newton's Bus Service, Inc., a private charter service based in Gloucester, provides service to and from Northrop-Grumman Shipbuilding, a major employer of Gloucester residents.

Public Transit

Bay Transit, a non-profit community transit service operating in the County, provides on-demand service and a limited number of fixed routes, including the Courthouse Circulator within Gloucester. Bay

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Transit also offers a weekday service for trips to work, shopping, and healthcare locations.

Other Services

The Middle Peninsula Rideshare is the designated Transportation Demand Management (TDM) agency within the MPPDC region and provides ridesharing services to destinations outside the Middle Peninsula. Gloucester is also served by Traffix, a TDM agency operated by Hampton Roads Transit. Both the Middle Peninsula Rideshare and Traffix provide carpool and vanpool assistance, Guaranteed Ride programs, and service the County's two (2) park-and-ride lots, located at the intersection of Guinea Road (Route 216) and Route 17 and at Rappahannock Community College on Route 33, as shown on Map TR-2.

Water Access

Although water is an extensive component of Gloucester's geography, with 12 marinas and over 100 boat ramps in the County, local public water access is limited, as only 14 public boat ramps exist

and six (6) of these ramps service trailered boats. Shoreline recreational facilities, including marinas and boat ramps, are shown on Map NR-11 in the Natural Resources chapter. A minimum 22-foot deep shipping channel is maintained through the York River to provide upriver access as far north as West Point. Water access contributes to the local economy through marina sales and fees, recreational boating and fishing, transient tourism, and the commercial fishing industry. Additionally, the Virginia Institute of Marine Science (VIMS), a world-class marine research facility, is located at Gloucester Point along the York River.

The Virginia Department of Game and Inland Fisheries (DGIF) provides public boating access in Gloucester at four (4) locations along the Piankatank, Poropotank, Ware, and York Rivers and the County features public beach access at the Gloucester Point Beach Park. Additional beach and boating access information can be found in the Natural Resources and Community Facilities chapters.



Kayakers - Source: Gloucester Parks, Recreation & Tourism

Planned Improvements to the Transportation System

Public road construction and maintenance within Gloucester is conducted by VDOT and private developers. The Virginia Department of Transportation's Six-Year Improvement Program (SYIP) is the Commonwealth's Transportation Board's (CTB) plan for allocating funding over a six (6) year period for projects related to rail, public transportation, commuter assistance, bicycle and pedestrian facilities, and interstate and primary highway transportation systems. Project allocations in the SYIP are determined by the CTB with input from the public and individual localities. Recent SYIP's have included funding for several local projects, including Route 17 access management and bicycle-pedestrian improvements through Congestion Mitigation and Air Quality (CMAQ) funds. Bicycle and pedestrian improvement projects have occurred in the Gloucester Point/Hayes area on Route 17 and others are currently being designed and planned for areas such as Hayes Road (Route 1216) and Guinea Road (Route 216), implementing some

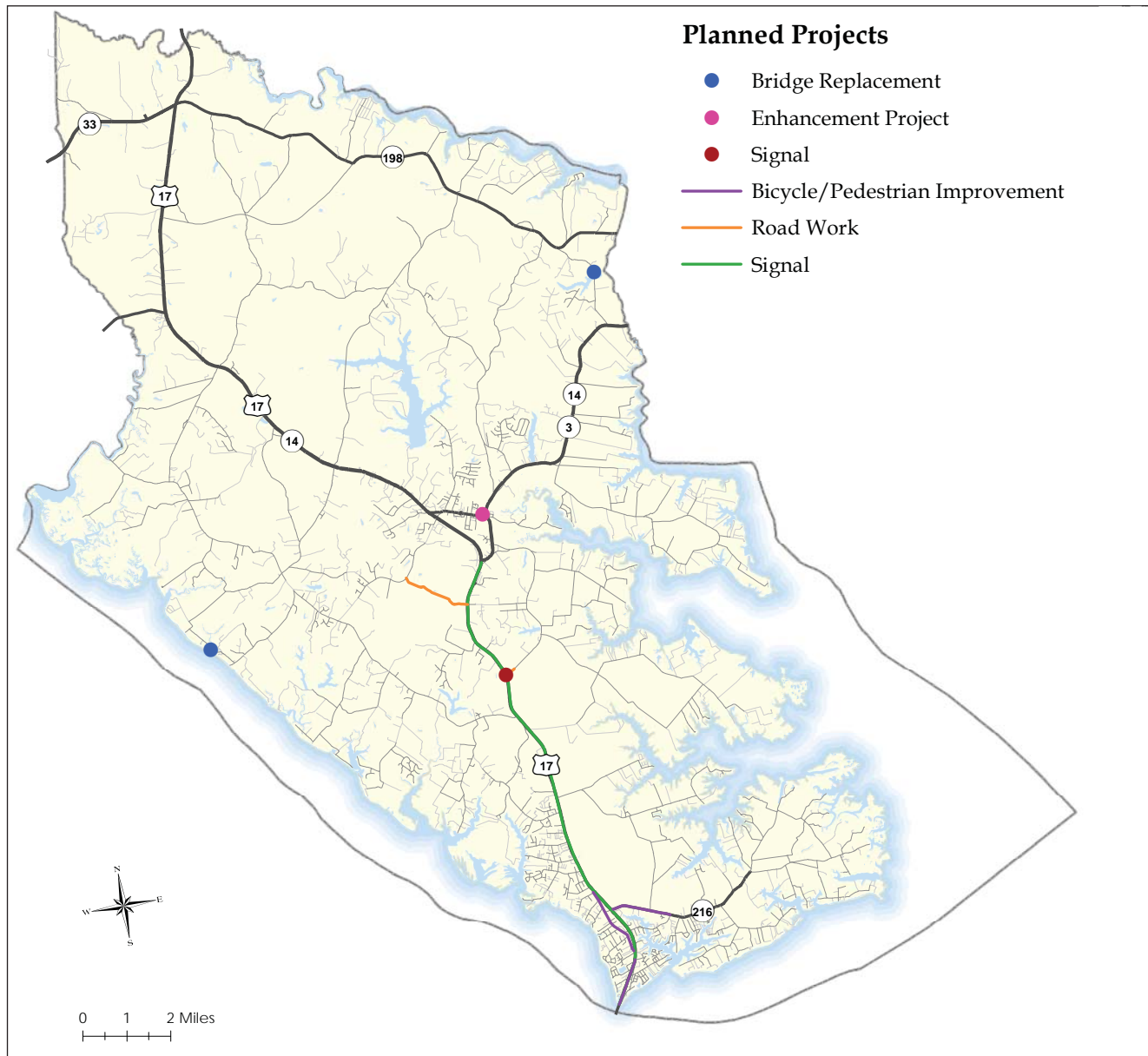
infrastructure recommendations from the Gloucester Point/Hayes Village Development Area Plan. Planned improvements along Roaring Springs Road (Route 616) to link Beaverdam Park to the Court House also furthers long-term planning goals for connectivity. The most recent SYIP includes funding for one (1) enhancement, five (5) primary road, and four (4) secondary road projects in Gloucester, as shown on Map TR-3.³ As preliminary design and engineering is completed and acquisition and construction occurs, their scope may change with adjustments to actual costs and funding allocations. The County coordinates with VDOT and the HRTPO to continually monitor and modify projects to determine the best use for available resources. Based on changes enacted by the General Assembly in 2014 and 2015, some CTB projects are competitively funded according to a screening and scoring process instead of distribution formulas and State regions will be evaluated differently based on local typology. Projects in Gloucester and other Middle Peninsula localities will consider economic

³ The most recently approved SYIP (Fiscal Year 2015- Revised) can be found on the VDOT website at the following link: <http://syip.virginiadot.org/Pages/allProjects.aspx>.



Construction of the Hayes Road Sidewalk - Source: Gloucester Planning and Zoning

Map TR-3: Planned Projects



Data Source: Hampton Roads Transportation Planning Organization, Virginia Department of Transportation, Gloucester County Planning and Zoning Department

Road and transportation improvements are classified by the road system they occur on (primary or secondary) and can identify miscellaneous projects or transportation enhancements. Planned transportation projects are identified by the Virginia Department of Transportation's Six-Year Improvement Program or the Hampton Roads Transportation Planning Organization's Transportation Improvement Program and may change as the project costs and allocations change. In addition, planned secondary roads are shown on proposed subdivisions' development plans.

Planned transportation improvements are discussed on pages 71-75.

development and safety more heavily than traffic congestion, a strong factor for Hampton Roads and Northern Virginia projects,⁴ and funding modification is likely to continue as the CTB evaluates this process.

The Six-Year Improvement Program (SYIP), which focuses on the interstate, primary, rail, and public transit systems, differs from subdivision street and secondary road improvement funding, which is prioritized annually by the Board of Supervisors through the County's Secondary Six-Year Plan (SSYP). Each locality is required by state law to develop and publish the SSYP. The SYIP is entirely administered by VDOT and is, therefore, reviewed and approved by the County with consideration to VDOT's recommendations. Tele-fees collected from private utility use of VDOT's right-of-way have been the only secondary road funding source, leading to limited secondary road improvement options.

Multiple secondary roads included in the SSYP may be eligible for paving through VDOT's Rural Rustic Road Program, which provides funding for unpaved VDOT roads with upgrades occurring within the existing right-of-way. Unlike other secondary road requirements, this program considers each road's rustic nature and the area it serves with vegetation, slopes, and open drainage adjacent to the roadway being preserved where possible. This provision precludes bike and pedestrian access improvements, except for "Share the Road" enhancements.

⁴ More information about the changes to the CTB process for funding the SYIP can be found at: <http://www.virginiahb2.org/about.html>

Virginia Code requires that localities develop transportation plans within their comprehensive plans including maps of planned road and transportation improvements while discussing the local and regional planning district's current and future transportation needs. Transportation plans must be consistent with the Statewide Transportation Plan and Six-Year Improvement Program.

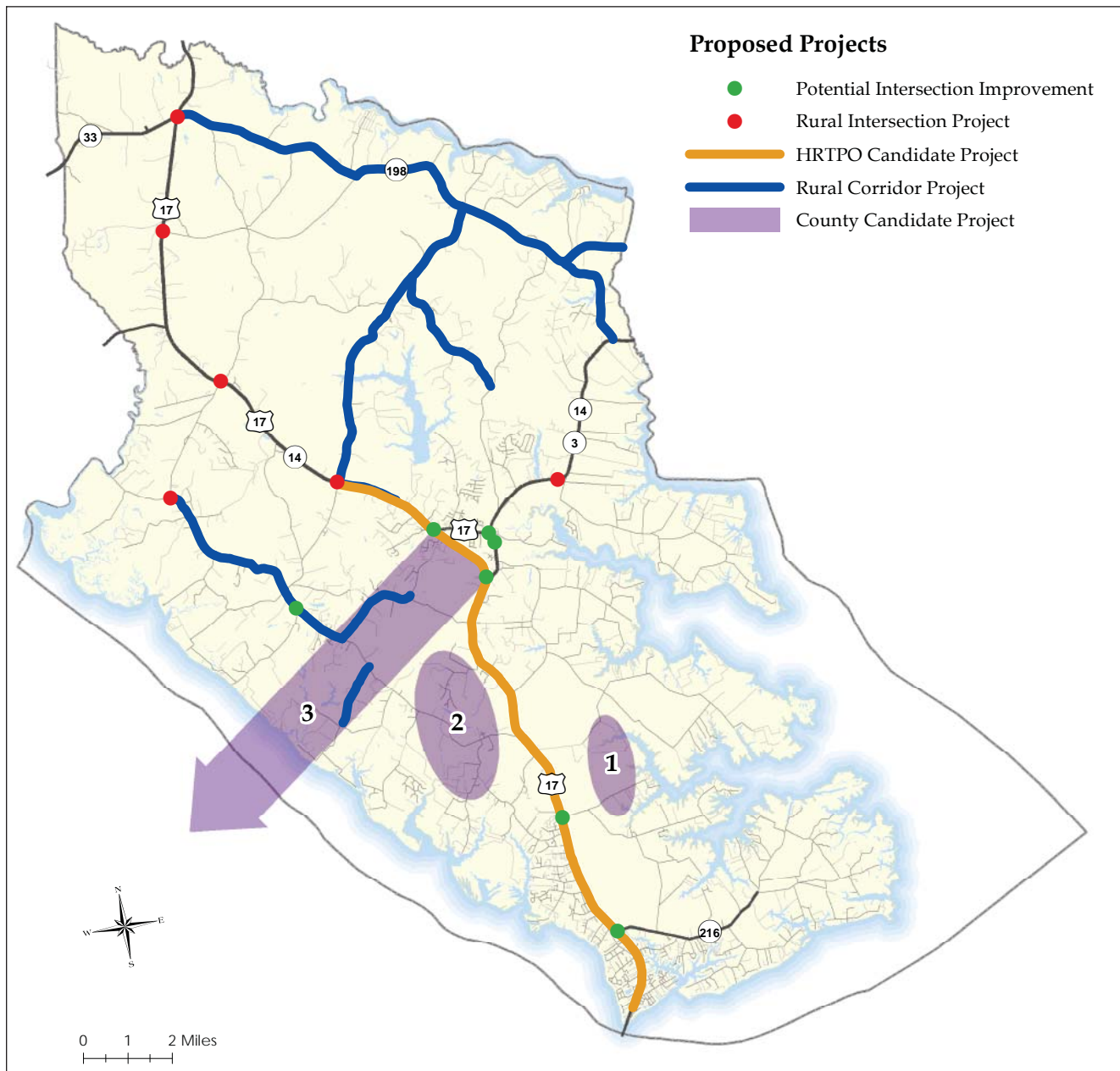
The County has chosen to use 5% of its SSYP allocation to improve certain existing private roads as necessary for their inclusion into the state's secondary road maintenance system through the Rural Additions Program.⁵ County residents can request a road be taken into the state system on a "first come, first serve" basis and an applicant list is maintained, but it can take decades for private road upgrades and acceptance into the state system due to a lack of funding and other requirements as noted above.

In addition to VDOT's improvement programs, Gloucester has explored the need and local desire for Route 17 congestion management projects, with three (3) options considered: Route 17 widening and potential Coleman Bridge expansion to three (3) lanes, connecting existing secondary roads between the Court House and Gloucester Point/Hayes to run parallel to Route 17, and constructing a York River crossing upstream of the Coleman Bridge. Future plans and proposals should consider these options along with updates to previous efforts, both of which require VDOT and HRTPO coordination. The County should consider the community's desire and willingness to proceed with these options by planning and mapping alternative routes and allocating resources for plan implementation.

Smaller projects, such as intersection turn lane improvements, improved alignments, and pedestrian accommodations at key crossings, could further safety, congestion, and accessibility efforts and create economic development opportunities throughout the County. Main Street (Business 17), West Main Street, and Fiddlers Green Road (Route 619) intersection improvements and pedestrian accommodations at Route 17 intersections in the Gloucester Point/Hayes area are examples of these projects. Additionally, continued improvements along Hickory Fork Road (Route 614) and on Route 17 at Brays Point Road (Route 636) would improve safety and provide better accessibility to park and historic sites. Alignment improvements at Cappahosic Road (Route 618) and Hickory Fork Road and an increased turn lane on Route 17 (southbound) at Ark Road (Route 606) would address specific safety issues at these intersections.

⁵ More information on the Rural Additions Program can be found at: <http://www.virginiadot.org/info/faq-2ndaryroads.asp>.

Map TR-4: Proposed Projects



Data Source: Hampton Roads Transportation Planning Organization, Gloucester County Planning and Zoning Department, Middle Peninsula Planning District Commission

Should funding be available, several additional projects within the County have been considered beyond state and regionally-planned projects. Projects may be proposed by County staff or included in regional long-range planning initiatives.

Proposed transportation improvements are discussed on pages 71-75.

Potential and planned projects that address short-term and long-range transportation concerns are shown in Map TR-4.

The Middle Peninsula Planning District Commission prepares a Rural Long-Range Transportation Plan, which includes northern Gloucester County. The plan recommends regional roadway and transportation facilities improvements.

The Hampton Roads Transportation Planning Organization (HRTPO), which includes southern Gloucester County, prepares a Long-Range Transportation Plan. The plan is limited to projects funded by the planning horizon's estimated budget (typically 20 years). Projects with the greatest regional need and impact are prioritized within the plan. County personnel has proposed two (2) potential projects, which together would widen Route 17 to six (6) lanes (shown in orange). The proposal for Route 17 from the southern intersection with Main Street to the Coleman Bridge was selected to be included in the 2040 Long Range Transportation Plan.

Route 17 serves the majority of the County's traffic, with likely increases in demand in the future. County staff has proposed several local alternatives to Route 17 by connecting existing secondary roads east (Candidate Project 1) or west (Candidate Project 2) of this route. A third alternative is an up stream York River crossing (Candidate Project 3). Currently, these alternatives are conceptual and studies for these planned routes have not yet occurred.

Smaller projects such as intersection improvements for turn lanes, better alignment, and pedestrian accommodations at key crossings could improve safety, congestion, and accessibility as well as create opportunities for increased economic development within and outside the designated village areas.

Other Plans and Programs

While most local transportation planning needs are coordinated with VDOT, the County is also a member of the Hampton Roads Transportation Planning Organization (HRTPO). This is the federally-mandated Metropolitan Planning Organization (MPO) for the Hampton Roads Transportation Planning Area and consists of the more densely populated portions of the County, from just north of the Court House to Gloucester Point.

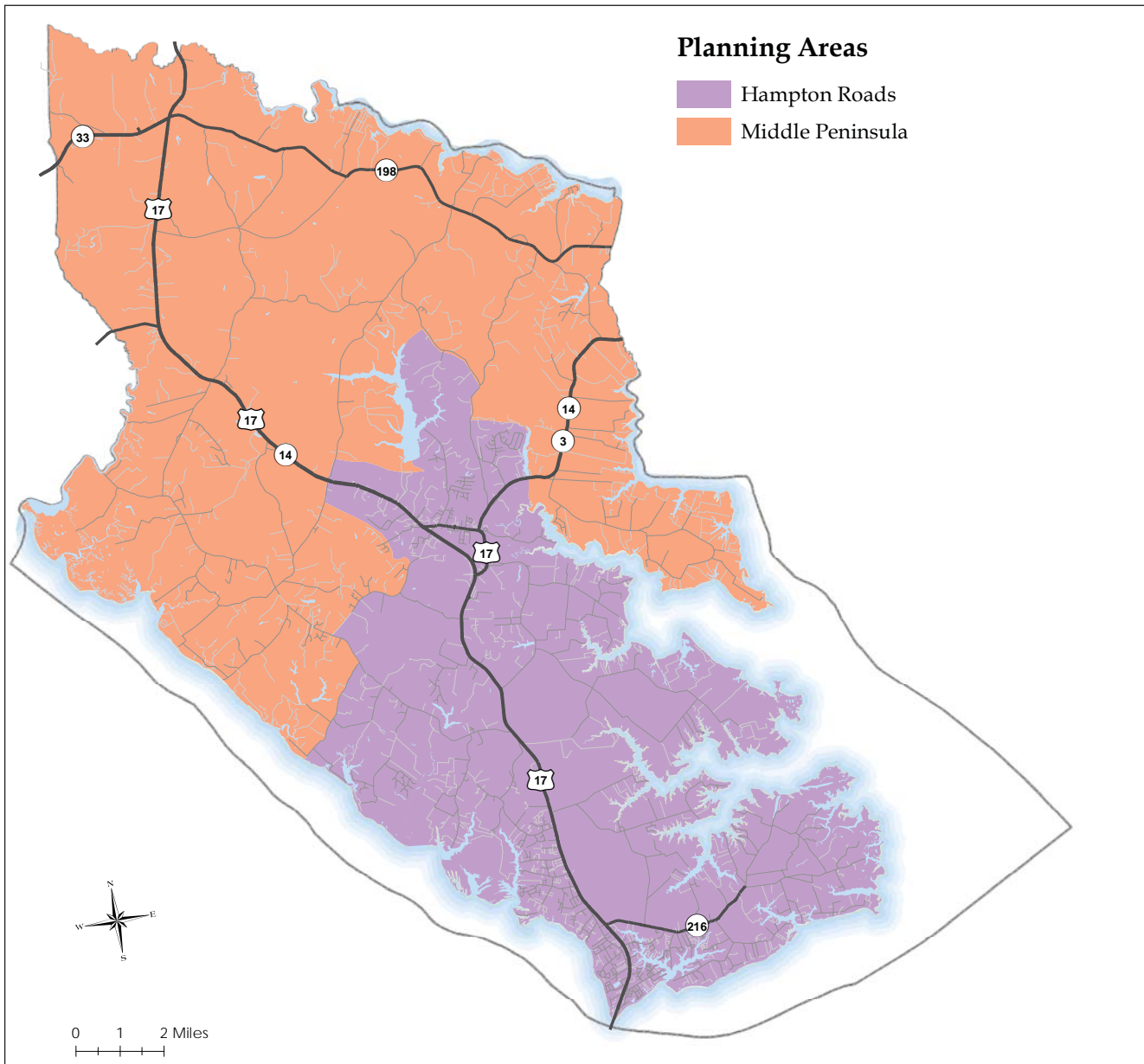
The HRTPO's main functions are to develop the Regional Long-Range Transportation Plan and congestion management plans, establish the region's Transportation Improvement Program, and conduct transportation needs studies. The HRTPO Board, composed of elected officials and local, regional, state, and federal representatives, approves the Long Range Transportation Plan, including planned regional transportation improvements consistent with federal air quality standards and transportation funding financial constraints. The 2040 Long Range Transportation Plan will include a planned Route 17 widening to six (6) lanes from the southern intersection with Main Street to the Coleman Bridge.⁶

Gloucester, north of the Court House, is a member of the Middle Peninsula Planning District Commission (MPPDC), which performs similar functions to the HRTPO for its member localities, including working with localities and VDOT to develop the Regional Long-Range Transportation Plan, recommending roadway and transit improvements to VDOT, and maintaining a transportation demand management program.⁷ The Planning District boundaries are shown on Map TR-5.

⁶ More information on HRTPO can be found on its website: <http://www.hrtpo.org>.

⁷ More information on MPPDC's transportation efforts can be found on its website: <http://www.mppdc.com>.

Map TR-5: Planning Areas



Data Source: Hampton Roads Planning District Commission, Hampton Roads Transportation Planning Organization

Gloucester's transportation planning (road design, construction, and maintenance) is typically conducted by the Virginia Department of Transportation's Fredericksburg District Office. However, some issues and projects impact multiple localities and are discussed by planning district commissions and metropolitan planning organizations. Gloucester is a member of two (2) regional planning districts: the Hampton Roads Transportation Planning Organization (HRTPO) (Gloucester Court House and areas southward) and the Middle Peninsula Planning District Commission (MPPDC) (northward of the Court House).

Planning areas are discussed on page 75.

Challenges and Opportunities

Gloucester faces many transportation challenges as past and current development trends, combined with its geography, have placed strains on the County's major thoroughfares. As growth continues, congestion will increase and, if unaddressed, negatively affect economic development and quality of life. Congestion amplified by commuters and travelers can make local travel more time-consuming and state mandates and increased funding competition for improvements will continue to be a major challenge as the County plans for future growth.

Congestion and Commuter Mobility

Identifying and establishing alternative routes are important goals for reducing congestion and improving mobility as commuters use the limited available routes, primarily Routes 3/14 and 17. The Route 3/14 and Main Street (Business 17) intersection in the Court House area was not designed for large traffic volumes and several studies and plans have looked to address the bottlenecks and other issues created on and around Main Street.⁸

⁸ Gloucester County Business 17 Corridor Planning Study, Gloucester Court House Village Sub-Area Plan

The **HRTPO** develops regional long-range transportation and congestion management plans as well as the region's Transportation Improvement Program and conducts regional and local transportation needs studies. Regionally significant projects occurring in Gloucester and within the HRTPO's planning area undergo the HRTPO Board's discussion and approval processes.

The **MPPDC** develops the rural long-range transportation plan for its planning area, recommending roadway and transit improvements to VDOT and maintains the transportation demand management program.

Other back-ups occur along Route 17, particularly at Gloucester Point/Hayes near the Coleman Bridge. Similar to the Court House, historic sites, surrounding businesses, and geographical conditions limit and factor into the available congestion management solutions. Additional funding for capacity and access management projects, combined with increased alternative transportation options, carpool programs, telecommuting, and alternative work schedules, may provide solutions. Since Route 17 is the primary road for commuters and residents entering, exiting, and traveling through the County for work or other trips, high levels of congestion occur throughout the day. Consequentially, several long-term congestion mitigation solutions may be considered.

In 2000, VDOT completed the York River Crossing Travel Demand Study, which forecasted that, by 2014, the Coleman Bridge would reach four-lane capacity and, by 2033, six-lane capacity. If current demand continues, alternative solutions for Route 17 will be critical to maintain safe and efficient travel throughout the County. Two (2) potential options include creating a parallel road network between the Court House and Gloucester Point/Hayes or constructing an upriver bridge across the York River between Gloucester Point/Hayes and West Point, which would reduce demand on both Route 17 and the Coleman Bridge and directly connect Gloucester and Williamsburg. Both options should be carefully studied by VDOT in coordination with the County as potential transportation and community development projects.

Alternative Transportation

Alternative transportation, such as biking, walking, and transit, can help to alleviate roadway congestion as well as provide other benefits, including air quality and quality of life improvements. The Future Land Use Plan identifies existing and potential Village Development Areas (referred to as Urban Development Areas in state code), which are intended to support safe and convenient active transportation and increased mobility options due to the type, scale, and density of development proposed in these areas.

Bicycle Planning

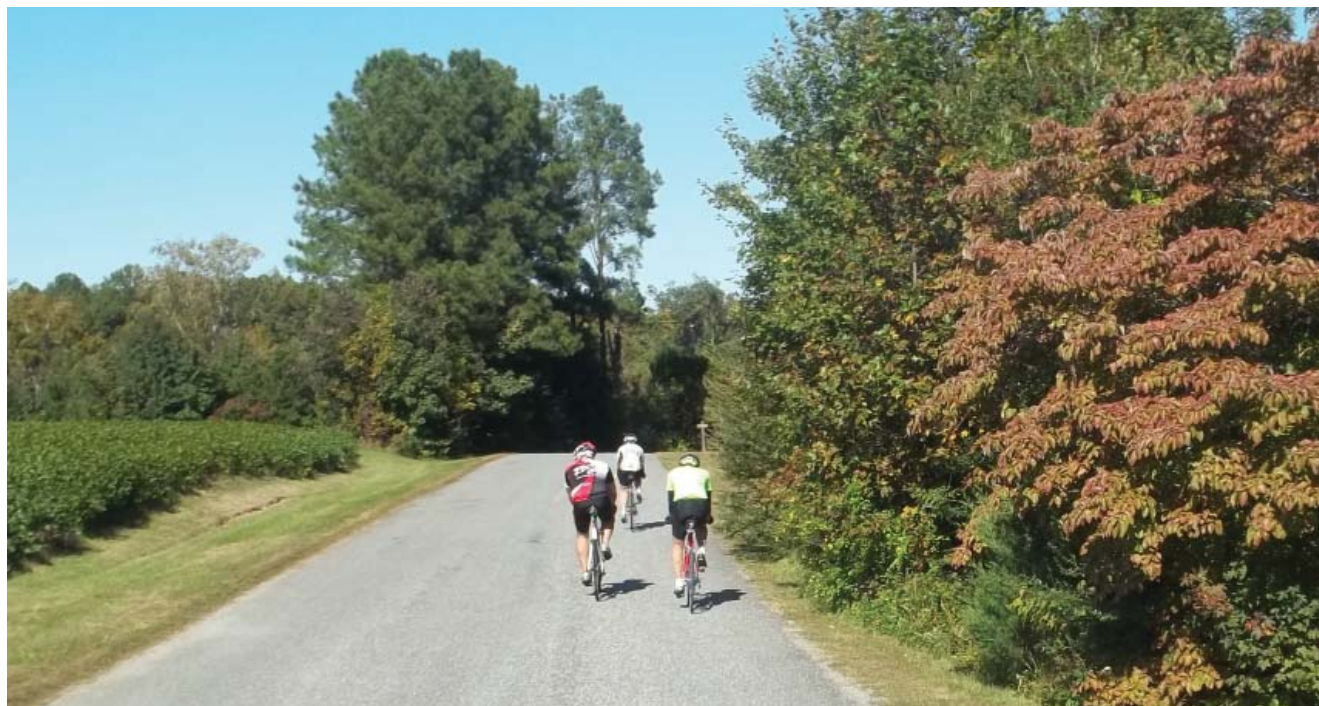
The Pedestrian/Bicycle Path Feasibility Study for the Gloucester County Courthouse and Beaverdam Park Area, was prepared by Buchart-Horn, Inc. in 2002 through a Middle Peninsula Planning District Commission (MPPDC) grant. The study explored potential routes for a multi-use trail between the Court House and Beaverdam Park with consideration to transportation infrastructure, land uses, landmarks, points of interest, natural resources, existing and planned improvements, and noted bicyclist and pedestrian traffic. This study included public input and alternative cost evaluations in the recommended final alignment beginning at the Court House Circle's County Museum near historical and commercial amenities through natural wooded areas and along local roads, while featuring signage, painted shoulders, and pavement markings.

Additional recommendations included Main Street sidewalk extensions to the Riverside Walter Reed Medical Center campus as well as along Roaring Springs Road and bike route indicators on Main

Street. This project was accepted as a CMAQ project, but funding allocations for the entire project have not been provided. Staff will continue to work with VDOT to utilize available funding to fulfill this project.

In 2004, the MPPDC published the Middle Peninsula Regional Bicycle Facility Plan in conjunction with the HRTPO and VDOT to integrate rural regional transportation planning in Gloucester. This plan evaluated bicycle facility needs in northern Gloucester, identified cycling facility deficiencies throughout the Middle Peninsula, and recommended potential routes while considering safety, funding, and ride quality.

Bicycle facility planning should be expanded throughout the County to cover areas not included in these plans and reflect current bicycle usage and routes. As improved connectivity is important for transportation, tourism, and recreational opportunities, continued coordination with VDOT is necessary to ensure that future road construction, maintenance, and improvement projects accommodate bicycles, pedestrians, and other forms of active transportation. Although dedicated



Cyclists participating in the “Ride the Dragon” cycling event through the northern portion of the county.
Source: Gloucester Parks, Recreation & Tourism

sidewalks and/or bikeways provide the greatest safety and separation from vehicular traffic, paved shoulders and/or signage may be appropriate on rural roadways.

Other Opportunities

Existing roads need to be evaluated based upon the necessary improvements and their ability to safely support bicycle traffic and greenways, identified through a green infrastructure planning process, which may provide off-road connections between designated routes. Future planning efforts should consider connections to existing and proposed recreation and tourism sites, such as Beaverdam Park, the Court House area, the planned Middle Peninsula State Park, and Gloucester Point Beach.

Pedestrian and bicycle programs and facilities combined with development standards forming “complete streets” in the Village Development Areas, could create pedestrian-friendly environments in Gloucester Point/Hayes and the Court House while accommodating active transportation throughout the County through signage, traffic calming measures, and physical improvements. These improvements might include:

- Widening shoulders where appropriate
- Posting signage on existing streets
- Planting landscape strips separating pedestrian/bicycle facilities from roadways
- Installing crosswalks and pedestrian signals
- Providing pedestrian refuge medians
- Constructing additional sidewalks
- Introducing traffic controls and turn restrictions in Gloucester Point/Hayes and the Court House
- Creating multi-use trails
- Adding bicycle parking facilities
- Establishing trees and street furnishings, such as street lamps, benches, or plantings

The Hampton Roads Regional Transit Vision Plan, developed by the Virginia Department of Rail and Public Transit, envisions an express bus route connecting Oyster Point to Yorktown, Gloucester Point/Hayes, and the Court House, with potential links to a future light-rail service at an Oyster Point

transit hub. Although express bus service may require sizable park-and-ride facilities, walkable, mixed-used developments may include parking structures with multifamily residential developments sharing park-and-ride facilities, potentially on currently oversized parking areas. The Village Areas may incorporate these and other Transit Oriented Development (TOD) concepts to facilitate the density and parking facilities necessary for additional transit services.

Although dedicated rights-of-way are not required for express bus service, peak hour lanes and high-occupancy vehicle (HOV) lanes typically expedite service times and increase ridership. Additionally, signal priority systems and intersection queue-jump lanes can improve service efficiency, especially through incorporating these systems in congested areas. Future Route 17 roadway improvements should consider these transit options.

State Regulatory Requirements

The Virginia Department of Transportation administers roadway and transportation infrastructure requirements that include access management, secondary street acceptance into the state road network, and Corridors of Statewide Significance designation.⁹ These standards are important for localities where VDOT owns and maintains the public roads and the County should be aware of any state code or regulation changes that govern transportation infrastructure.

Access Management Regulations

Access management focuses on entrance location, spacing and design, street intersections, median openings, and traffic signals to reduce traffic flow disruptions. Since traffic congestion and crashes rise as conflict points increase, improved highway access management can reduce these points and mitigate their impact on highway operation and public safety. As critical public resources, roadway access

⁹ All independent cities, as well as Arlington County and Henrico County, maintain their own roads.

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management helps to maximize this investment. Additionally, access management improves traffic flow by increasing the average speed and allowing efficient traffic flow, maximizing fuel efficiency, reducing air pollution, and shortening commuting times along with providing an expanded market area.¹⁰

Secondary Street Acceptance Requirements

Secondary Street Acceptance Requirements detail the standards and process for accepting new, privately-built roads into the state-maintained road network, such as those constructed in new residential subdivisions. These requirements promote cost-effective public fund expenditure on roadways with connectivity to adjacent developments, pedestrian accommodations, public benefits, and stormwater management features.¹¹

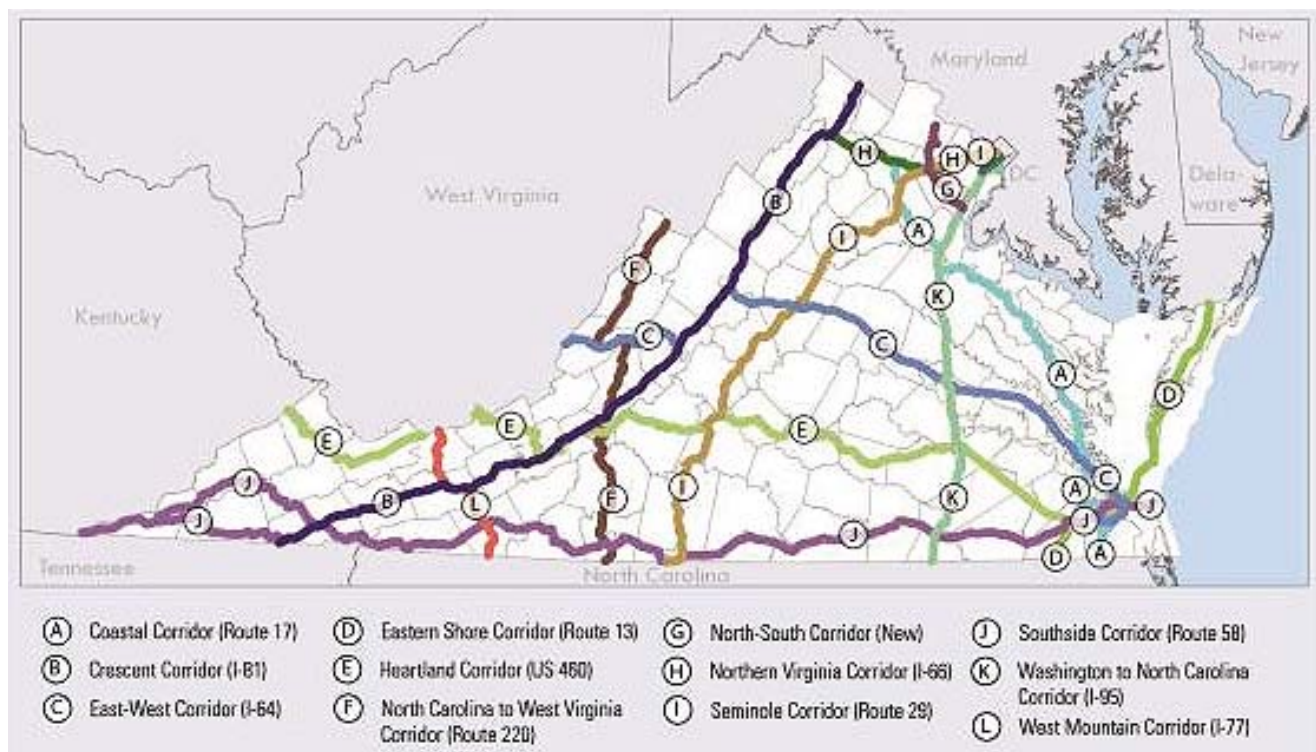
¹⁰ Current information about Virginia's access management requirements can be found on VDOT's website at the following link: http://www.virginiadot.org/info/access_management_regulations_and_standards.asp.

¹¹ The most recent version of the State's SSAR can be found on VDOT's website by using the following link: http://www.virginiadot.org/info/secondary_street_acceptance_requirements.asp.

Corridors of Statewide Significance

In 2009, the General Assembly passed Senate Bill 1398, requiring that Corridors of Statewide Significance be specified by the Commonwealth Transportation Board and incorporated into local comprehensive plans with maps. These roadways are defined as "an integrated, multimodal network of transportation facilities that connect major centers of activity within and through the Commonwealth and promote the movement of people and goods essential to the economic prosperity of the state."¹² Designation is intended to be a tool for guiding local land use planning and transportation investments along major multimodal transportation routes. Each corridor must be multimodal, connect regions, states, and/or activity centers, have a high travel volume, and perform a unique statewide function or address statewide goals. The Commonwealth Transportation Board has identified eleven Corridors of Statewide Significance, including the Coastal Corridor, consisting of Route 17 from

¹² VTrans2035: Virginia's Long-Range Multimodal Transportation Plan



Corridors of Statewide Significance - Source: Virginia State Office of Intermodal Planning and Investment, http://www.vtrans.org/significant_corridors.asp

Winchester southward to the Virginia-North Carolina border, with the portion located in the County shown on Map TR-1. Major Coastal Corridor components include the Ports of Virginia and Richmond, several rail corridors (Norfolk Southern and CSX), and the Norfolk and Newport News airports and this corridor also provides an alternative to I-95 between Hampton Roads and Northern Virginia, establishes a trucking connection between Hampton Roads and I-95, and grants travel and tourism access to the Northern Neck and Middle Peninsula. The Commonwealth's Coastal Corridor improvement strategies include:

- Improving capacity through roadway widening, intersection improvements, or constructing interchanges at strategic locations
- Increasing freight rail capacity from the Port of Virginia and coordinating multimodal freight movement with the Craney Island expansion
- Supporting increased freight capacity by expanding intermodal facilities
- Improving transit in rural areas by broadening existing fixed-route services and offering additional demand response, elderly, and disabled services
- Improving capacity through high-density areas by traffic and access management techniques and utilizing Intelligent Transportation Systems (ITS) technologies
- Improving airport facility ground access along the corridor

These strategies are consistent with several local and regional goals and objectives for Route 17 within Gloucester, the Middle Peninsula, and Hampton Roads.

Linking Transportation and Land Use

Coordinating transportation system and land development planning improves the local quality of development and Gloucester's appeal to residents and employers. The transportation system should connect residents to services and jobs, encourage commerce through efficient access to stores and

businesses, and improve quality of life by offering choices. The County's long-range land use goals strive to maintain rural character while serving suburban areas and concentrating future development where adequate infrastructure and land capacity is available. The areas within and around the Court House and Gloucester Point/Hayes are specifically designated as Village Development Areas in accordance with the Code of Virginia, Section 15.2-2223.1, which encourages transportation system development and improvements, including active transportation and future transit options, to be supported by more intense, village-type development and higher population densities. Additionally, the corridor between these village areas can accommodate additional highway-oriented, employment generating growth. Long-term enhancements in growth centers will preserve the County's rural areas for working lands, recreation, tourism opportunities, and lower-density residential development while improving community facility and natural resource access.

Goals, Objectives, and Implementation Strategies

Local transportation planning and implementation requires collaboration between multiple agencies and partners. While Gloucester contributes to regional transportation planning efforts, the County also works with the VDOT's Fredericksburg District and Saluda Residency offices. Increased private sector transportation planning involvement may create opportunities to accomplish certain projects quicker than traditional funding mechanisms, benefiting both the community and the private sector.

T-1: To guide the development of the County road system into a safe transportation system that facilitates efficient movement of goods and people.

Objectives	Implementation Strategies	Time Frame
Coordinate with the Virginia Department of Transportation (VDOT) to confirm that new or maintenance projects are consistent with the County's existing and future needs.	Continued and regular communication between County staff and VDOT staff in the Fredericksburg District and Saluda Residency to discuss projects and priorities for existing and new funding sources.	Ongoing
Work with the HRTPO, MPPDC, and VDOT on regional planning for transportation and potential partnerships to improve the transportation network on a regional scale.	Provide staff to participate in monthly and quarterly meetings with regional agencies in order to identify available funding and regional partnerships.	Ongoing
Develop long-range transportation plans in coordination with all other development plans, regional transportation plans and transit plans.	Provide staff to participate in regional planning efforts.	Ongoing
Develop corridor plans that provide multi-modal recommendations for portions of Route 17, Business 17, and collector roads based on the functions of each segment and the appropriate design given the context of existing and proposed development and access needs.	Identify specific corridors for individual study in order to achieve the goals and objectives outlined for each area. Study corridors could include Business 17 (completed in 2013), Route 17 in the Development District, Alternative Routes (parallel roads) to Route 17, Greate Road, Hayes Road, Guinea Road, or an upriver crossing corridor.	Long Term
Encourage and implement a "complete streets" program that provides for the needs for all transportation users, including automobile drivers, transit systems, and non-drivers.	For each corridor studied specifically, identify the users and provide recommendations to accommodate all users within that corridor.	Long Term
	Consider all existing and potential users in any road maintenance or construction project.	Short Term
Designate certain roads as greenways to preserve and protect existing rural, historic, scenic, or other important characteristics to preserve existing viewsheds from adverse effects of the transportation system.	Establish greenways with larger setbacks for new construction and to create a Rural Corridors with different requirements than the Highway Corridor Development District for commercial development.	Long Term

T-1 (Continued): To guide the development of the County road system into a safe transportation system that facilitates efficient movement of goods and people.

Objectives	Implementation Strategies	Time Frame
Provide for sufficient right of way width to accommodate drainage and other facilities on public roads to accommodate future levels of use and forms of transportation such as passing lanes, bicycle lanes, and turn lanes.	Consider future levels and types of use for all new and existing roadways serving new development and re-development proposals and obtain the necessary right-of-way, easements or access to provide for needed and proposed infrastructure preferably based on adopted plans.	Ongoing & Long Term
Endeavor to provide all residents safe, and where feasible, multiple access points to and from all neighborhoods.	Use subdivision ordinance and the State's Subdivision Street Acceptance Requirements to create safe streets and multiple connections where possible.	Ongoing & Long Term
Provide for safe access to parcels throughout the County.	Continue to use the rural rustic road program to improve existing substandard state roads.	Short Term
	Continue to use the rural additions program to bring eligible roads private roads into the state system for maintenance.	Long Term
	Educate residents about private roads in the county and their responsibilities for care and maintenance of these roads.	Ongoing
Maintain effective County enforcement of land use ordinances for the efficient and safe use of the roadways within the County.	Review the County's current ordinances to determine whether the current requirements are achieving the desired results with regard to access management, congestion and safety as well for improved economic development, tourism and quality of life for residents and commuters.	Long Term
To improve safety of rural roads and reduce the number and severity of vehicle crashes.	Work with VDOT to implement recommended improvements such as widened shoulders and rumble strips to roads identified as high crash areas.	Short & Long Term
Identify available funding mechanisms for transportation needs.	Pursue innovative funding mechanisms for priority transportation improvements which increase safety and improve mobility for all transportation modes.	Short & Long Term

T-2: To work to ensure that development and redevelopment result in minimal negative impact on road systems and traffic patterns within the County.

Objectives	Implementation Strategies	Time Frame
Consider performance standards for new developments based on the impact to level of service for the receiving road networks.	Establish a policy regarding the acceptable Levels of Service (LOS) desired for existing roadways and evaluate the impact of new developments based on the impact to the LOS over time.	Short Term
	For rezoning applications with more intense transportation impacts, ask for consideration off-site improvements to offset transportation costs for projects.	Ongoing
Minimize the use of private roads within the County. Where private roads are used, promote adequate maintenance by the users of the road to ensure the road is accessible by emergency vehicles.	Continue to limit the use of private roads for new subdivisions.	Ongoing
	Review the current ordinances for their effectiveness in limiting the number of new private roads.	Short Term
	Require minimum standards for private road development and maintenance to provide accessibility for emergency vehicles.	Ongoing
	Develop informational brochures to educate citizens about private roads and responsibilities for maintenance.	Long Term
Continue to work with VDOT to ensure state standards for all entrances to primary and secondary roads are met as part of all new construction or major modifications of land use.	Coordinate site plan and development plan review with the County and VDOT as well as other agencies on new developments and major redevelopments or changes of use.	Ongoing
Promote and encourage commuting alternatives such as transit, carpooling, ride shares, telecommuting and other options to typical commuting patterns.	Continue promotion and support of programs such as MidPen Rideshare, Traffix, and Bay Aging Transit.	Ongoing
	Coordinate with agencies to provide commuter parking lots.	Long Term
	Improve and increase high-speed internet access and available technologies to assist with telecommuting capabilities for citizens.	Long Term
Consider location and access to important historic, tourist and recreational amenities as part of long term transportation planning.	Locate amenities on the Future Land Use Plan and incorporate them into corridor studies and green infrastructure planning.	Short & Long Term

T-3: To use state mandates for transportation planning and other transportation considerations as an opportunity to further transportation plans and projects within the County.

Objectives	Implementation Strategies	Time Frame
Implement the recommendations in the two Village Development Area plans.	Incorporate the recommendations into ordinances that encourage traditional neighborhood design and transit oriented development.	Short Term
Consider implementation of impact fees to help fund transportation projects, using the process established in the state code for Impact Fee Service Areas.	Conduct a Fiscal Impact Assessment and establish a proffer policy for new development to cover the cost of infrastructure improvements or revenue sharing for transportation projects.	Long Term
Consider strategies for improvements to Route 17 in the context of its designation as a corridor of state wide significance.	Incorporate this designation into update of corridors as discussed strategies under Goal T-1.	Short Term

T-4: To encourage the provision of adequate mobility for all segments of the community.

Objectives	Implementation Strategies	Time Frame
Encourage adequate, diverse and accessible transportation for all residents who have difficulty finding or using public or private transportation such as the handicapped, elderly, and those of low income.	Continue to support Bay Transit in the County particularly to serve the rural and less densely developed areas.	Ongoing
	Support existing and enhanced fixed routes for Bay Transit such as the Court House Circulator.	Short & Long Term
	Inventory existing sidewalks and prepare a plan for connectivity between activity areas.	Short & Long Term
	Require all future pedestrian facilities and new developments to be ADA compliant.	Short Term
	Plan for future transit options within the development district.	Long Term
Coordinate with regional agencies for the development of a mass transit network to serve the needs of our region.	Continue to support regional funding for mass transit and the implementation plans such as the HRTPO Transit Vision Plan for eventual expansion to and connection with Gloucester by an express bus service or other means.	Long Term
Encourage the development of innovative and effective means of improving ground, water and air transportation systems.	Continue to participate in the Middle Peninsula Airport Authority, HRTPO, MPPDC and other regional entities as incubators for innovative ideas for improved transportation networks.	Long Term

T-4 (Continued): To encourage the provision of adequate mobility for all segments of the community.		
Objectives	Implementation Strategies	Time Frame
Develop alternative transportation methods through available funding sources.	Create and adopt a plan for safe active transportation within the County.	Short & Long Term
	Provide appropriate signage for areas of the County used for active transportation.	Short & Long Term
	Determine improvements and infrastructure needed to implement the active transportation plan in phases.	Long Term
	Continue to work with VDOT and HRTPO to identify funding sources to implement alternative transportation plans that have been embraced by the community and the Board through appropriate planning processes.	Ongoing & Long Term



Beaverdam Park - Source: Gloucester Parks, Recreation & Tourism

CHAPTER 6

Community Facilities and Services

Community facilities and public services play an essential role in Gloucester citizens' quality of life and directly impact the County's ability to guide growth. It is important to consider the current and future population when planning for adequate public facilities and services. This chapter identifies existing and projected community facility capacities, distinguishes the impacts growth may have on service provision, and highlights issues to be considered in future planning efforts.

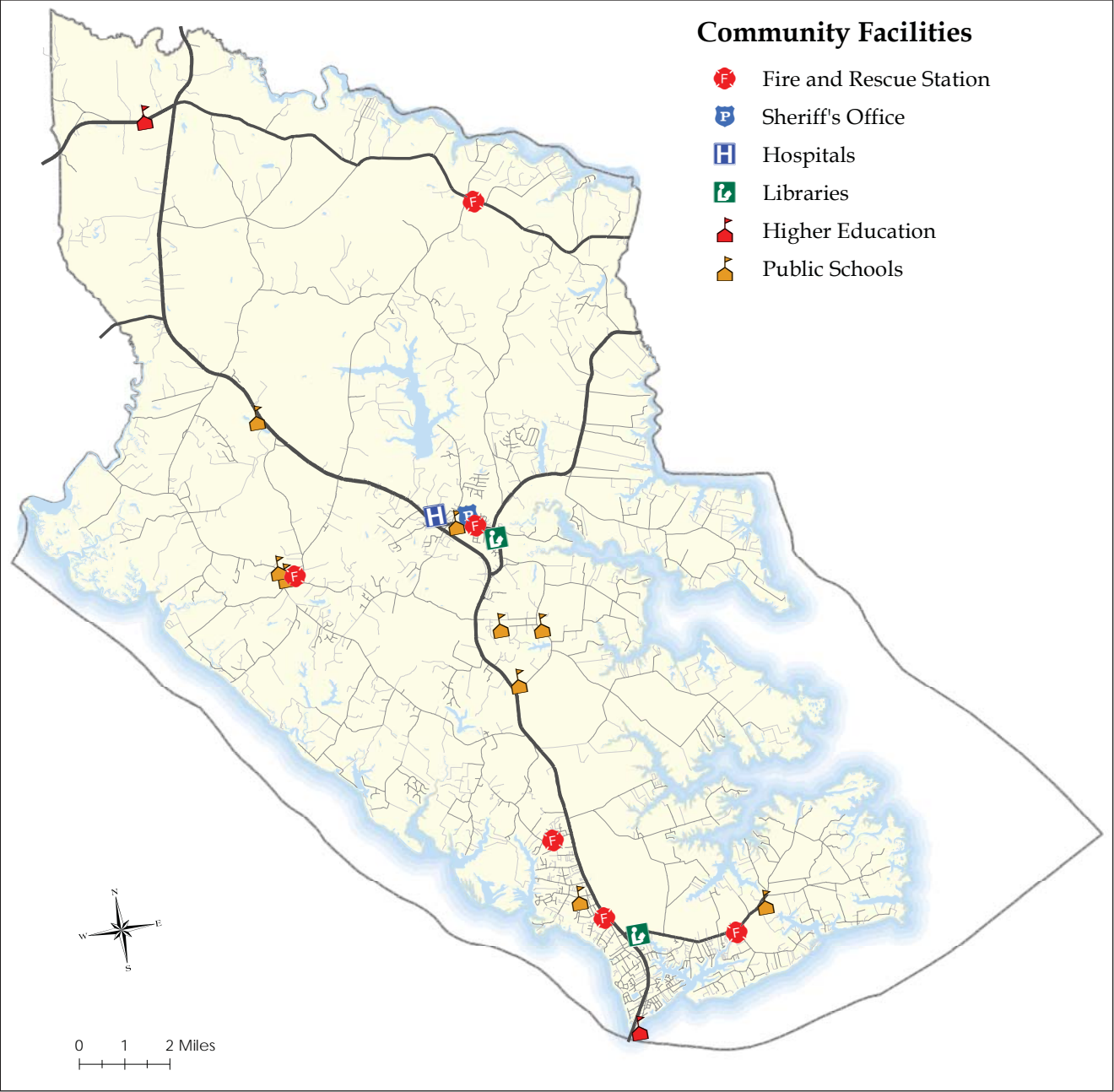
General Government

Gloucester is governed by a Board of Supervisors whose seven (7) members represent the Abingdon, Gloucester Point, Petsworth, Ware, and York Magisterial Districts along with two (2) at-large members, all of whom are elected to four (4) year terms.

The Board appoints a County Administrator as the local government's chief administrative officer, implementing the Board's policies, directing County government operations, and proposing actions for the Board to consider. The Board also appoints the County Attorney as legal counsel for the Board and County government and the local governmental structure contains additional elected officials, including the Circuit Court Clerk, Treasurer, Commissioner of the Revenue, Commonwealth's Attorney, and Sheriff.

Gloucester's relationship as a "bedroom" community to other Hampton Roads localities and the resulting exurban growth presents certain challenges. Gloucester's large residential lots are desirable for those seeking a rural lifestyle, but some services, including public sewer service, are limited. New development occurring in rural areas may make public facility and service provision and highway system maintenance difficult.

Map CF-1: Community Facilities



Data Source: Gloucester County

Providing community facilities and services is one of the primary duties and functions of local government. Gloucester's community facilities include schools, emergency response facilities, libraries, and health services.

Community facilities are discussed on pages 89-94.

Public Buildings

The County owns or leases several buildings for administration departments, constitutional officers, the court system, the state Health Department, Bay Aging, the Virginia Cooperative Extension Service, and the Department of Social Services, which contributes state revenues for the building through the Central

Currently Gloucester County maintains the following facilities:

Seven (7) public schools, including five (5) elementary schools (Abingdon, Achilles, Bethel, Botetourt, and Petsworth), two (2) middle schools (Page and Peasley), and one (1) high school (Gloucester).

The Sheriff's Department is located in Gloucester Court House, which includes the Gloucester County Jail.

Six (6) fire and rescue stations, three (3) of which (Station 1 on Main Street, Station 4 in Harcum, and Station 6 in Sassafrass) are operated by the Gloucester Volunteer Fire and Rescue Squad, and three (3) of which (Station 2 in Bena, Station 3 in Hayes, and Station 5 in Ordinary) are operated by Abingdon Volunteer Fire & Rescue.

Two (2) public library branches in Gloucester Court House and Gloucester Point/Hayes and a Bookmobile.

Gloucester County is also home to one (1) hospital (Riverside Walter Reed Hospital located near Gloucester Court House), three (3) urgent care clinics (M.D. Express in the Court House, Sentara Urgent Care in the Gloucester Business Park, and Riverside Urgent Care in Gloucester Point/Hayes), and two (2) higher education facilities (a branch of Rappahannock Community College in Glenns and the Virginia Institute of Marine Science, part of the College of William & Mary, in Gloucester Point).

Cost Allocation Plan. As population growth and service demands increase, the local government staff and facilities may also need to expand to continue providing a satisfactory level of service. Planning for facility needs and implementation through a Capital Improvements Program can assist in meeting demands.

Numerous facilities have been constructed, purchased, improved, or leased since the County's previous Comprehensive Plan was adopted in 1991. Most of this work was planned through commissioned Space Needs Assessments, the largest conducted in 1986 and updated in 1998 and 2005. The most recent update identified positive improvements but projected an unmet need of 56,743 square feet of office space by 2010. Renovation of the former T.C. Walker Elementary school for school administration staff allowed central government staff to be located on a single campus in the Court House and facilitated the sale of County Office Building Three, which now operates as a commercial facility. The Gloucester Court House Village Plan (2009), conducted to address future Court House development, recommends keeping County offices in the Court House area.¹

Nearly all existing County office facilities have been recently renovated, including the old Health Department building on Carriage Court, which now houses the County's Public Utilities office. County office facilities requiring additional updates include the modular office buildings that house the Extension Office and Public Utilities locker facilities, and the Buildings and Grounds garage and shop. Additionally, the building housing Social Services exceeds capacity due to increased citizen services and requires additional record storage and staff space. Although a long-term strategy for these facilities is still needed, short-term upgrades have extended their useful lives.

The Historic Court Green buildings, including the Colonial Courthouse, have changed occupants and function over time and County-supported operations, departments, and personnel are no longer located within the Historic Court Green. The Colonial Courthouse annex has been renovated as a

¹ Gloucester Court House Village Plan, 2009

handicapped-accessible visitor's center, the remaining historical buildings now host tourism functions, and the Botetourt Building, located across from the Court Green, is utilized as the Gloucester Museum of History. The 350th Strategic Plan, updated in January 2011, prioritized efforts to "evaluate, preserve, restore and maintain the historical treasures on the Court House Circle."

The County also owns and maintains a law enforcement office, Emergency Communications Center/Emergency Operations Center (ECC/EOC), jail, senior citizens center, animal shelter, automotive and equipment repair shop, facility maintenance shop, storage buildings, park facilities, beach concession stand, ranger stations, the Whitcomb Lodge, and a reservoir containing water treatment and transmission facilities. The County has a Fire Training Facility, operated and maintained by the Gloucester Volunteer Fire and Rescue Squad, and leases three (3) buildings housing the Health Department, Main Street Library, and Gloucester Point Library.

Issues

Gloucester's residents rely on efficient, adequately planned and staffed local government services. In order to facilitate retaining the County seat within the Colonial Court House/Main Street area long-term, capital improvement planning must include funding mechanisms to acquire appropriate real estate when it becomes available. The County should adopt a plan to anticipate and address the long-term (greater than 10 years) local government facility demands as reflected in the long-term service demands for Gloucester citizens. The existing County Office Complex, which includes the Birkhofer Building, Building and Grounds Shop, Jail, Law Enforcement Office Building, ECC/EOC, Office Buildings One and Two, and Courthouse could be expanded to utilize County-owned land to the west along Main Street to meet future County needs. Private property located between the aforementioned buildings and the property that supports the Botetourt Museum, Public Utilities Office, and modular buildings provides another possible area for future County office building construction if such property was acquired. Future County Office Complex expansions should be

compatible with the other structures and uses along Main Street, as indicated in the Court House Village Plan.²

The County's Public Utilities Department's offices, vehicles, and equipment, located on County-owned land east of the County Office Complex, should be relocated to a centralized Utility Yard on County-owned land near the center of Gloucester or private property acquired in the future, to maintain a satisfactory level of service.

Information Technology

Most municipal infrastructure components (water, sewer, electricity, and roads) remain unchanged and are governed by technical and legal standards with complex municipal service models. However, the dynamic, pervasive, and unique nature of Information Technology (IT) allows departments to establish IT goals through specialized systems and applications. These needs must be considered in the County's overall planning processes since implementation strategies will differ and information technology planning must be similar to other infrastructure planning efforts. Illustrating the existing fiber network and prioritizing network expansion along Route 17 could be an initial step in these efforts.

Commercial and government network application and associated devices increases network access and capacity demand. A reliable, secure network with adequate capacity also improves opportunities for education and commerce advancement. Ensuring utility availability for citizens is an IT responsibility requiring approaches to assessment, planning, and operations similar to those applied to other utilities. In short term, the County must consider infrastructure, services, and access issues, including service types provided by the County and/or private sector and service costs, especially as IT service provisions change with technological changes.

² Gloucester Court House Village Plan, 2009



Gloucester County Schools Image Collage - Source: Gloucester County Schools

Community Factors

Although digital connections are available in many locations, services are not always available in outlying geographic locations. Increased citizen demand for network-based services will continue as e-commerce applications become more prevalent, requiring greater access and bandwidth. To be economically competitive and satisfy local service demand, fiber optic service to residences and businesses should be expanded, keeping pace with similar technology offered in larger metropolitan areas. An enhanced technology network also allows more citizens to work from home (telework), reducing roadway congestion.

Large telecommunications companies have been slow to provide new infrastructure and services to Gloucester relative to Northern Virginia or other Hampton Roads localities due to the County's size and density. Currently, no commercial announcements, plans, requests to the County, or development projects have begun to bring fiber to the premises (FTTP) locally.

Education

Gloucester County Public Schools (GCPS) is the County's public educational system, supported by local, state, and federal funds. The Gloucester County School Board, the elected body governing school operations, consists of seven (7) members elected to four-year terms, with five (5) members representing the five (5) magisterial districts (Abingdon, Gloucester Point, Petsworth, Ware, and York) and two (2) at-large members.

Elementary and Secondary Education

Gloucester County operates eight (8) schools, including five (5) elementary schools, two (2) middle schools, and one (1) high school serving children from preschool (Pre-K) through Grade 12, with the five (5) elementary schools, Abingdon, Achilles, Bethel, Botetourt, and

CHAPTER 6 - COMMUNITY FACILITIES AND SERVICES

Petsworth, enrolling students in Grades Pre-K through 5.

The two (2) middle schools, Page and Peasley, accommodate middle school students Grades 6 through 8. Page Middle School, which opened for the 2015-16 academic year, was reconstructed on a new site on TC Walker Road across Route 17 from the former Page Middle School that was damaged during the April 16, 2011 tornado.

Gloucester High School, enrolls students in Grades 9 through 12. As a comprehensive high school, advanced and career-technical courses are offered through on-site programs and the New Horizons Regional Educational Center along with extended learning opportunities through the Chesapeake Bay Governor's School, New Horizons Regional Governor's School, and Rappahannock Community College. Virtual high school credits are available, with the opportunity extended to middle school students.

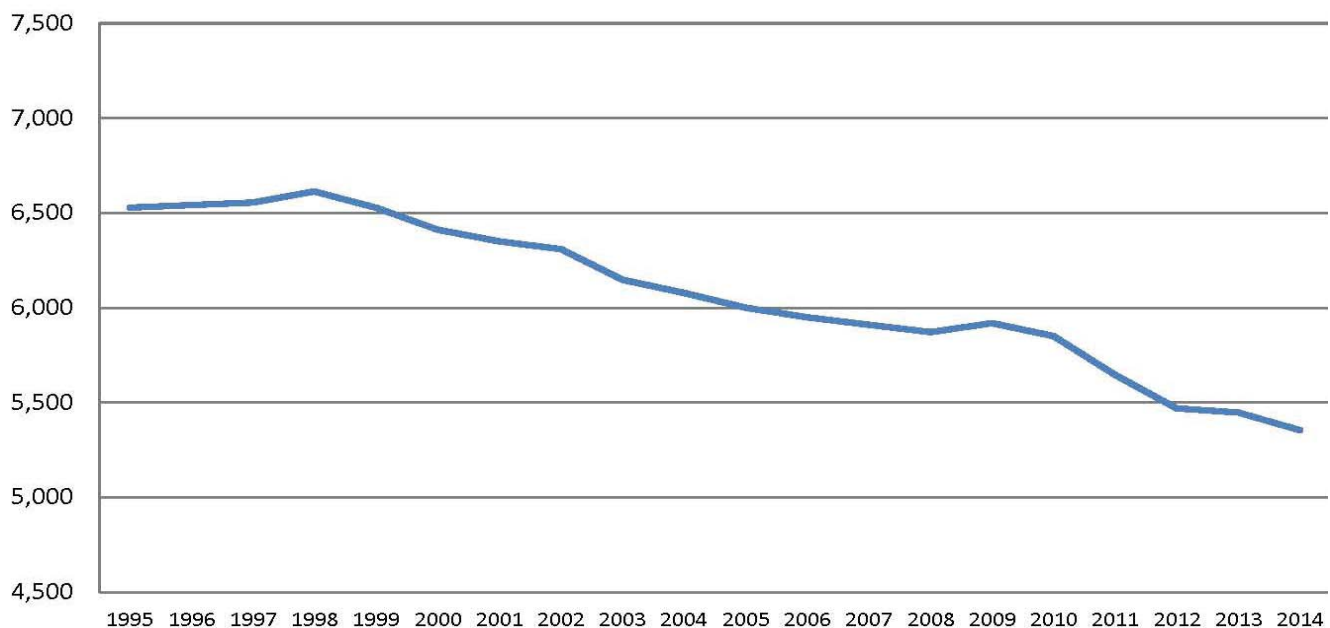
Special needs students are served in all grades through regional programs located in Gloucester, Middlesex,

and the New Horizons Educational Center, while early learning opportunities are available through the Virginia Preschool Initiative (VPI) and Headstart. Students struggling with traditional education may be placed in an alternative educational environment, providing them access to certified teachers and technology. Gloucester, Mathews, Middlesex, New Kent, King and Queen, and King William Counties and the Town of West Point participate in the Regional Alternative Educational Program with locations in Gloucester and King William County.

Higher Education

The County contains two (2) higher education facilities, as shown on Map CF-1. Rappahannock Community College is located at Glenss and the Virginia Institute of Marine Science (VIMS), a William and Mary graduate facility, is located at Gloucester Point. Gloucester residents also have access to other colleges, universities, and technical schools within the Hampton Roads and Richmond regions.

Figure CF-1: Gloucester County Public School Enrollment by Year (March ADM)



Source: Gloucester County Public Schools

Enrollment and Funding

Enrollment trends (K-12) and school capacities are monitored annually to determine facility needs. Additionally, this data is utilized for public education funding received from local, state, and federal sources. For the 2015-2016 academic year, GCPS enrolled a total of 5,372 students. Student enrollment over the past 20 years grew throughout the 1990's, peaking in the 1998-99 academic year, and has declined since, as shown in Figure CF-1.

Gloucester's decline in enrollment and state funding has led to consolidating elementary schools, with T.C. Walker Elementary School closing following the 2011-2012 academic year. This facility was repurposed and renamed as the T.C. Walker Educational Center, serving as the central office location for school administration staff, and planning is underway to determine the additional facility uses.

Future Capital Needs

As the School Board considers educational facilities and recent enrollment trends, elementary school consolidation and the T.C. Walker Elementary repurposing will provide alternative community services. In addition, expanded preventive maintenance programs will maintain, repair, and replace facility structures, fixtures, utilities, and services as needed, extending equipment life and improving efficiency. Some small-scale capital improvements are completed annually, with funding included in the operating budget. Future capital projects include replacing HVAC equipment at Achilles, Botetourt, and Petsworth Elementary Schools as well as Gloucester High School, roof replacement at Petsworth Elementary, smaller roof improvements at other schools, and continued upgrades to or replacement of restrooms, flooring, playground equipment, and buses.³ Unfortunately, capital projects needs currently exceed the funding available.

³ Gloucester County Public Schools. (2010). CIP 2012-2016 Long Range Plan., 2013

Issues

Although the overall population is growing, school enrollment has declined, a trend projected to continue in the future, and Job opportunities for young families, the economy, and increases in the retired population will also impact school enrollment. The School Board will continue to monitor demographics and provide educational services, ensuring that public education is considered a local economic development and quality of life consideration.

Land owned by the School Board is available near the new Page Middle School for additional school construction should the need arise and the School Board is working with County officials to fund other future capital needs. The School Board has also considered establishing a consolidated garage for school and County vehicles. If the current bus compound is relocated, the School Board will determine the best site use for the land housing the old Page Middle School.

Table CF-1: Capacity vs. Current Enrollment

School	Capacity	2014-2015 Enrollment
Abingdon Elementary	594	584
Achilles Elementary	419	433
Bethel Elementary	492	502
Botetourt Elementary	626	539
Petsworth Elementary	346	319
T.C. Walker Elementary*	368	N/A
Page Middle**	484	390
Peasley Middle***	802	888
Gloucester High	2,255	1,750
Total	6,386	5,405

* T.C. Walker Elementary closed following the 2011-2012 academic year

**During the 2014-2015 academic year, Page Middle School contained Grade 8

*** During the 2014-2015 academic year, Peasley Middle School contained Grades 6 and 7

Source: Gloucester County Public Schools



GCPL is a leader in early childhood education: Storytime! - Source: Gloucester Public Library

Monitoring enrollment, meeting federal and state regulations, and maintaining and managing school facilities are important current and future School Board considerations since the County school system contributes to making Gloucester the “Land of the Life worth Living.”

Libraries

The Gloucester County Public Library (GCPL) system consists of the Main Library, a 24,000 square foot facility in the Main Street Center in Gloucester Court House, the Gloucester Point Branch Library, a 3,916 square foot facility in the York River Crossing Shopping Center in Hayes, and a bookmobile. The three (3) service points have a collection of over 95,000 items, containing books, DVD’s, eBooks, CD books, music, magazines, newspapers, computers with public internet access, and wireless internet access. An interlibrary loan service provides borrowed materials from other county and state libraries. Library card holders can access self-service computers through a PC reservation system.

The library offers community events, activities, and classes for all ages, such as story time, reading programs, educational entertainers, and crafts for children up to fifth grade, and clubs, book groups, and other events for teens and adults. The Main Library contains a large community room and three (3) small study rooms for library events and non-profit group

meetings and work sessions and the Gloucester Point Branch Library includes a similar meeting room. The bookmobile travels to daycare centers, preschools, schools, senior centers, and neighborhoods, providing opportunities to participate in system-wide events such as the annual Summer Reading Program and utilize iPads and Wi-Fi access. A quarterly Library Newsletter (in print and online) provides a calendar of upcoming events and activities and patrons can register to receive the latest edition upon publication.

Although not a traditional structure, the library’s website is considered as the system’s fourth branch. The website provides numerous resources accessible with a library card, such as online book reservation, eBook and eAudiobook downloads, and research databases. Other information, including weekly events, activities, and library system and service information is also available on the website.

Issues

State and local funding availability is one of the biggest challenges facing this community resource. The Gloucester County Friends of the Library fund staff development activities and events for the public, which would be reduced otherwise. The Gloucester County Department of Information Technology (DIT) provides technical support and computer access for library patrons, visitors, and staff in order to offer numerous options and a high level of service.



Sand soccer - Source: Gloucester Parks, Recreation & Tourism

Parks and Recreation

Parks and recreational opportunities are essential components to local quality of life. Parks and recreation systems that are planned, maintained, and implemented with multiple benefits promote community health, protect the environment, enhance the County's image, and provide positive economic impacts. Gloucester must continue to plan for recreation and open space, offering recreational opportunities close to citizens.

Recent population growth and future projections indicate that more open space land is needed as population changes from land conversion increases the need for land preservation. Opportunities to obtain land for public recreation becomes more difficult as property values increase. The County has acquired parkland during the past decade through land donations, but the current park acreage does not meet the residents' needs. Gloucester should obtain additional land serving future developments when fiscally feasible while considering several factors, including community needs, infrastructure availability and development potential.

Provision of Parks and Recreation Facilities and Services

Gloucester offers residents over 350 activities and events annually at County parks and school facilities, efficiently utilizing publicly-funded assets, including 264 acres of park land for outdoor recreational opportunities, such as fishing, hiking, biking, and boating. In addition, public agencies, private entities, and non-profits also provide facilities and services in collaboration with the County. Private facilities and organizations, such as marinas, campgrounds, historic sites, civic clubs, youth leagues, and homeowners associations also assist in meeting residents' and tourists' recreational needs. The County should support private recreational facilities that increase amenity availability and recreational opportunities through measures such as notifying residents of parks and recreation programs, reviewing development plans, and providing recreational equipment information to vendors and suppliers. Public-private partnerships should be explored to create and expand recreational opportunities within the County, such as providing private entities with public land to lease in exchange for publically-available facilities, public

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facility naming and sponsorships rights to fund park improvements, and grant application collaboration.

The state purchased local land for the Middle Peninsula State Park that, once developed, will provide various recreational opportunities and the school system also allows private and public use of some athletic facilities, reducing public park demand.

Gloucester is also supported by Park Partners, Inc., a non-profit group created in 1994 that assists the Department of Parks, Recreation, and Tourism in fundraising to develop parks, purchasing park equipment, sponsoring community activities, and providing financial assistance to youth participating in recreational activities.

Citizen Survey

The County's Department of Parks, Recreation, and Tourism, with assistance from the Parks and Recreation Advisory Committee, conducted a public survey in 2008 to evaluate activities, receive public comments, and provide direction from residents and focus groups. The random survey was mailed to citizens with a written questionnaire and a prepaid return envelope to increase participation. Most respondents indicated a willingness to pay higher taxes for parks and recreational facility improvements and identified bike paths along roadways as their highest priority, as listed in Table CF-2. Goals and strategies will be developed to guide future planning efforts.

Table CF-2: 2008 Survey's Top 10 Parks and Recreation Facility Priorities

Priority
1. Bike paths along roadways
2. Community center
3. Senior center
4. Walk/Bike greenway around Court House area
5. Acquire land for future parks
6. Acquire land adjacent to Beaverdam Park
7. Add lights to athletic fields
8. Install more playground equipment
9. Add more picnic shelters
10. Skateboard park (since opened in Brown Park)



Middle Peninsula State Park dedication - Source: Gloucester Parks, Recreation & Tourism

Park and Open Space Inventory

The Department of Parks, Recreation, and Tourism currently oversees 10 County parks and open space properties totaling 264.69 acres, as shown on Map CF-2 and summarized in Table CF-3. In addition to County-owned facilities, several other public and private facilities are available for residents' use. As demonstrated by the results of the 2008 survey, availability of land for both passive and active recreation is important for local quality of life.

Middle Peninsula State Park

The Middle Peninsula State Park master plan has been adopted but development funds have not been budgeted. This 438 acre site located on the York River is proposed to have a beach, fishing pier, roughly seven (7) miles of hiking trails, boat launch, picnic areas, playground, primitive camping, cabins, and an environmental education center.

Public School Facilities

Since County-owned athletic fields and indoor spaces are insufficient, local recreational programs rely

on public school facilities for additional locations. Gloucester County Public Schools allow public and private groups to use some facilities and the County-run athletic programs would be significantly reduced without these facilities. County athletic leagues utilize nine (9) fields at Bethel Elementary, one (1) at Peasley Middle School, and two (2) at Gloucester High School.

Damage to the former Page Middle School fields from the 2011 tornado has reduced the amount of facilities available to public and private athletic leagues. Fields at Woodville Park have been created and the park is equipped with electricity and ballfield lighting, but additional infrastructure funding is needed to provide water and sewer service as well as restroom and concession facilities.

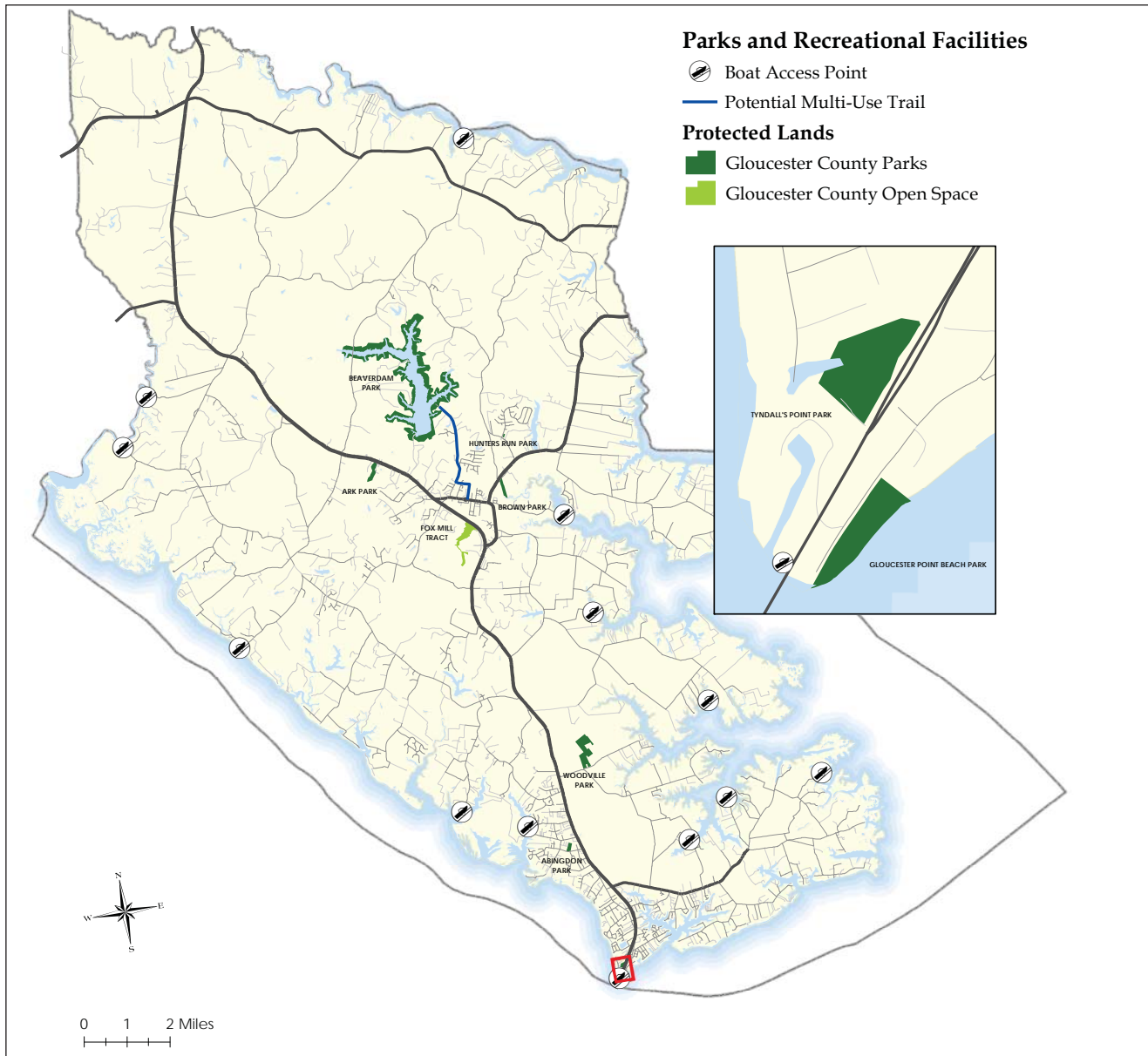


Baseball camp - Source: Gloucester Parks, Recreation & Tourism

Table CF-3: Gloucester County Parks and Open Space Facilities

Facility	Description	Acres
Abingdon Park	Abingdon Park, leased land located next to Abingdon Elementary, primarily hosts athletic events.	14.07
Ark Park	Ark Park, leased land formerly home to the Gloucester County Fair, contains several athletic fields.	29.7
Beaverdam Park	Beaverdam Park, a premier park, has two (2) entrances and a combined seventeen (17) acres of recreational property along with a 635-acre freshwater lake and over 20 miles of trails).	9 (Main) 8 (Secondary)
Brown Park	Brown Park, opened in 2005, consists of a skate park with a half-pipe, grinding rails, and bank ramps.	19.5
Gloucester Point Beach	This park contains the only County-owned public beach access, two (2) public access boat ramps, a saltwater fishing pier, and concession, shower, and restroom facilities.	5
Hunter's Run	Hunters Run, a small park within the Founder's Mill Subdivision, includes a children's playground.	1.36
Tyndall's Point	Located in Gloucester Point, Tyndall's Point Park illustrates the area's military history through preserved earth works built by Confederate Soldiers during the Civil War.	4
Woodville Park	Woodville Park is the County's largest park and has been partially developed, with other areas currently under construction. Existing facilities include seven (7) athletic fields, three (3) of which are lighted, two (2) ponds, a sand soccer/volleyball court, memorial garden, raised boardwalk, and community garden. The park's master plan includes expanded trails, a playground, and community buildings.	100
Fox Mill Tract	The Fox Mill Tract is County-owned property that has not yet been developed and with no established planned use.	74.06
TOTAL		264.69

Map CF-2: Parks and Recreation



Data Source: Gloucester County

Parks and recreation facilities help create and maintain Gloucester citizens' quality of life. A well-planned system can have several benefits, including promoting healthy activity, providing enjoyable recreational activities and sports, protecting the environment, beautifying the community, and attracting economic growth. Several other organizations also own and maintain parks and recreation facilities or protected lands in Gloucester County, including the Middle Peninsula Land Trust, the Virginia Outdoors Foundation, the Chesapeake Bay National Estuarine Research Reserve (CBNERR), The Nature Conservancy, and Thousand Trails Campground. The County is home to several types of municipal parks and recreation facilities, including boat access facilities, nature trails, parks, and athletic fields. Parks and recreation facilities are discussed on pages 95-102.



Gloucester Point boat ramp - Source: Gloucester Parks, Recreation & Tourism

Gloucester County has seven (7) parks:

Abingdon Park includes athletic fields and a picnic area.

Ark Park includes athletic fields, a basketball court, a playground, and a picnic area.

Beaverdam Park is home to several trails for hiking, mountain biking, and horseback riding, boat ramps, fishing facilities, playgrounds, and a picnic area.

Brown Park includes picnic tables and the County's skateboard park.

Gloucester Point Beach Park includes a fishing pier, boat ramps, grills, picnic facilities, and volleyball areas.

Tyndall's Point Park is an interpretive historical trail, with earthworks dating from the Civil War.

Woodville Park is a new park that includes natural areas and athletic facilities and is planned to include additional athletic fields, walking trails, gardens, and possibly an amphitheater.

Shoreline Access

Gloucester's heritage is deeply connected economically and recreationally to the water. As residents and visitors regularly spend time in or around the water and participate in numerous water-based activities, public shoreline access is a major priority for the County and the region. The Middle Peninsula Chesapeake Bay Public Access Authority coordinates with Gloucester and other localities to increase public access along the waterfront.

Public boat access opportunities are available through four (4) Virginia Department of Game and Inland Fisheries (VDGIF) boat ramps located at Gloucester Point, Tanyard Landing, Deep Point, and Warehouse Road and the Virginia Department of Transportation (VDOT) also allows public access at several landings throughout the County, as shown on Map CF-2. Gloucester owns several small parcels for fishing or boating access, but most are only suitable for car-top boats. In addition, several privately-owned marinas and docks provide boat access. Public access review, inventory, and definition, as recommended in the York River Use Conflict Study,⁴ will assist in public access planning and the associated revisions to the County's

⁴ York River Use Conflict Committee Report and Recommendations, 2008



Beaverdam Park - Source: Gloucester Parks, Recreation & Tourism

Code. A Blueways Committee has already designed a Blueways Trail Guide with five (5) access points and plans to add more as funding allows.

Gloucester's only public beach, located on the York River at the Gloucester Point Beach Park, is used by both residents and tourists and features two (2) boat ramps, a saltwater fishing pier, picnic areas, and restroom and shower facilities. However, limited parking poses some issues when nearby lots are also utilized by VIMS students.

Trails and Greenways

Most County-maintained trails are located at Beaverdam Park, which features hiking, mountain biking, and horseback riding trails. The Point Walk at Gloucester Point Beach, an interpretive walking trail at Tyndall's Point Park, and a raised boardwalk, walking trail, and nature trail at Woodville Park are other County-maintained trails.

The Virginia Birding and Wildlife Trail, developed by VDGIF, includes a Gloucester Loop with destinations at

many of the publicly-owned boat landings, providing opportunities to observe waterfowl, shorebirds, and Chesapeake Bay coastal habitats.



Beaverdam Park - Source: Gloucester Parks, Recreation & Tourism

Recreational Programs

The Parks, Recreation, and Tourism Department offers numerous recreational activities for County residents, including adult and youth soccer, basketball, softball, and field hockey leagues, and special interest classes, such as dance, exercise, arts and crafts, yoga, and karate. Although the department does not offer a therapeutic recreation program, it sponsors “STAR,” a program for special needs children that holds several recreational activities throughout the year, including a therapeutic horseback riding camp during the summer, and offers accommodations for special needs youth and adults participating in general recreation programs.

Locations for Future Parks

Several factors should be considered when identifying new parks or recreational facility locations, such as development potential, land suitability, funding, public utility and road access, park and public facility connectivity, and proximity to areas of need.

Access to public utilities and roads

Public facilities can accommodate many visitors, but when special events are held, public water and sewer infrastructure may be necessary to serve large attendances, lighted athletic facilities that consume more electricity may require access to three-phase power, and effective road access is necessary to minimize site ingress and egress conflicts. Therefore, Gloucester County should focus future park site establishment to within the Development District.

Connectivity to other parks and public facilities

In the 2008 Needs Assessment Survey, Gloucester residents indicated their desire for trails and bikeways. The County should create a comprehensive



Baseball camp - Source: Gloucester Parks, Recreation & Tourism

sidewalk plan for the village areas and greenway plan illustrating a green infrastructure network, a multiple-benefits framework linking open space and working lands through corridors protecting wildlife habitat and drinking water supply while providing recreational opportunities. This plan should show potential sidewalk and trail locations connecting parks, schools, public facilities, residential areas, retail, and work centers while providing alternative transportation routes and future park and open space sites.

Need based on demographics and geographic placement

Currently, local parkland is unevenly distributed, with some parks located in densely populated areas and

few in the northern portion of the County. Parks are used more often when located near residential areas since people walk or bicycle to them, reducing road traffic and parking demands. Demographic patterns should be reviewed to determine the underserved populations and future park sites should be located accordingly.

Planned Facilities

The County currently owns three (3) undeveloped sites, including the old landfill, a planned future park that is currently in post-closure care, requiring slope and cap protection and gas monitoring.

Definitive plans for the Fox Mill Tract, land donated to the County, have not been established, but passive usage is anticipated due to challenges presented by wetlands and the site's terrain. This tract is part of a larger potential greenway that could be preserved as open space surrounding future developed land.

Although Woodville Park is currently operational, areas are still under construction and the master plan envisions concessions, a storage facility, restrooms, a playground, amphitheater and performance barn, community building, and additional walking trails.

A 2002 study considered a multi-use trail between the Court House and Beaverdam Park,⁵ with the recommended trail alignment shown on Map CF-2. However, funds are not presently available for development.

Issues

The Department of Conservation and Recreation (DCR) recommends at least ten (10) acres of parks and recreation sites providing active and passive recreational opportunities per thousand (1,000) people.⁶ Based upon this recommendation, Gloucester is deficient, and, with two (2) parks currently leased

and subject to repurposing by the property owners, parkland shortages could increase. While park acreage is important, assets and facilities serving recreation are just as crucial. According to DCR's recreational asset recommendations, the amount of local facilities is insufficient for our County's residents. Parks and recreation has historically been underfunded, causing the local system to fall below minimum capacity and space guidelines (based upon population) and have insufficient assets.

Although school facilities are not considered in DCR's standards because they are not exclusively publicly available, DCR recommends that localities utilizing school or private facilities establish alternative options to meet recreational needs. Therefore, alternative facilities for County and school recreational needs should be planned.

Since planning for a comprehensive trail network has not yet occurred, the County should develop a greenways plan that contains bikeways and blueways and includes community involvement. Trail planning should be incorporated into green infrastructure planning efforts to ensure that new facilities contribute to the overall connectivity.

Public shoreline access and related use conflicts is a local concern that can be addressed by following the York River Use Conflict Committee Report's recommendations⁷ to minimize recreational and non-recreational use conflicts, including developing a master public access infrastructure plan that addresses shoreline management issues.

Other parks and recreation concerns include developing individual park master plans and establishing park facility design and maintenance standards. Since park design and maintenance is not regularly addressed, standards would direct planning efforts and assist annual budgeting.

⁵ Pedestrian/Bicycle Path Feasibility Study for the Gloucester County Courthouse and Beaverdam Park Area, 2002

⁶ Virginia Outdoors Plan, 2013

⁷ York River Use Conflict Committee Report and Recommendations, 2008



Riverside's Heron Cove at Sanders Retirement Community - Source: Riverside Health System

Health Services

County health services include general practitioners and specialists at local medical offices, a hospital, local public health center, regional mental health clinic, services for the intellectually disabled, and substance abuse counseling.

Riverside Walter Reed Hospital

Riverside Walter Reed Hospital (RWRH) provides numerous primary and secondary services, including inpatient, outpatient, and home-based care, an Emergency Center, surgical procedures, laboratory work, diagnostic radiology, nuclear medicine, ultrasound, C.T., M.R.I. (mobile), mammography, dialysis, physical therapy, cardiac rehabilitation, sports medicine, and stress testing. The facility's campus also has a medical office complex and home health services, such as hospice. The RWRH campus was renovated and expanded in 1995, opened the Riverside Middle Peninsula Cancer Center (RMPCC) in 2004, and recently began further expansions.

Additionally, M.D. Express, operated by the Riverside Health System and located just south of Gloucester Court House, provides urgent care services and the

Riverside Hayes Medical Center, located in southern Gloucester County, specializes in family practice and includes an urgent care facility.

Sentara Gloucester Medical Arts

Sentara Gloucester Medical Arts, constructed in 2006 and located in the Gloucester Business Park, offers various comprehensive family care services, including urgent care, family practice, pediatrics, obstetrics, gynecology, and diagnostic imaging services.

Gloucester Health Department

The Gloucester County Health Department, operated by the Virginia Department of Health's (VDH) Three Rivers Health District, offers numerous community services, including general health care, family planning, immunizations, sexual health counseling and testing, communicable disease screenings, outbreak investigation, rabies control, women's cancer education and detection, cardiovascular health education, lead screening, school-based prevention, genetic disease counseling, the Infant Safety Seat Program, Family Assessment and Planning Teams, dental health services, and community health

education. In addition, the Department provides environmental health services, such as on-site sewage disposal permits, well permits, restaurant/food service permits, and inspection.

Gloucester County Department of Social Services

The Gloucester County Department of Social Services offers social work, programs, and financial services for individuals, families, and children who meet specific program eligibility criteria, with information and referral services provided to those seeking human service related resources. Available programs include, but are not limited to, child and elderly/disabled protective services, foster care services, child placement (adoption), custody investigations, Medicaid, Energy Assistance, Supplemental Nutritional Assistance Program (SNAP, formerly known as Food Stamps), and Temporary Assistance to Needy Families (TANF), with some programs operating on a limited timeframe. Departmental services aim to promote healthy families and self-sufficient adults.

Middle Peninsula-Northern Neck Community Service Board

The Community Service Board (CSB) serves as the primary entity for publicly-funded mental health, intellectually disabled, and substance abuse services, including state mental health and intellectually disabled facility service access through preadmission screening, case management, and service coordination. The Middle Peninsula-Northern Neck Mental Health and Substance Abuse Clinic provides counseling, psychotherapy, and psychiatric and diagnostic services to regional residents. The Community Services Board also offers substance abuse services for drug and alcohol addiction, prevention, and crisis intervention and advisory services to families with intellectually disabled individuals through coordinating local and state services and operating an Adult Activity Center that provides structured schedules while aiming to help

these individuals participate in normal community activities, avoid placement in state institutions, and relieve total family dependence.

Arc of Virginia Peninsula

The Arc of Virginia Peninsula offers a therapeutic, social, and vocational Work Activity Center for the intellectually disabled and physically handicapped to reduce their financial and personal dependency on family and guardians.

Bay Aging

Bay Aging, a nonprofit organization, serves the Middle Peninsula and Northern Neck's elderly and disabled by addressing critical needs in four (4) major divisions: Health Services, Bay Transit, Senior Apartments, and Single-Family Housing. These divisions include various programs, such as home health and living skills care, an Alzheimer's Support Group, "Meals on Wheels," public transportation to the Middle Peninsula and surrounding counties, an Adult Day Break Respite Care Center, Adult Life Style Senior Center, Daffodil Gardens (an affordable independent senior living complex), weatherization, and the Section 8 Virginia Housing Development Authority (VHDA) Housing Voucher Program.

Gloucester-Mathews Care Clinic

The Gloucester-Mathews Care Clinic provides medical care for Gloucester and Mathews County residents at or below the poverty level without health insurance, funded through grants, foundations, churches, individual contributions, and fundraising events and is equipped with doctors, a pharmacy, and a dental program.



Tails on the Trail event - Source: Gloucester Parks, Recreation & Tourism

Animal Control

Gloucester employs three (3) full-time Animal Control Officers and a Dispatcher/Clerical Assistant. The County operates a state-mandated certified animal shelter that houses dogs identified as unlicensed or violating the County's Leash Law, strays, dogs that are sick, injured, or to be quarantined at the Health Department's request, dogs with pending court action or under court-ordered placement, and unwanted dogs. The shelter accepts dogs brought by residents and works with citizens and the Gloucester Mathews Humane Society to address concerns for cats and other animals.

Issues

Uncontrolled cat populations within the County present an on-going public health and safety issue. Programs to address this issue, including citizen education on unchecked populations, spaying, and neutering, are critical. Additionally, a corresponding policy and reception site for stray and feral cats should be established.

Public Utilities

Public utility planning is critical for successful community growth. Current service provision and future service needs are discussed in the following section.

Water Service

Gloucester provides water service through surface and groundwater sources in conjunction with state and federal requirements. Gloucester has addressed future water and sewer service planning in its Master Water and Sewer Plan, completed in 2005, with an updated plan anticipated in the near future,⁸ and also participated in the Hampton Roads Regional Water Supply Plan, completed in July 2011.⁹

Water Supply

Gloucester's community water system runs along U.S. 17, delivering water to approximately 14,000 people (roughly 37% of local residents) between Gloucester Court House and Gloucester Point/Hayes, as shown on Map CF-3.

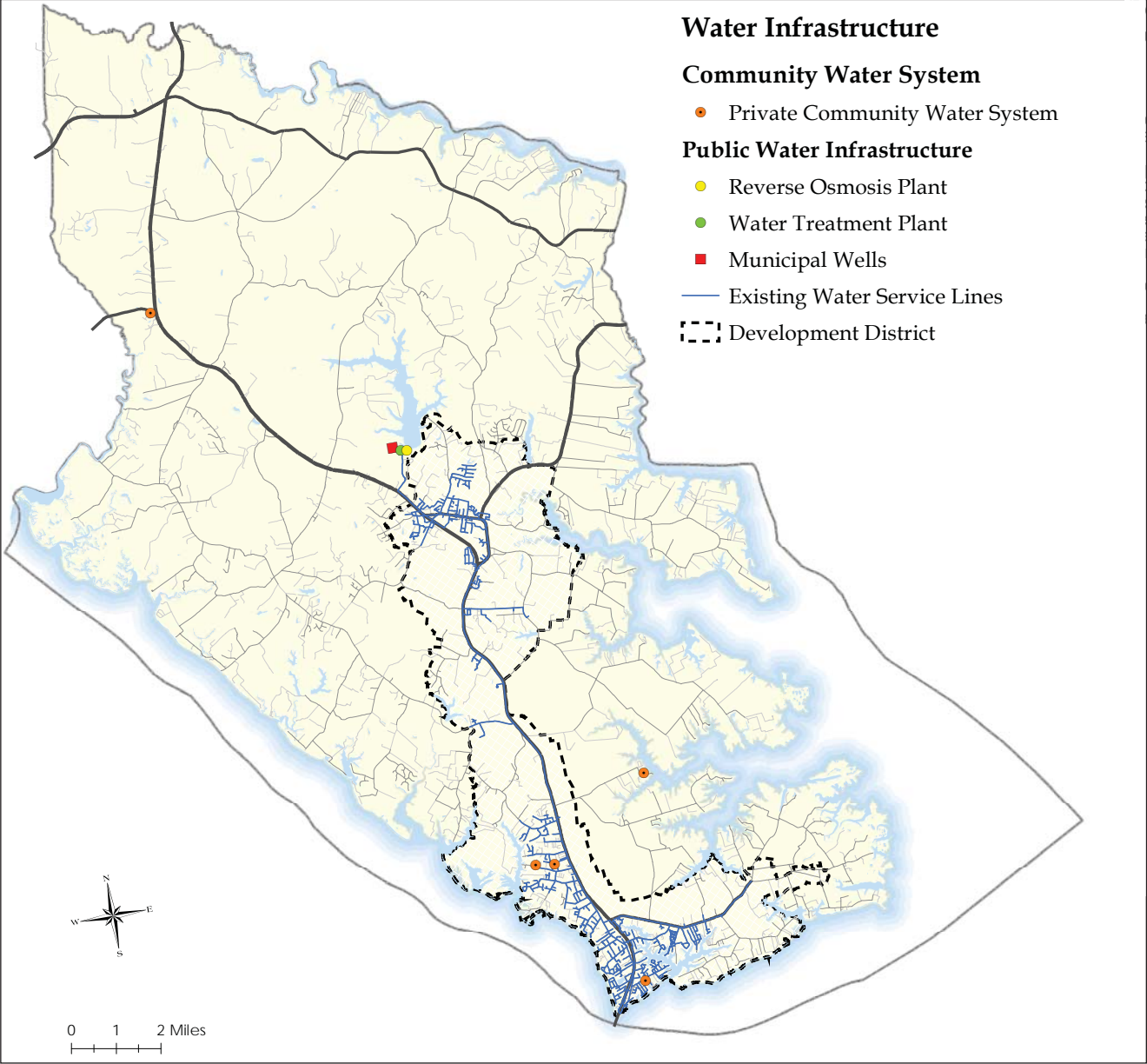
The Beaverdam Reservoir, the County's surface water source, has a drainage area of approximately 24 square miles, storage capacity of 1,460 million gallons, and provides a safe yield of 5 million gallons per day (based upon a 10 foot minimum drawdown).

Gloucester lies within the Coastal Plain Province and has water-bearing, unconsolidated sediments ranging from approximately 1,200 feet deep in the western region to approximately 2,400 feet deep along the County's eastern edge. Ten (10) hydrogeologic units in the Coastal Plain, including eight (8) aquifers and two (2) confining units, contribute to groundwater supply sources, covered in further detail in the Plan's Natural Resources chapter. The Yorktown and Potomac

⁸ Gloucester County Master Water and Sewer Plan, 2005

⁹ Hampton Roads Regional Water Supply Plan, 2011

Map CF-3: Public Water Systems



Data Source: Gloucester County

Gloucester’s public water system serves the most developed areas of the County, from the Court House south to Gloucester Point/Hayes and along part of Guinea Road. This service allows for these areas to support more residential, commercial, and industrial development than would otherwise be possible with wells. Gloucester’s public water system incorporates both surface and groundwater sources. The Beaverdam Reservoir is the County’s principal source of drinking water. The public water system also includes a deep well, a reverse osmosis treatment plant, and a surface water treatment plant.

Gloucester’s public water system is discussed on pages 105-109.

Confining Zones, local aquifers, have been used as municipal and industrial well sources. The County pumps from the Potomac Aquifer through 1,500 and 1,600 feet deep wells that require reverse osmosis (RO) treatment at two (2) facilities located near the reservoir to offset the natural salinity.

Groundwater availability is affected by the chloride transition zone, a wedge formed by the convergence of oceanic saltwater and fresh groundwater along the coast. Additionally, the Chesapeake Bay Impact Crater's edge, located within the County, contains nearly impermeable sediments and forces groundwater to flow around the rim, resulting in brackish water not recommended for use as potable water.

The Surface Water Treatment Plant (SWTP) can deliver up to two (2) million gallons per day (MGD) and was designed and built to accommodate future expansion. The RO Plant, completed in 2003, treats 2 MGD and can expand to 4 MGD. Water from the RO Plant is blended with water treated at the SWTP, which is pumped to the County's distribution system.

Water Use and Projected Demand

In 2014, the County's Department of Public Utilities delivered an estimated 1.3 MGD of treated water, ranging from 1.1 MGD in the winter to 1.4 MGD in the summer, to approximately 4,990 accounts utilizing the combined surface and groundwater sources.

According to the US Geological Survey (USGS), an estimated 9,478 private domestic wells supply potable water to approximately 25,000 people not served by public water, with a yield of approximately 1.87 MGD. Private wells primarily utilize shallow aquifers, specifically the Yorktown-Eastover (94%) and Piney Point (6%) Aquifers.¹⁰

There are three (3) private community water systems in the County with VDH permits, as listed in Table CF-4, with no reported withdrawals of more than 300,000 gallons of water per month.

¹⁰ Private Domestic-Well Characteristics and the Distribution Withdrawals among Aquifers in the Virginia Coastal Plain, 2007

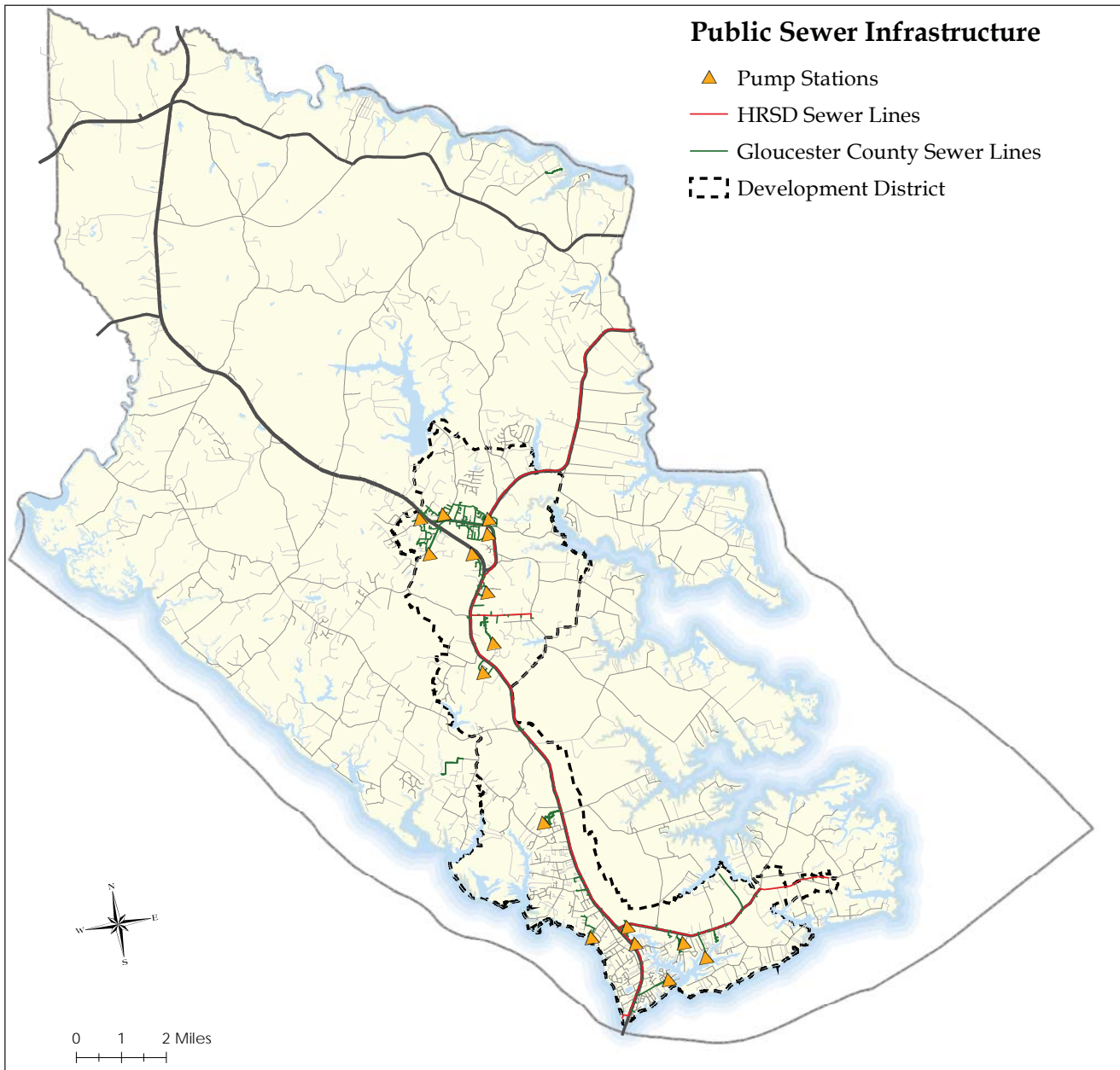
Table CF-2: Private Community Water Systems in Gloucester County

Private Community Water System	People Served	Aquifer	Permitted System Capacity (2007)
Laurelwood Estates Trailer Park	175	Potomac	30,000 gallons/day
R&L Trailer Park	45	Yorktown-Eastover	6,300 gallons/day
Waterview Mobile Home Park	80	Yorktown-Eastover	10,400 gallons/day

Table CF-3: Projected Water Supply and Demand in Gloucester County (Hampton Roads Planning District Commission, 2010)

Year	Projected Water Demand (MGD)	Projected Population Served by Public Water	Projected Population of County	Percent of Population Served by Public Water
2020	1.5	18,551	44,495	42%
2030	1.9	23,689	51,835	46%
2040	2.4	29,675	60,387	49%
2050	3.0	36,649	70,349	52%

Map CF-4: Public Sewer Systems



Data Source: Gloucester County

Gloucester County's public sewer service is provided by the Hampton Roads Sanitation District (HRSD), which owns and maintains pump stations and a major interceptor line that runs under Routes 17 and 14 from Mathews County to Gloucester Point/Hayes and under the York River into a treatment facility in York County. A second HRSD line extends along Guinea Road. Gloucester County owns and operates additional sewer lines and pump stations that feed into the main HRSD lines. The Development District, established by the County, contains areas which are currently served or planned to receive service within 12 years. This district is reviewed by the County annually to assess and incorporate new development. Gloucester's public sewer system is discussed on pages 109-111.

Gloucester has adequate water supply to meet future public water demands. By 2030, nearly 24,000 residents are expected to be served public water. This demand will require 1.9 MGD, an amount that can be handled by the existing treatment facilities, as identified in Table CF-3, which describes the County's projected public water demand through 2050. An estimated 70% of future growth is anticipated to occur in areas already served by public water. However, Gloucester may see increased demand for public water should County aquifers experience salt water intrusion.

Sewerage Service

Local sewer service is provided by the Hampton Roads Sanitation District (HRSD), which owns a 30-inch interceptor running under the York River along Route 17 to the Court House area, as shown on Map CF-4. From Gloucester Point/Hayes to the Court House, numerous businesses, residences, and communities are connected to HRSD's interceptor and all other parcels are served by County-owned and maintained public sewer lines and pump stations. Wastewater from these systems is piped to an HRSD treatment facility in York County and approximately 1,450 local accounts exist.

Hampton Roads Sanitation District sewerage service provides adequate capacity for the planning horizon, with an agreement ensuring that HRSD will upgrade their primary force mains should they reach capacity. However, HRSD will not install or maintain County sewer lines.

The County's Development District, as shown on Map CF-5, identifies areas with existing public utilities or where future development and utilities expansion should occur and this boundary is required to be reviewed and updated annually by the County's Water and Sewer Ordinance.

Special Order by Consent

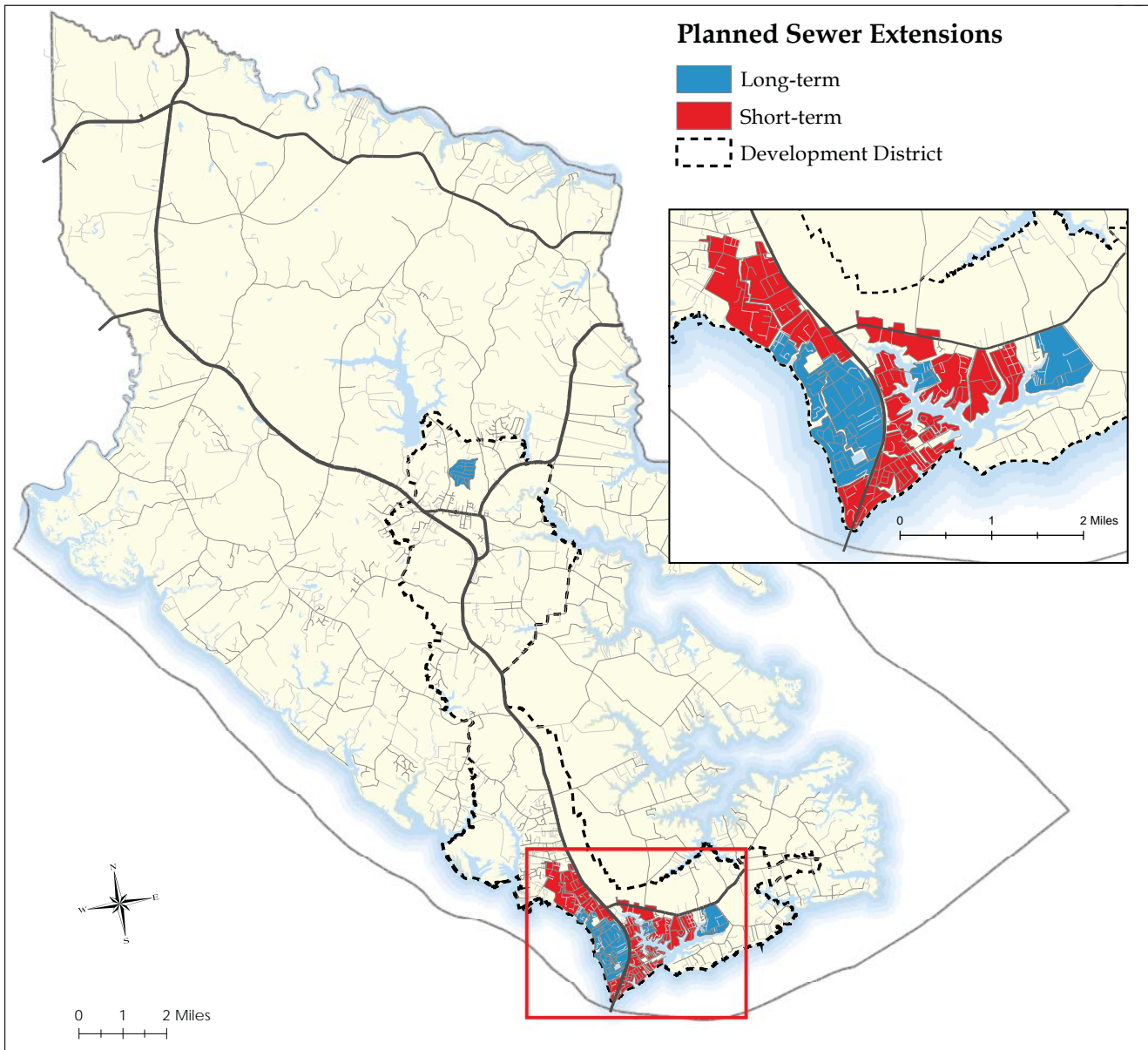
Gloucester will continue to work with the region to fulfill the requirements of the Special Order

by Consent (SOC) issued between the State Water Control Board, HRSD, and Hampton Roads localities in 2007 and modified in 2014, which aims to resolve declared environmental law violations and prevent sewer overflows and associated local water quality impacts. Regional sewer system overflows discharging untreated sewage into public waters occur due to wet weather events, pipe breaks, electrical outages, infiltration and inflow, insufficient sewer system capacity, and other factors, such as Hampton Roads' low-lying nature, high groundwater table, and periodic flooding. The Hampton Roads Sanitation District, localities, and HRPDC coordinate SOC activities through a 2007 Memorandum of Agreement that was revised in March 2014.

Under the SOC, HRSD and Hampton Roads localities agreed to a two-phased approach that addresses regional and local sanitary sewer system capacity and performance conditions causing or contributing to unpermitted sewage discharges. The initial phase included data collection, evaluation, and plan development with regional elements that established uniform standards to identify wet-weather flow infrastructure improvements and local components that addressed unpermitted discharges and necessary system repairs. Gloucester participated in the regional technical standards and sewer system hydraulic model development and has evaluated County sewer lines to identify and prioritize areas of concern.

The SOC's second phase will include sewer rehabilitation plan implementation and long-term system capacity enhancements, such as regional infrastructure project construction and local system improvements identified in the first phase. Gloucester cooperated with HRSD and other localities to develop rehabilitation plans and Gloucester's rehabilitation plan addresses publicly-owned gravity sewer facilities and assesses peak flow reduction feasibility and costs. The Regional Wet Weather Management Plan (RWWMP), completed by HRSD and the localities in 2013, identified long-term system capacity improvements, analyzed existing and future peak flow system performance scenarios, evaluated alternatives to determine an acceptable level of service, and established a regional capital program and implementation schedule for the next 10-20 years.

Map CF-5: Planned Sewer Extensions



Data Source: Gloucester County

Gloucester's public sewer service is provided by the Hampton Roads Sanitation District (HRSD), which owns and operates a major interceptor line that runs along Route 17 and conveys wastewater to a treatment facility in York County. Additional sewer infrastructure, including collection lines and pump stations, is owned and maintained by the County. Identifying appropriate areas for the expansion of services is a major component of planning for the orderly development of the County. Gloucester has established a Development District, which includes areas currently served and identified as appropriate for potential expansion. In addition, the County has identified several specific areas within the Development District that should receive extensions over the next 20 years, shown in red and blue on the map. Planned sewer extensions are discussed on page 109.

Gloucester continues to participate in SOC-related activities through the HRPDC's Directors of Utilities Committee and other intergovernmental events.

Issues

Water Service

The Department of Environmental Quality (DEQ) expanded the Eastern Virginia Groundwater Management Area (EVGMA) limits to include Gloucester and all remaining Virginia Coastal Plain localities, requiring a DEQ withdrawal permit for the County's two (2) deep wells. Future local groundwater withdrawal increases will require new permits subject to the Eastern Virginia Groundwater Management Area evaluation process and the County should be aware that additional withdrawals may not be available at that time and plan accordingly.

Sewage Service

Gloucester has historically used soil suitability to address septic tank disposal system concerns, resulting in large lot development or, in some locations, development limitations until public sewer service is provided.

State code permits development on previously limited property, specifically those with clay soils or high water tables, through alternative on-site sewage systems (AOSS), which may not require a drainfield and are exempt from some Health Department requirements. This has allowed for residential development in areas where it was not previously possible.

The Special Order by Consent requires Gloucester to plan for ongoing maintenance and long-term sewer system enhancement and consider the rehabilitation plan's recommendations in the County's Capital Improvement Plan. The rehabilitation plan will define specific sewer overflow reduction measures, address local system deficiencies, and identify system-wide improvements, such as infiltration and inflow source control that ensures sewer infrastructure sustainability and reduces peak flows to acceptable

levels. As sewer system flow monitoring and reporting will be necessary to demonstrate system performance and evaluate infiltration and inflow reduction effectiveness, appropriate monitoring equipment has been installed at all County pump stations.

The rehabilitation plan describes the County's regional sewer system peak flow commitment and affects downstream improvements' sizing and performance. The County must also plan for continued system maintenance to ensure that wet-weather peak flows meet the acceptable thresholds. As of March 2014, HRSD and localities are collaborating on budgeting and planning tools to finance regional consistent rehabilitation efforts.

Sewer system capacity projects to accommodate long-term flow conditions and provide appropriate service levels will be identified as a part of the Regional Wet Weather Management Plan (RWWMP), which assumes full implementation and continued project performance identified in the HRSD and locality rehabilitation plans. The level of service defined in the RWWMP was cooperatively developed, mutually agreed upon by HRSD and the localities, and accepted by the U.S. Environmental Protection Agency. Gloucester County must allocate plan improvement and project implementation resources to maintain compliance with the approved plan and avoid regional system impacts or be subject to potential legal action. The SOC also requires flow monitoring, reporting, and system performance assessment after Regional Wet Weather Management Plan implementation and the County should plan for these associated costs.

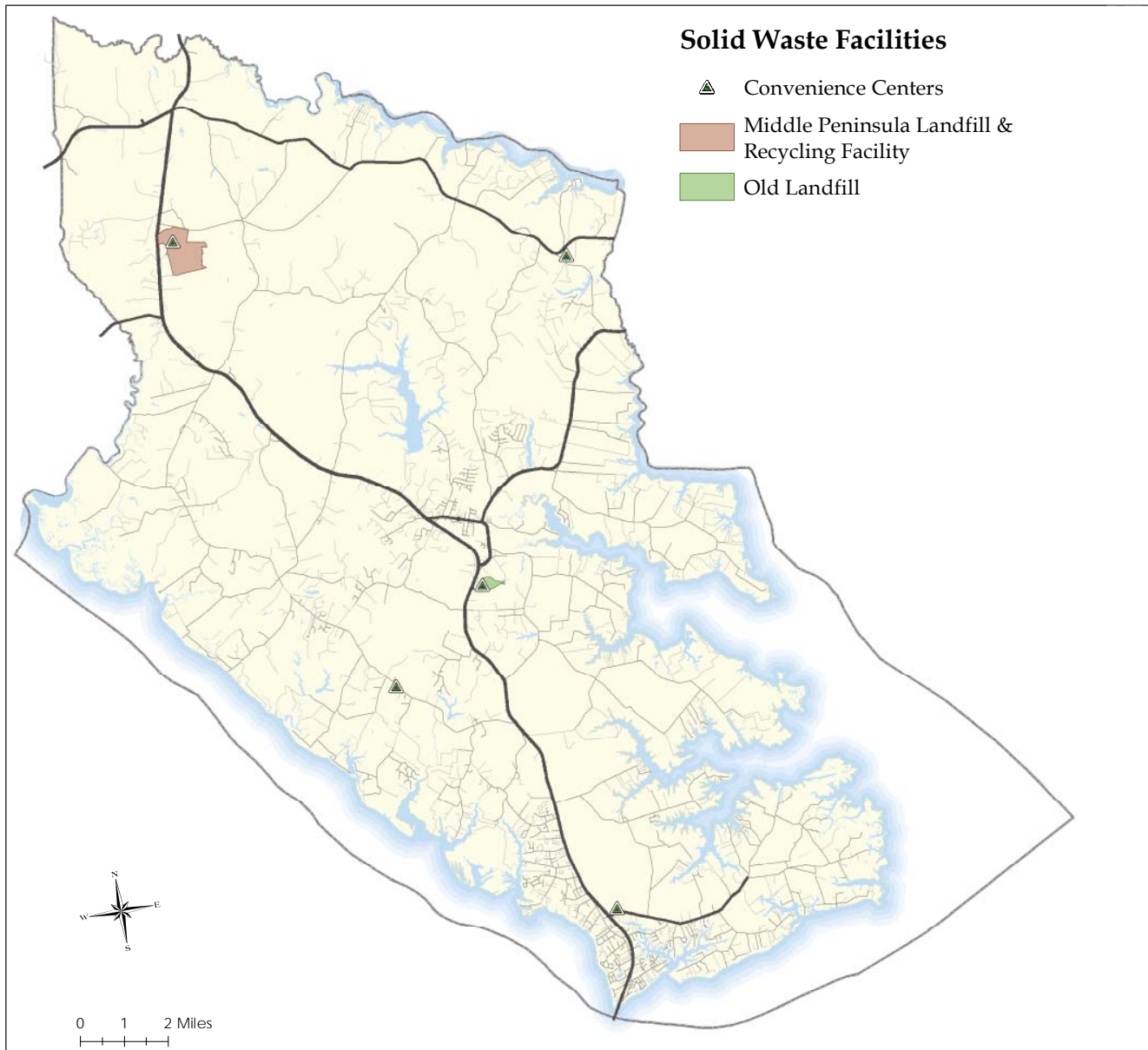
Public Works

Solid Waste Management

Planning for future solid waste disposal needs occurs through the Solid Waste Management Plan of 1997, which is updated every five (5) years, with the 2015 update accepted by DEQ.

Gloucester opened the 510-acre Middle Peninsula Landfill & Recycling Facility (MPLRF), operated by

Map CF-6: Solid Waste Facilities



Data Source: Gloucester County

Gloucester's solid waste management facilities are owned by the County and operated by Waste Management Disposal Services of Virginia, Inc. The main facility is the 510-acre Middle Peninsula Landfill and Recycling Facility located near Glenss. The County also owns five (5) convenience centers that are operated by Waste Management located south of Gloucester Court House on Beehive Drive (Convenience Center #1), at the active landfill (Convenience Center #2), on Guinea Road (Convenience Center #3), on Hickory Fork Road (Convenience Center #4), and on Burkes Pond Road (Convenience Center #5). Gloucester also owns and cares for a closed landfill located in the Court House.

Solid waste facilities are discussed on pages 111-113.

Waste Management Disposal Services of Virginia, Inc. (WMD), in 1995. This facility is managed at no cost to the County through a long-term agreement running through the landfill's available capacity, meeting the County's current waste disposal needs. Contracted waste disposal is limited to 2,000 tons per day and estimates the facility's remaining life expectancy at approximately 80 years.

In addition to the MPLRF, Gloucester owns five (5) convenience centers open and fully-staffed six (6) days per week, as shown on Map CF-6, that are operated by WMD through the long-term agreement. Each center accommodates solid waste disposal for recyclable materials, white goods, and brush and also collects household hazardous wastes on a biannual basis.

The County's long-term agreement with WMD also requires WMD to pay associated fees, including host government rent and taxes, ranging from \$300,000 to \$500,000 per year. The no-cost waste disposal, landfill and convenience center operations, and annual County revenue provides numerous long-term benefits from services that are often liabilities for similar localities.

Gloucester owns a closed landfill that is currently in a post-closure care period to monitor the landfill's cap integrity, slopes, and resulting gases, funded through the County's contract with WMD. The Virginia Department of Environmental Quality (DEQ) has ended groundwater monitoring requirements at this landfill after determining that long-term facility monitoring results have not shown adverse impacts to the public health, safety, or the environment.

Disasters and Solid Waste

Natural disasters typically produce additional waste, including putrescent wastes, wet carpeting and furniture, building demolition items, and arboreal wastes. Gloucester adopted the Solid Waste Management Plan (1997, revised in 2015), which covers daily capacities, and a Disaster Solid Waste Plan (1998, revised in 2001), addressing when a state of emergency is declared in the County. When Hurricane Isabel struck in 2003, the County deployed



*Damage to Gloucester Point pier during Isabel -
Source: Gloucester Parks, Recreation & Tourism*

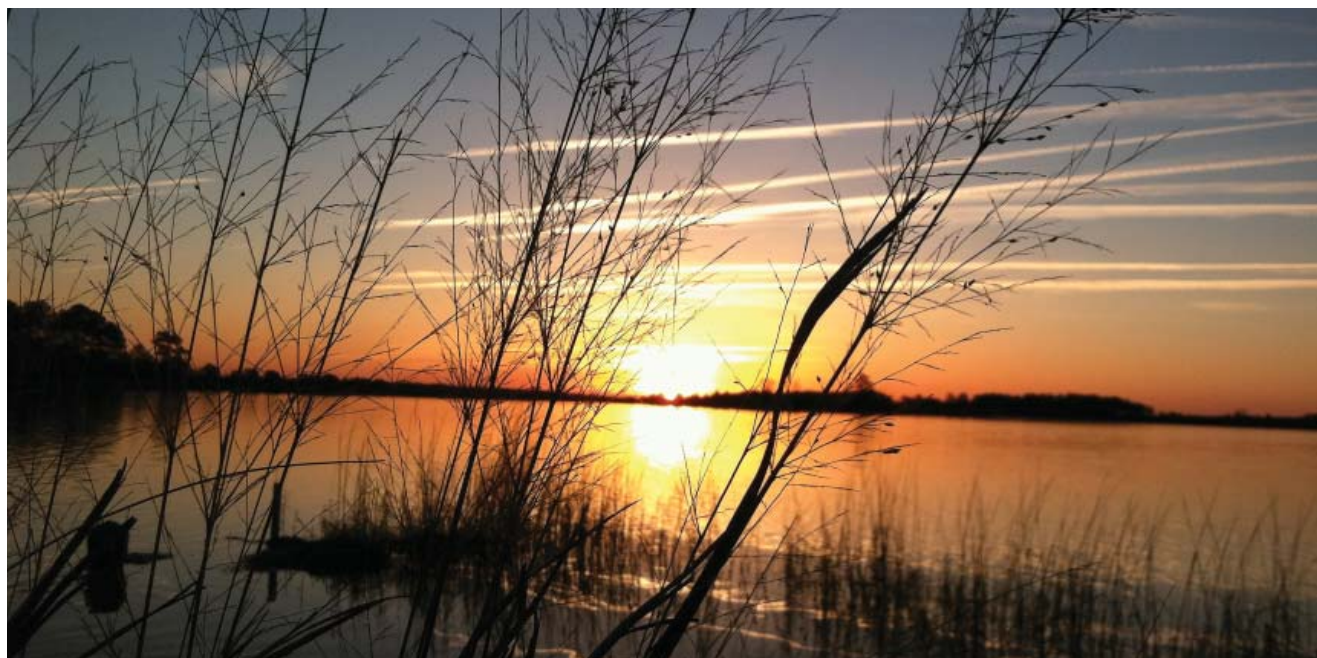
contractors, opened the temporary debris storage and reduction area, and broadcasted public emergency debris disposal informational messages.

Issues

The County's existing agreement with WMD, which provides for solid waste disposal through the landfill's life along with local revenue, benefits the County. The agreement's length and consistent benefits are particularly valuable during a time when other localities experience solid waste management cost inflation from increased regulation and economic inflation.

Potential increased annual host government fees from an increase in the landfill's 2,000 ton-per-day disposal limit, resulting in a shortened landfill life and reduced local benefits, is the County's greatest solid waste concern. Increases in daily disposal may provide additional income in the short-term, but long-term benefits would be reduced, outweighing any short-term benefits.

The existing convenience centers' ability to handle increased customer traffic is another concern since the long-term agreement only covers operations of the existing centers, with future centers funded by the County. Although future usage estimates are undetermined, population increases will increase the centers' operational demand. Conversely, suburban development utilizing commercial door-to-door refuse collection companies may reduce convenience center demand.



Brays Point Boat Landing - Source: Gloucester Parks, Recreation & Tourism

Environmental Programs

Stormwater Management

As discussed in the Plan's Natural Resources chapter, Gloucester is not state or federally-regulated as a Municipal Separate Storm Sewer System (MS4) and, therefore, does not have a municipal stormwater program or maintain stormwater infrastructure. The County regulates stormwater runoff through the Chesapeake Bay Preservation Ordinance, Erosion and Sediment Control Ordinance, and Stormwater Management Program. However, recent local growth may result in the U.S. Census Bureau redefining Gloucester as urbanized and subject to increased state and federal stormwater regulations through the Virginia stormwater regulations and the Chesapeake Bay Total Maximum Daily Load (TMDL) mandated by the Environmental Protection Agency (EPA).

Issues

Planning, designing, and installing stormwater infrastructure to meet the program requirements may

increase development costs and future classification as an MS4 would involve state and federal permitting/fees through "Phase II" improvements,¹¹ including:

- Public education and outreach on stormwater impacts
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management for new development and redevelopment
- Pollution prevention/housekeeping for municipal operations

These requirements would result in structural and non-structural investments and Gloucester should continue to monitor this situation.

Public Safety

Gloucester is serviced by numerous law enforcement and fire and rescue squads, as described in the following section.

¹¹ <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPPermits/MS4Permits.aspx>

Law Enforcement

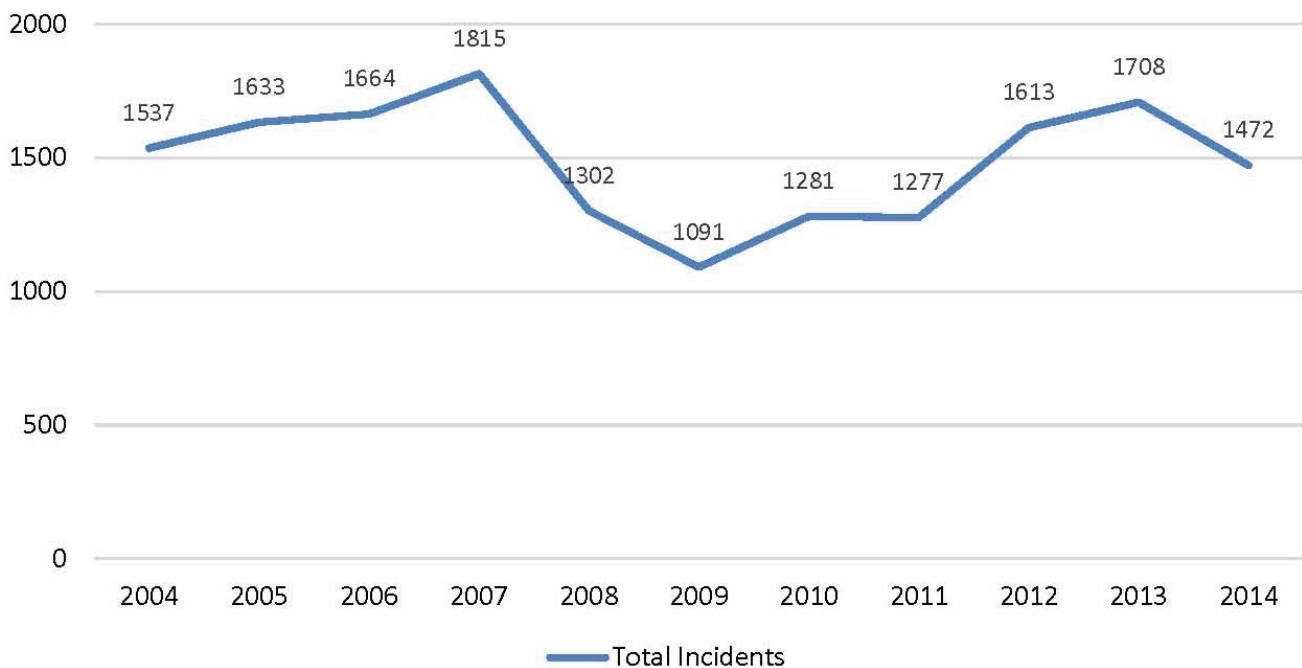
Public safety needs are served by the Gloucester County Sheriff's Office, currently housed in the Law Enforcement Office Addition at the Gloucester County Jail and consisting of five (5) divisions (Law Enforcement, Investigations, Communications, Civil, and Corrections) and eighty-six (86) sworn officers, eleven (11) E-911 dispatchers, and six (6) civilian staff. The Sheriff's Office coordinates with the Virginia State Police and neighboring locality Sheriff Offices and Police Departments. The Gloucester County Jail is staffed to provide services for 81 inmates with office capacity for 65 individuals and public access for 48 individuals.

County crime statistics are compiled annually by the Virginia State Police with the most serious crimes designated as "Group A" offenses and less serious

crimes designated as "Group B" offenses. There were 1,472 Group A incidents within the County in 2014, the highest among Middle Peninsula localities, with 33% occurring as larceny, 13% as vandalism, 34% as simple assault, and 10% as drug offenses. Figure CF-2 shows the 10-year trends for all crimes and Figure CF-3 shows the 10-year trends for Group A crimes.

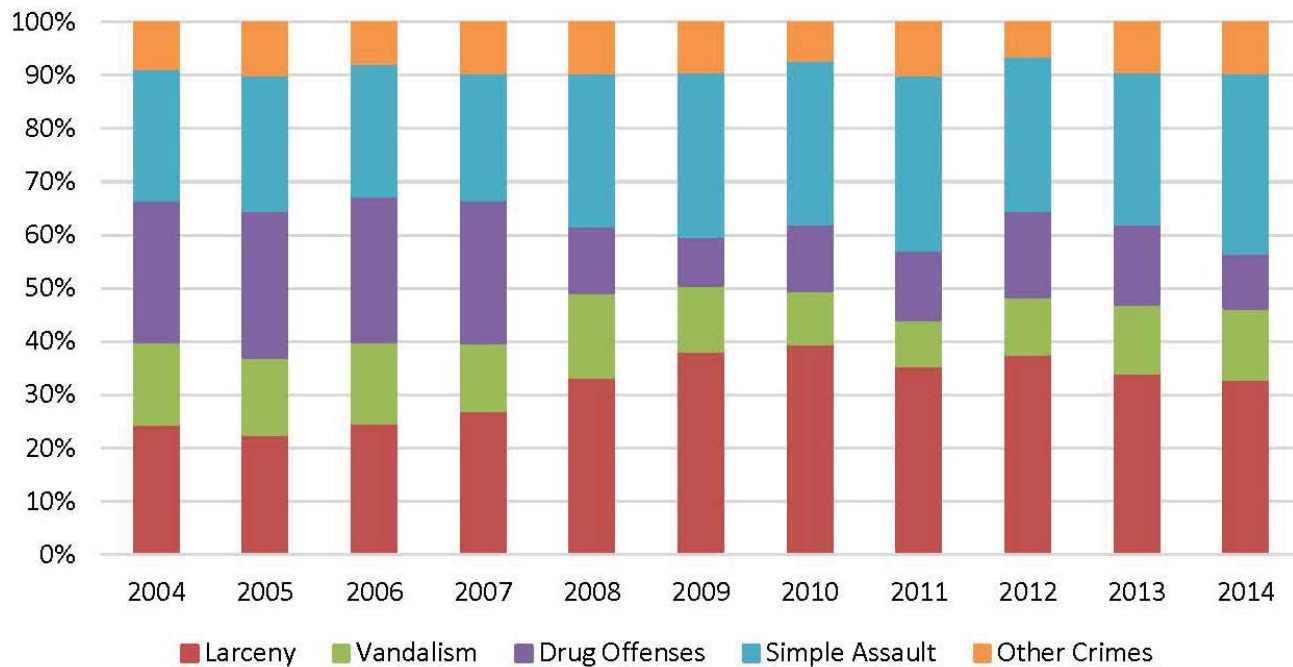
Although Gloucester's crime rate is higher than other Middle Peninsula localities, its population is also greater and increased crime is to be expected. Further urbanization will require expanded and more sophisticated public safety services.

Figure CF-2: Total Crime Incidents in Gloucester County 2004 – 2014



Source: Virginia Department of State Police, 2004-2014

Figure CF-3: 10-year crime trends in Gloucester County (Group A Crimes by % of Total)



Source: Virginia Department of State Police, 2004-2014

Fire Protection and Emergency Services

County fire protection and emergency rescue services are provided by the Gloucester Volunteer Fire and Rescue Squad (GVFRS) and Abingdon Volunteer Fire and Rescue (AVFR). The GVFRS serves the northern two-thirds of the County and has three (3) fire and rescue stations, while AVFR serves the southern third of the County through three (3) fire and rescue stations, as shown on Map CF-1. All County fire and rescue stations have working Mutual Aid agreements with neighboring localities for additional protection and services.

The County belongs to a Regional 800 MHz Emergency Communications System that provides the highest emergency interoperability level with nearby localities, including York County, James City County, Poquoson, and Williamsburg.

As a member of the Hampton Roads Planning District Commission (HRPDC), Gloucester also belongs to the Hampton Roads Tactical Regional Area Network (HRTacRAN), a regional microwave network funded by a Homeland Security grant that provides a survivable phone/data connection between all Emergency Operation Centers (EOC's) in the sixteen (16) member localities.

Regional Emergency Management

Gloucester's Emergency Management community coordinates with other agencies and Middle Peninsula and Hampton Roads localities to maintain communication in times of need.

Issues

As population increases, maintenance of adequate police and fire protection, emergency medical services, and emergency management is necessary. Since existing facilities' proximity to new developments

impact response time during emergency situations and public safety facility development costs grow as response distances increase, police and fire protection should be located near proposed residential, commercial, and industrial developments and within the Development District when possible. If growth outside the Development District occurs, new facilities will need to be considered.

Law Enforcement

International City/County Managers Association studies suggest an average of 2.07 police personnel per thousand residents in jurisdictions of Gloucester's size. Although the current police service level is approximately 2.33 personnel per thousand, this ratio is lower after accounting for Sheriff's staff serving the Courts and performing other administrative duties. Reduced personnel needs resulting from the County's low crime rate and rural nature are offset by the increased response time and distances for rural service delivery. The current service level reflects the importance of monitoring personnel needs and providing personnel as the population increases. By 2030, law enforcement personnel should increase by 26 sworn officers and administrative office and detention facility expansions should occur.

Due to the County Jail's limited capacity, Gloucester rents bed space from the Middle Peninsula Regional Security Center, located in Saluda. A long-term inmate housing solution should be developed, including a Community-Based Corrections Plan, which would estimate the inmate population and needs over the next 18 years.

Fire Prevention and Emergency Medical Service (EMS)

Volunteer fire and rescue services rely upon citizen participation to maintain staffing and service levels and large localities like Gloucester typically contain services near the population centers. Although, these population centers are adequately protected, future needs are difficult to determine.

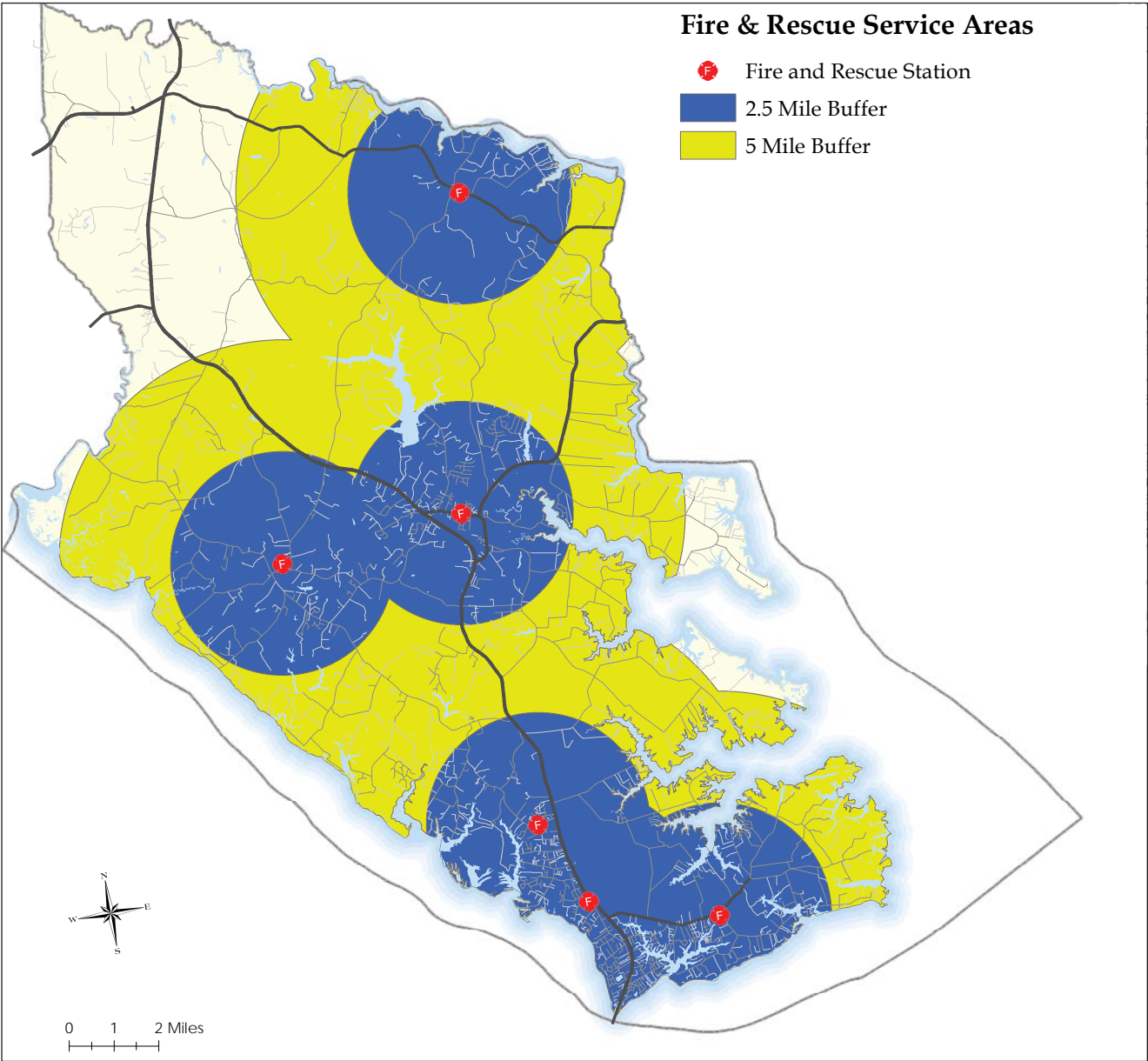
The National Fire Protection Association (NFPA) recommends fire and rescue stations be located at four (4) mile intervals to provide rapid response and Virginia's Insurance Service Organization (ISO) generates insurance rates based upon residential structures within a five (5) mile radius from a fire station and hydrant service (including dry hydrants), with residences within five (5) miles of a fire station and 600 feet of a hydrant receiving the best rating and reduced insurance premiums. Gloucester's two (2) fire squads have received an improved ISO rating from increased firefighting abilities, updated equipment, and additional training, resulting in lower homeowner insurance premiums throughout the County.

To provide a five (5) to six (6) minute response time, some fire departments plan future stations at a 2.5 mile radius. Most County population centers are within a 2.5 mile service radius, as shown in Map CF-7, which illustrates 2.5 and 5 mile response areas around current station locations. Given sufficient volunteer staff is available, stations should be developed near Owl Trap and White Marsh, areas not currently served within these distances.

Water supply may be a concern in areas not serviced by public water and can be addressed through a water supply plan ensuring that pumper, tanker, and surface water supply is coordinated. Currently, both GVFRS and AVFR operate tankers in rural areas and mutual aid agreements provide adequate water supply within five (5) miles of the stations. However, tanker response times are longer at the County's edges and additional dry hydrants should be planned. There are currently five (5) dry hydrants installed in the County, but other fire suppression systems may be necessary for larger subdivisions not served by public water.

Volunteer recruitment and retention is the greatest fire and rescue concern and staffing the existing six (6) stations full-time while meeting NFPA standards would require increased taxes. With current staffing transitioning to a volunteer-paid staff combination, both departments can continue volunteer fire response service during daytime emergencies. Under this staffing format, the departments maintain a full-time volunteer EMS staff capable of Advanced Life Support (ALS) supplemented by paid staffing when

Map CF-7: Fire and Rescue Service



Data Sources: Gloucester County, Gloucester Volunteer Fire and Rescue Squad, Abingdon Volunteer Fire and Rescue

Providing emergency medical, rescue, and fire response is a critical public service of local government. While Gloucester does not have a municipal fire and rescue department, the County is served by two (2) volunteer fire and rescue organizations, Gloucester Volunteer Fire and Rescue Squad (GVFRS) and Abingdon Volunteer Fire and Rescue (AVFR). The map shows areas that are located within 2.5 miles and 5 miles of the County's fire and rescue stations. Most of the county is located within five (5) miles of a fire and rescue station, though actual travel distances will vary based upon road and access conditions.

Fire and rescue service is discussed on pages 116-119.



Gloucester Volunteer Fire and Rescue - Source: www.gvfrs.org

Gloucester County is served by two (2) volunteer fire and rescue organizations.

Gloucester Volunteer Fire and Rescue was first established in 1946 and provides fire, rescue, and emergency medical service to the County's central and northern areas. Gloucester Volunteer Fire and Rescue currently operates three (3) stations (Station 1 on Main Street, Station 4 in Harcum, and Station 6 in Sassafrass) that, together, house six (6) engines, one (1) tower, one (1) rescue vehicle, five (5) medic vehicles, two (2) brush trucks, one (1) boat, and one (1) tanker. Station 4 is also home to the Middle Peninsula Regional Fire Training Center.

Abingdon Volunteer Fire and Rescue was first established in 1953 and provides fire, rescue, and emergency medical service to the southern areas of the County. Abingdon Volunteer Fire and Rescue currently operates three (3) stations (Station 2 in Bena, Station 3 in Hayes, and Station 5 in Ordinary) that, together, house four (4) engines, four (4) medic vehicles, two (2) rescue trucks, two (2) brush trucks, two (2) boats, two (2) utility vehicles, one (1) tanker, and an EMS support vehicle.

a full volunteer crew is not available. However, even when a full volunteer staff is available, simultaneous calls stretch the departments' capabilities. Although both departments have accommodated additional calls through volunteer responses and mutual aid, increased call volumes and additional events strain resources.

State fire and EMS requirements for initial and continued training and certification maintenance demands additional volunteer time. Though both GVFRS and AVFR maintain recruitment programs to attract new members, retaining existing members after completing basic training presents a greater issue since younger members (particularly EMS members) resign as duty and training requirements conflict with everyday life. As the national average EMS retention time is three (3) years, the first year to year-and-a-half is primarily spent in training, providing a response life of one (1) to two (2) years. Similarly, the national average fire fighter retention time is five (5) years with the first year spent in training. Therefore, joint members trained in both fire and EMS response provide the most valuable service, but initial training requires significant time dedication. Volunteer recruitment and retention is a common issue for both volunteer and combination departments (over 75% of nationwide departments) that must manage growing response and training demands with minimal or no budget increases.

CHAPTER 6 - COMMUNITY FACILITIES AND SERVICES

Goal CF-1: Review and prioritize capital improvements and public facilities to meet existing and future level of service needs for the County.		
Objectives	Implementation Strategies	Time Frame
Develop and adopt a plan to anticipate and address the long-term public facility needs to serve Gloucester residents based on the Comprehensive Plan, School Board Comprehensive Plan, and other plans and policies.	Regularly review and update the Capital Improvements Plan to address capital needs and upgrades.	Ongoing
	Consider capital investments and upgrades to cover replacement costs based upon facility life cycles.	Ongoing
	Develop a funding source for routine capital repair items.	Short Term
	Initiate funding requests through the County Capital Improvements Program.	Short Term
The County should assess and budget for capital improvements to provide residents and visitors with adequate facilities.	Develop and update County facilities serving residents as necessary.	Ongoing
	Modernize and upgrade school facilities to sufficiently serve existing and future student needs.	Ongoing
	Continue to evaluate facility needs through School Board and Board of Supervisors collaboration.	Short Term
	Improve County maintenance facilities to ensure a continued level of service.	Short Term
Provide facilities that fulfill state and federal requirements and meet industry-accepted standards.	Develop plans to address specific public needs and issues, such as public access, utility expansion, and inmate housing, among others.	Long Term
	Ensure that community facilities are built or upgraded to meet state and federal regulations.	Ongoing
Coordinate non-profit services and private development to ensure that planning efforts and community services are met.	Expand local parks, recreation, library, and other services to meet accepted standards based upon industry guidelines.	Long Term
	Support non-profit and private groups that perform community services to leverage state and federal funding to meet residents' needs.	Ongoing
	Ensure that private development is consistent with local plans and planning efforts.	Ongoing
	Establish a fee in lieu service to provide a funding source to develop infrastructure and facilities necessary to serve future development.	Short Term



Marsh view - Source: Gloucester Parks, Recreation & Tourism

CHAPTER 7

Natural Resources

Gloucester's various woodlands, rivers, creeks, and wetlands, along with its abundant farm land, have provided residents with a livelihood and high quality of life for over 350 years.

Watermen benefit from the extensive shoreline and proximity to the Chesapeake Bay, farmers profit from fertile soils, and residents live near waterways, forests, rural landscapes, and waterfront vistas. Preserving these resources is a local priority and a future development consideration. Population growth and land development that do not consider these resources may have the following impacts:

- Plant and wildlife habitat loss
- Groundwater contamination
- Saltwater intrusion
- Surface water quality degradation
- Limited groundwater recharge and availability
- Natural drainage system disruption
- Air pollution
- Increased solid waste
- Visual quality loss

Detrimental development patterns can be identified and mitigated by encouraging growth in appropriate areas and ensuring that new development is designed and constructed with respect to existing resources. Areas of the County more susceptible to environmental degradation should be identified for limited development with more intense development guided towards regions with less severe potential for impacts. The County's Development District along with local ordinances, such as the Zoning, Erosion and Sediment Control, Chesapeake Bay Preservation, and Storm Water Ordinances, and state and federal regulations, establish the framework to encourage future growth in a responsible manner.

Legal Framework

State Code requires that Comprehensive Plans address specific environmental issues and recommends designating areas for agricultural uses, mineral resources, floodplains, and groundwater protection

measures.¹ Plans must also include data on various conditions, including land use, agricultural and forested land preservation, natural resources, ground and surface waters, geologic and environmental factors, drainage, and flood control.

The Chesapeake Bay Preservation Act and related regulations address environmental concerns regarding state waterway quality, which should be incorporated into local Plans and Zoning, Subdivision Ordinances and other ordinances.² This Act includes Chesapeake Bay Preservation Area Designation and Management Regulations that specify local program elements, including:³

1. A map delineating Chesapeake Bay Preservation Areas (CBPA's)
2. Performance criteria for developments within CBPA's
3. A Comprehensive Plan incorporating water quality preservation for state waters adjacent to CBPA's
4. Zoning, Subdivision, Erosion and Sediment Control (E&S), and other Ordinances (or revisions to the E&S Ordinance) that incorporate measures consistent with state regulations
5. A building permitting process assuring development within CBPA's comply with local and state requirements

Comprehensive Plans also are required to contain data and analysis, policy discussions, maps, and state and local implementation measures to meet water quality goals, with specific topics including the CBPA location and extent, development constraints, fisheries and other aquatic resources, shoreline and streambank erosion issues, land use, existing and potential water pollution sources, public and private waterfront access, water quality mitigation measures for development impacts, and practices to improve water quality during redevelopment.

In 2011, the General Assembly passed legislation establishing "living shorelines" as Virginia's preferred shoreline management alternative for erosion control

and water quality protection. This action required the Virginia Marine Resources Commission (VMRC) to develop and implement a general permit authorizing and encouraging living shoreline use as the preferred alternative for stabilizing Virginia's tidal shorelines and instructed the Virginia Institute of Marine Science (VIMS) to establish local comprehensive coastal resource management guidance (completed in 2013),⁴ with Comprehensive Plans (and subsequent updates) featuring these guiding principles.⁵ Guidance for Gloucester County has been generated and is available through VIMS's Comprehensive Coastal Resource Management Portal.⁶

Existing Conditions and Trends

Location

Annual weather conditions are influenced by Gloucester's proximity to the Chesapeake Bay and Atlantic Ocean, which produce mild winters and warm, humid summers. National Weather Service (NWS) data indicates that the average annual local temperature is between 57°F and 59°F, with January featuring the coldest temperatures and July having the warmest, and average annual rainfall totaling 45 inches equally distributed throughout the year.

The National Climatic Data Center (NCDC) reports that frequent weather events include thunderstorms, severe lightning, high winds, and flash flooding and severe weather occurring as northeasters, tropical storms, and hurricanes that producing heavy rain, high winds, and tidal flooding. Hurricane Isabel (September 18, 2003) and an April 2011 tornado have been the most significant recent weather events, with flooding from Hurricane Isabel's storm surge uprooting trees and causing extensive property damage. The April 2011 tornado also damaged homes and other facilities, including Page Middle School, resulting in three (3) fatalities. Other storms, such

1 Code of Virginia §15.2-2223

2 Code of Virginia §62.1-44.15:6

3 9VAC25-830

4 Code of Virginia §28.2-104.1

5 Code of Virginia §15.2-2223.2

6 <http://ccrm.vims.edu/ccrmp/gloucester/>



2009 Nor'easter flooding in the Guinea area of Gloucester - Source: Gloucester Planning and Zoning

as the November 2009 Nor'easter have also produced local flooding.

Soils

A Countywide soil survey, available through the Natural Resources Conservation Service (NRCS), a division of the U.S. Department of Agriculture,⁷ identifies that local soils are formed from sediments such as sand, gravel, and silt, at varying degrees throughout Gloucester. The NRCS classifies soils taxonomy through six (6) levels: orders, suborders, great groups, subgroups, families, and series, with the County's soil types falling under five (5) soil orders: histosols, ultisols, alfisols, inceptisols, and entisols. Histosols, composed of decomposed organic matter, are often found in wetlands or bogs. Ultisols and Alfisols are forest soils that can support agriculture, with Ultisols having a low mineral content and Alfisols consisting of a high mineral content. Inceptisols are

relatively undeveloped soils and Entisols are the most undeveloped, containing unconsolidated material.⁸ Specific soil types cataloged by the NRCS are described in Table NR-1 and shown on Map NR-1.

Soils suitability is evaluated for agricultural uses and conventional septic systems, with deep, well-drained, permeable soils commonly found west of Route 3/14 and U.S. 17 (south of the Court House), where most agricultural and forested lands are located. East of Route 3/14 and U.S. 17 (south of the Court House), the County contains lower elevations and soils with drainage issues due to their high clay content, restricting water filtration and limiting other uses. Soils suitable for agriculture, as shown on Map NR-2, are also typically compatible for conventional septic systems and highly permeable soils, unsuitable for conventional septic drainfields, are shown on Map NR-3. These classifications help identify areas that present favorable development conditions.

As shown in Map NR-4, most soils in the County's southeastern region are classified as hydric, where

⁷ This data can be viewed online through the NRCS Web Soil Survey Tool at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

⁸ <http://soils.cals.uidaho.edu/soilorders/index.htm>

Table NR-1: Soil Types

Soil Name	Order	Description
Alaga	Entisols	The Alaga series consists of very deep, excessively drained, rapidly permeable soils on the Coastal Plain's uplands, non-flooding streams, and marine terraces. These soils consist of loamy sand and formed in sandy marine or fluvial sediments.
Caroline	Ultisols	The Caroline series consists of very deep, well drained soils with moderately slow or slow permeability on the Coastal Plain's marine terraces. These soils contain loam, clay, and sandy clay loam and formed in clayey, fluvial, and marine sediments.
Craven	Ultisols	The Craven series consists of very deep, moderately well drained soils with slow permeability found on the Coastal Plain's marine terraces and uplands. These soils contain silt loam, clay, and sandy clay loam and formed in marine deposits.
Dogue	Ultisols	The Dogue series consists of very deep, moderately well drained soils with moderately slow permeability found on the Coastal Plain's stream terraces. These soils contain fine sandy loam, clay loam, and sandy loam and formed from marine deposits.
Emporia	Ultisols	The Emporia series consists of very deep, well drained soils with moderately slow to slow permeability found on the Coastal Plain's marine terraces and uplands. These soils contain sandy loam, clay loam, and sandy clay loam and formed from marine deposits.
Eunola	Ultisols	The Eunola series consists of very deep, moderately well drained soils with moderate permeability found on the Coastal Plain's low streams and marine terraces. These soils contain fine sandy loam and sandy clay loam and formed in fluvial or marine sediments.
Fluvaquents	Entisols	The Fluvaquents series consists of very deep, poorly drained soils with moderate permeability found on the Coastal Plain's floodplains. These soils contain loam, sandy clay loam, and gravelly sand and formed from alluvium.
Fluvaquents, Saline	Entisols	The Saline Fluvaquents series consists of very deep, poorly drained soils with moderate permeability found on the Coastal Plain's floodplains. These soils contain very fine and fine sandy loam and formed from alluvium.
Hapludults	Ultisols	The Hapludults series consists of very deep, moderately well drained soils with moderately slow permeability found on the Coastal Plain's marine terraces. These soils contain fine sandy loam and sandy loam and formed from marine deposits.
Haplaquepts	Inceptisols	The Haplaquepts series consists of very deep, somewhat poorly drained soils with moderately rapid permeability found on the Coastal Plain's flats. These soils contain loam, sandy loam, and loamy sand and formed from marine deposits.
Johns	Ultisols	The Johns series consists of very deep, moderately well drained soils with moderate permeability found on the Middle or Upper Coastal Plain's stream terraces and river valleys. These soils contain sandy loam, sandy clay loam, and loamy sand and formed from alluvium or fluviomarine deposits.
Kalmia	Ultisols	The Kalmia series consists of very deep, well drained soils with moderate permeability found on the Coastal Plain's stream terraces and river valleys. These soils contain sandy loam, sandy clay loam, and loamy sand and formed from marine deposits.
Kempsville	Ultisols	The Kempsville series consists of very deep, well drained soils with moderate permeability found on the upper Coastal Plain. These soils contain fine sandy loam, sandy clay loam, and stratified sandy loam and formed in loamy sediments.
Kenansville	Ultisols	The Kenansville series consists of very deep, well drained soils with moderately rapid permeability found on the Coastal Plain's uplands and stream terraces. These soils contain loamy fine sand, sandy loam, and loamy sand and formed in marine and fluvial sediments.

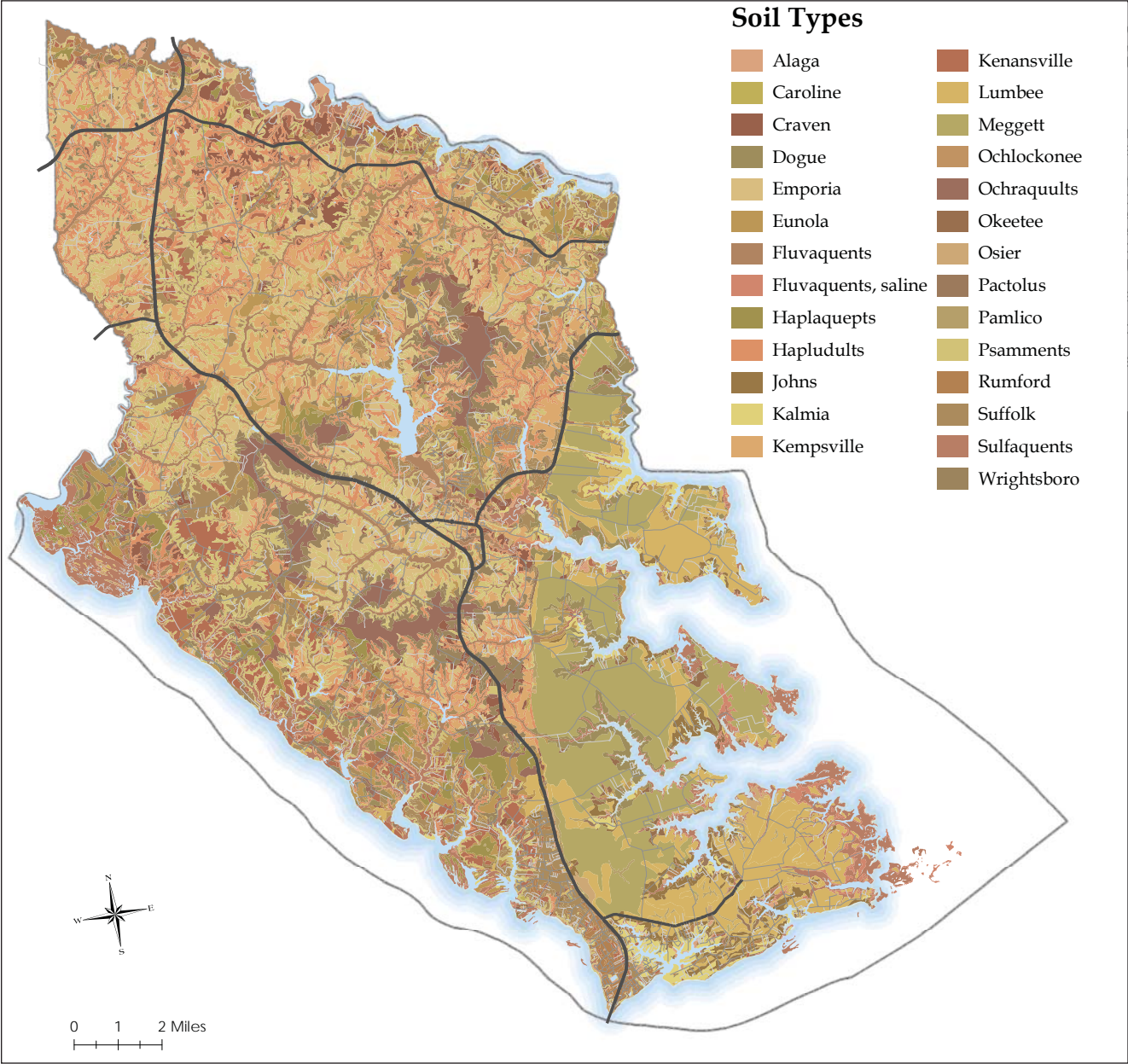
Source: Natural Resources Conservation Service, U.S Department of Agriculture

Table NR-1: Soil Types (Continued)

Soil Name	Order	Description
Lumbee	Ultisols	The Lumbee series consists of very deep, poorly drained soils with moderate permeability found on the Coastal Plain's stream terraces, flats, and river valleys. These soils contain sandy loam, sandy clay loam, and sand and formed from marine deposits.
Meggett	Alfisols	The Meggett series consists of very deep, poorly drained soils with slow permeability found on the Coastal Plain's marine terraces. These soils contain sandy loam, sandy clay, and very gravelly sandy loam and formed from marine deposits.
Ochlockonee	Entisols	The Ochlockonee series consists of very deep, well drained soils with moderately rapid permeability found on the Coastal Plain. These soils contain sandy loam, stratified loamy sand, and stratified sandy clay loam and formed from marine deposits.
Ochraquults	Ultisols	The Ochraquults series consists of very deep, poorly drained soils with moderate permeability found on the Coastal Plain's flats. These soils contain fine sandy loam and loam and formed from marine deposits.
Okeetee	Alfisols	The Okeetee series consists of very deep, somewhat poorly drained soils with very slow to slow permeability found on the Coastal Plain's marine terraces, stream terraces, and river valleys. These soils consist of sandy loam and sandy clay and formed from marine deposits.
Osier	Entisols	The Osier series consists of very deep, poorly drained soils with rapid permeability found on the Coastal Plain's floodplains and low stream terraces. These soils contain loamy fine sand and formed from marine deposits.
Pactolus	Entisols	The Pactolus series consists of very deep, moderately well drained soils with rapid permeability found on the Coastal Plain's marine terraces. These soils contain loamy sand and formed from marine deposits.
Pamlico	Histosols	The Pamlico series consists of very deep, very poorly drained soils with moderate to moderately rapid permeability found on the Coastal Plain's depressions. These soils contain muck and sand and formed from organic material.
Portsmouth	Ultisols	The Portsmouth series consists of very deep, very poorly drained soils with moderate permeability found on the Coastal Plain's depressions. These soils contain loam, silt loam, and stratified loamy sand and formed from marine deposits.
Psammments	Entisols	The Psammments series consists of very deep, moderately well drained soils with rapid permeability found on the Coastal Plain's marine terraces. These soils contain fine sand and sand and formed from marine deposits.
Rumford	Ultisols	The Rumford series consists of very deep, well drained soils with moderately rapid permeability found on the Coastal Plain's marine terraces. These soils contain loamy fine sand, fine sandy loam, and stratified fine sand and formed from marine deposits.
Suffolk	Ultisols	The Suffolk series consists of very deep, well drained soils with moderate permeability found on the Coastal Plain's marine terraces. These soils contain fine sandy loam, sandy clay loam, and loamy sand and formed from marine deposits.
Sulfaquents	Entisols	The Sulfaquents series consists of very deep, very poorly drained soils with very slow to slow permeability found on the Coastal Plain's salt marshes. These soils contain mucky silty clay loam and mucky silty clay.
Wrightsboro	Ultisols	The Wrightsboro series consists of very deep, moderately well drained soils with moderate permeability found on the Coastal Plain's stream terraces. These soils contain fine sandy loam and sandy clay loam and formed from marine deposits.

Source: Natural Resources Conservation Service, U.S Department of Agriculture

Map NR-1: Soil Types



Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS) evaluates and classifies soils for common uses (agriculture, development, etc.). Areas are assessed based upon their soil composition, such as clay, silt, sand, and parent materials (marine deposits), and location, including uplands, floodplains, or marine terraces. Soil slopes, bedrock depths to bedrock or other restrictive features, drainage capacity, permeability, and water table depth are other documented properties. Soil characteristics determine the area's utility (appropriateness), for agriculture, sanitary facilities, construction, recreation, and other uses. Gloucester contains many different soil types, with most formed from marine deposits. Soil types are discussed on pages 123-127.

inundation occurs for periods of time, creating anaerobic conditions. Additionally, hydric soils are found along some County streams, rivers, and wetlands, which have high water tables, poor drainage, and are typically subject to flooding and unsuitable for development or traditional septic systems.

Residential and commercial development in southeastern Gloucester, where soils present unfavorable conditions, generally occurred prior to current state and local environmental and land use ordinance establishment and future incompatible development may present wastewater and groundwater quality issues, discussed in greater detail later in this chapter. Previous Comprehensive Plans outlined the general characteristics of the Bayside and Resource Conservation Districts (as identified in the Plan's Future Land Use chapter), which containing large areas with soils unsuitable for traditional septic system use and unfavorable conditions for high density or commercial development.

Slopes

Although development is not encouraged where slopes exceed 15%, Gloucester does not prohibit building on steep slopes. As the County is relatively flat, most

steep slopes are located along streams and other water bodies, as shown on Map NR-5.

Prime Farmland

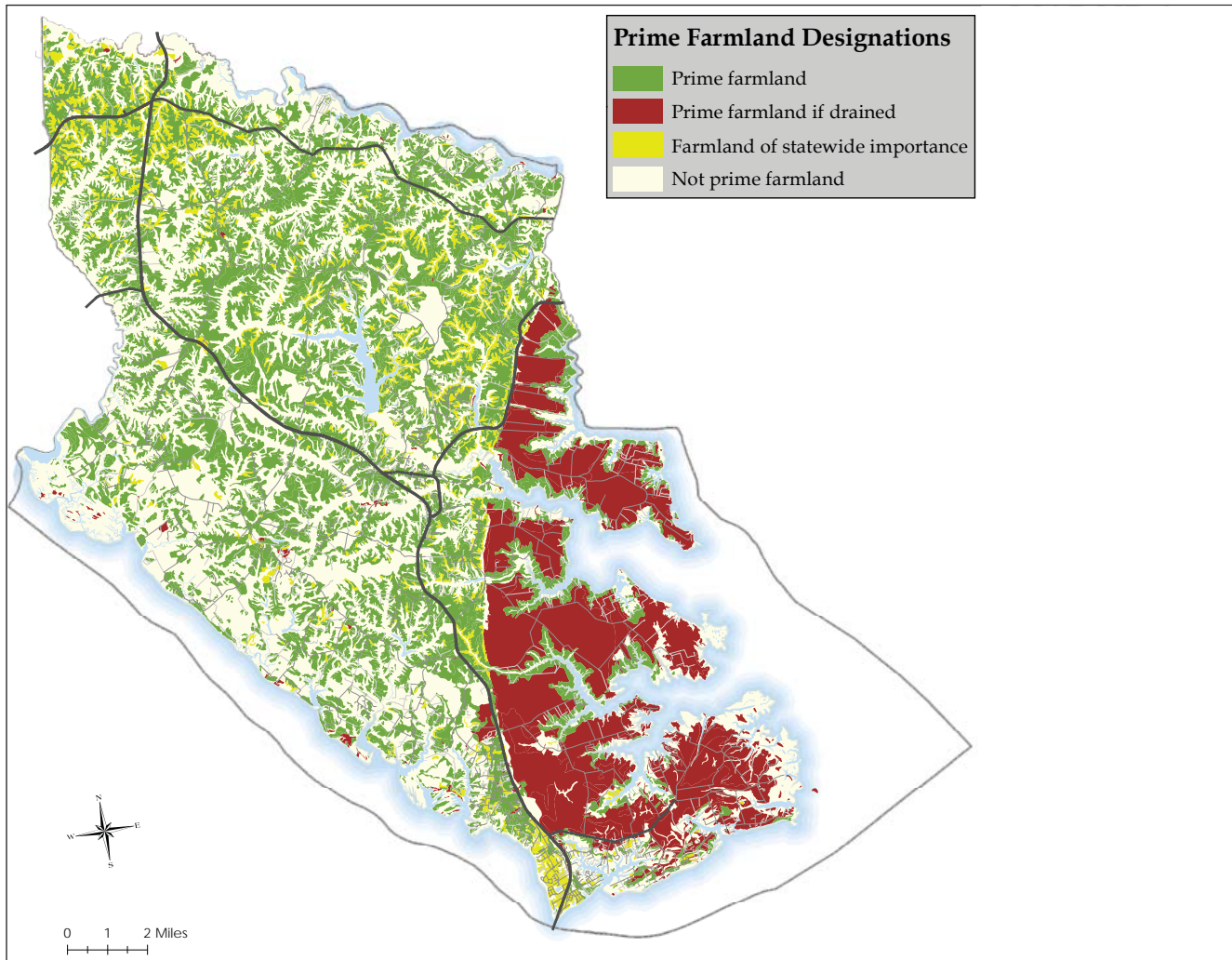
Agriculture is an important local historic and economic component and identifying prime farmland assists in preserving areas for agricultural uses. The County contains over 53,000 acres of prime farmland, roughly 7,500 acres of farmland of statewide importance, and more than 22,000 acres of land considered prime farmland if properly drained,⁹ with farmland classified based upon its potential agricultural productivity. Prime farmland, defined by the NRCS and shown on Map NR-2, is the best agricultural land due to climate, location, physical and chemical properties, available water supply, permeability, and erosion potential. Farmland of statewide importance, a state standard, is not considered prime farmland but still suitable for agriculture or land and requires additional treatment to produce high yields. Prime soils for agriculture and forestry should be considered in future land use planning.

⁹ Soil Survey for Gloucester County, Virginia. Natural Resource Conservation Service. 2013.



Farm located on Fletcher Road - Source: Gloucester Planning and Zoning

Map NR-2: Prime Farmland



Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

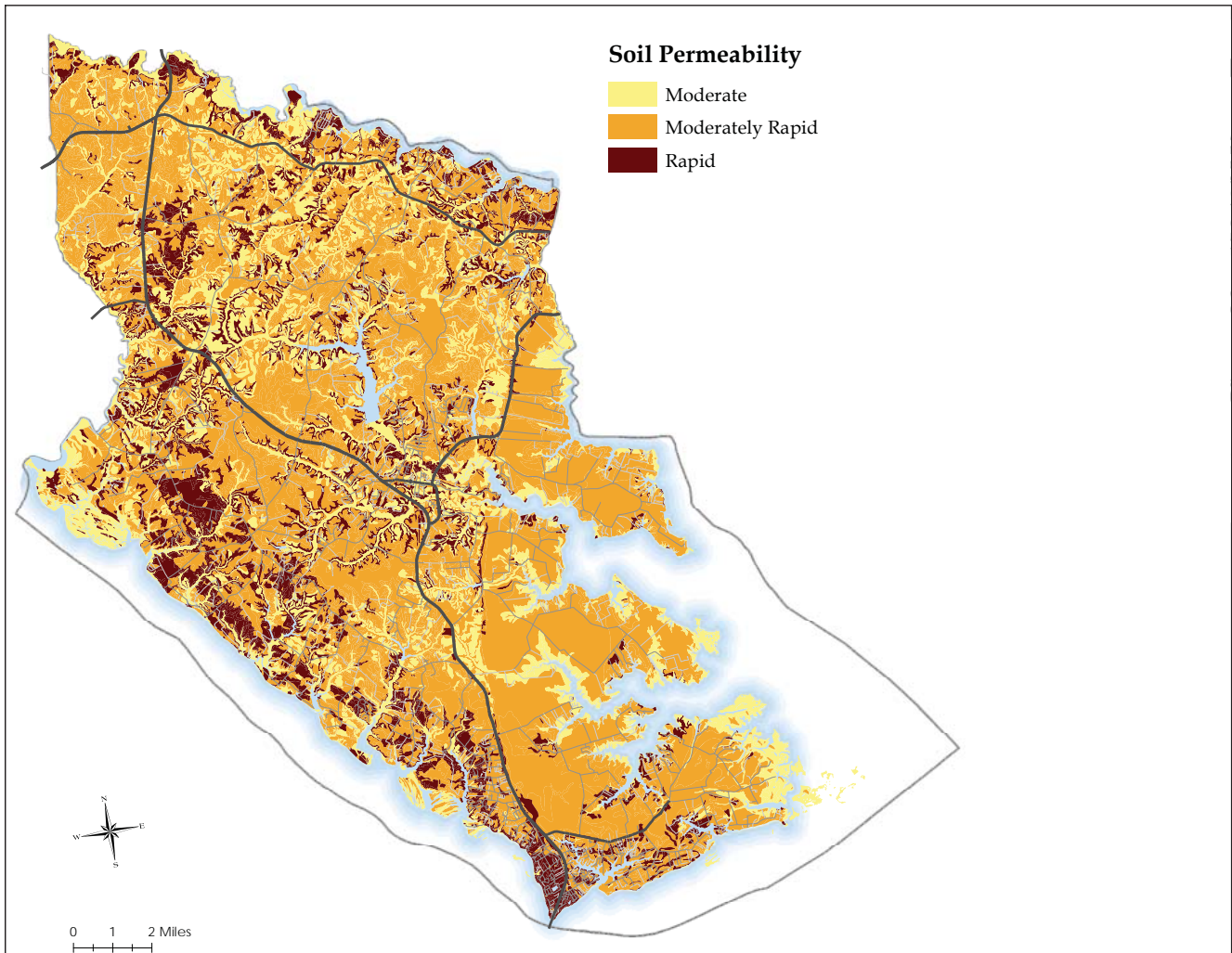
The Natural Resources Conservation Service (NRCS) identifies appropriate farming lands through its soil surveys. The NRCS classifies farmland based on its potential agricultural productivity:

- **Prime farmland** is excellent for agricultural use due to climate, location, physical and chemical properties, available water supply, permeability, and erosion potential.
- **Farmland of statewide importance** is acceptable for agricultural uses, but may require additional treatment for high agricultural yields. Farmland of statewide importance criteria is established by each state, while prime farmland meets national standards.

Gloucester contains over 53,000 acres of prime farmland, more than 22,000 acres of land considered prime farmland if properly drained, and roughly 7,500 acres of farmland of statewide importance. Much of the County's prime farmland is in areas that have been developed for another use.

Prime farmland is discussed in greater detail on page 127.

Map NR-3: Permeable Soils



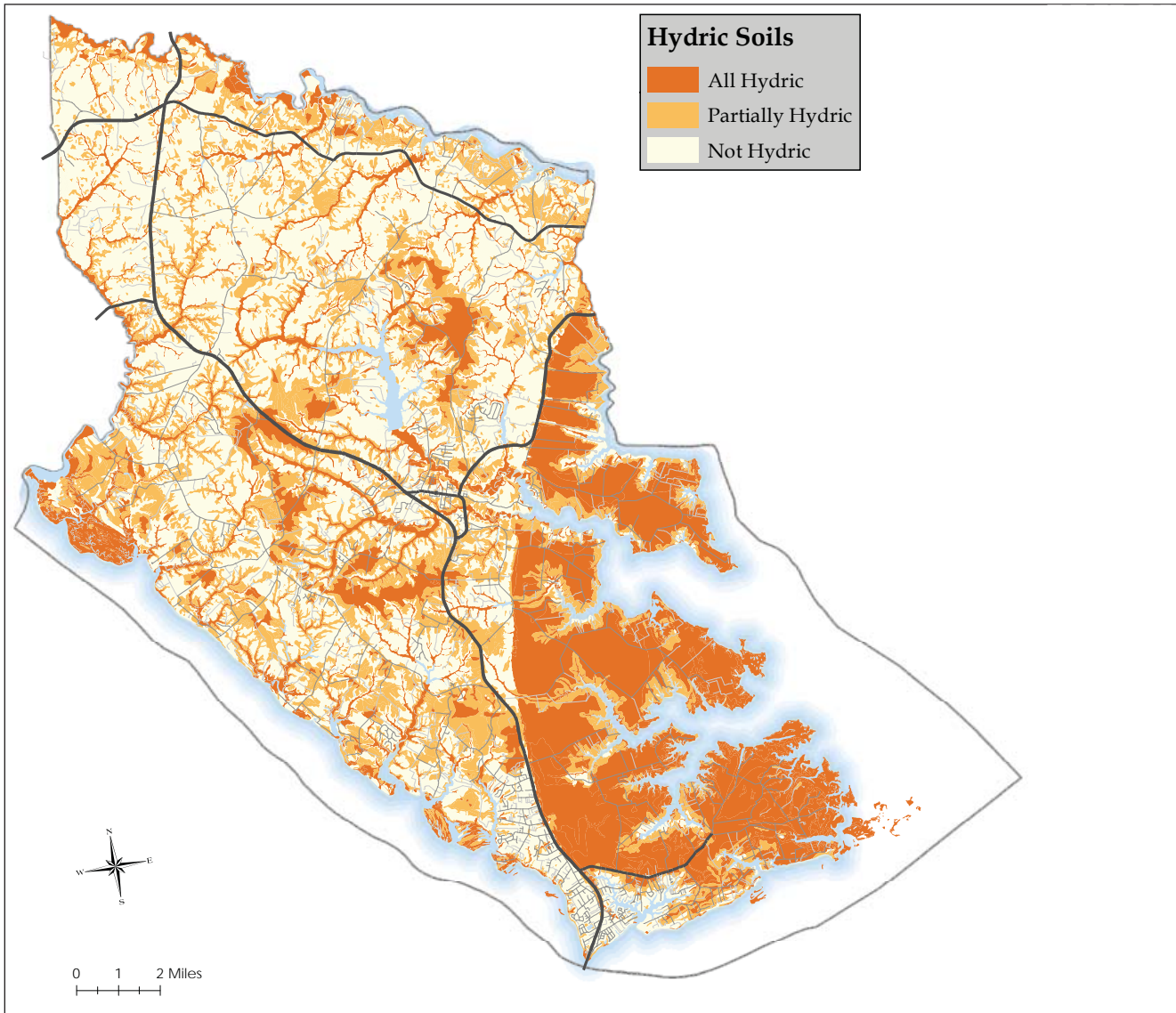
Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS) classifies soils by their saturated hydraulic conductivity or ability to transmit air or water (permeability). Hydraulic conductivity evaluates the rate which water moves through soil, measured in micrometers per second. Highly permeable soils are appropriate and useful for low impact development (LID) stormwater management practices since they allow runoff to infiltrate into the ground and can serve as a buffer between waterways and development, but construction may require alternative septic systems. Soil permeability is a consideration for determining hydric soils and prime farmland.

- **Moderate permeable soils** have a saturated hydraulic conductivity rate of 4 - 14 micrometers/second (0.6-2.0 inches/hour).
- **Moderately rapid permeable soils** have a saturated hydraulic conductivity rate of 14 - 42 micrometers/second (2.0-6.0 inches/hour).
- **Rapidly permeable soils** have a saturated hydraulic conductivity rate of 42 - 141 micrometers/second (6.0-20.0 inches/hour).

Soil permeability is discussed on pages 123-127.

Map NR-4: Hydric Soils



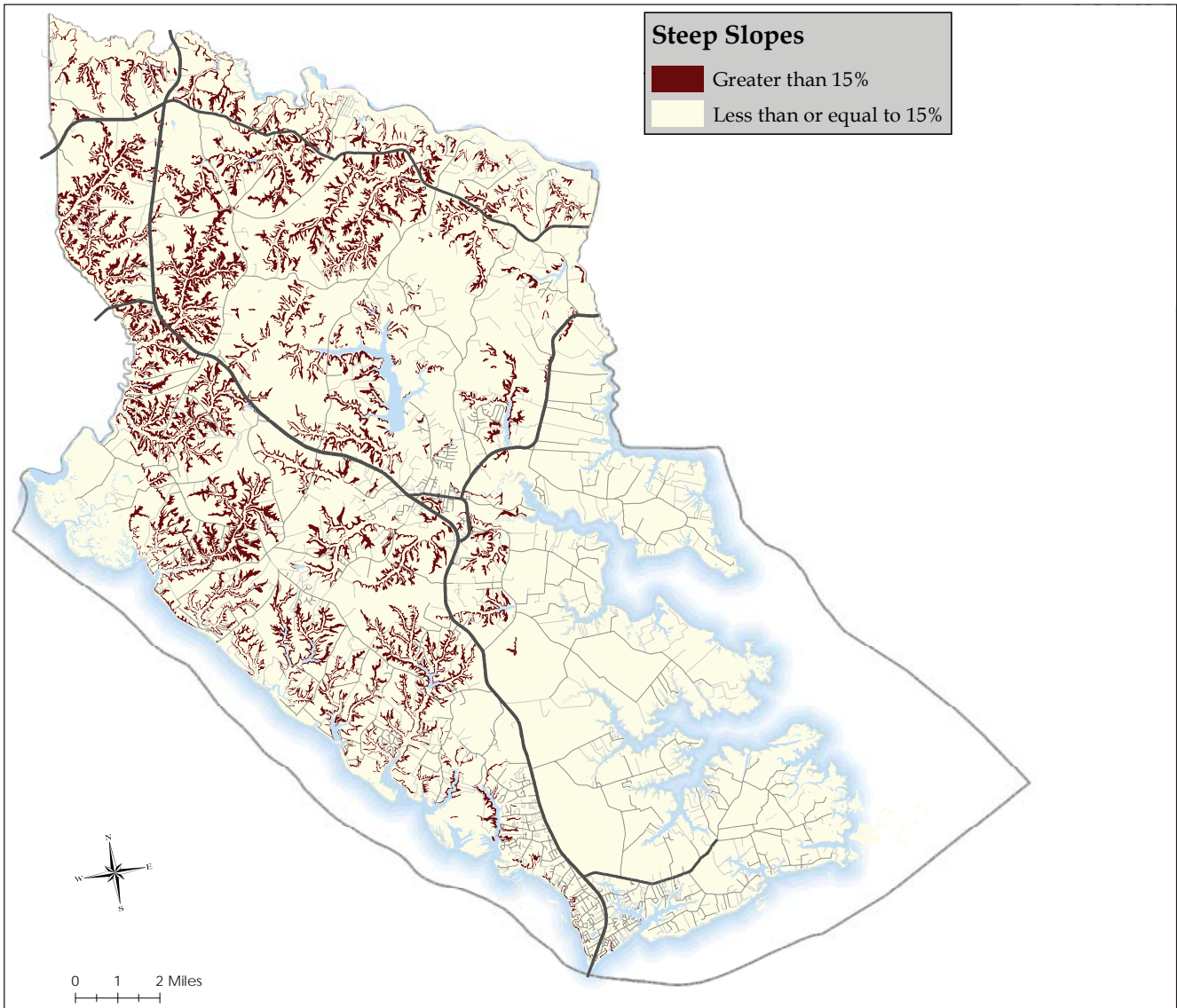
Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS) identifies hydric soils through its soil surveys, characterizing map units by soil type. According to the NRCS, hydric soils form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. These soils are typically saturated long enough for hydrophytic vegetation to grow and reproduce. County soils are characterized as all hydric, partially hydric, or not hydric.

- **All hydric** regions have only hydric soil components or types within the area.
- **Partially hydric** regions have at least one hydric and one non-hydric soil component.
- **Not hydric** regions have only non-hydric soil components.

Hydric soils are indicators of potential wetlands and may limit development and conventional septic system installation. Hydric soils are discussed on pages 123-127.

Map NR-5: Steep Slopes

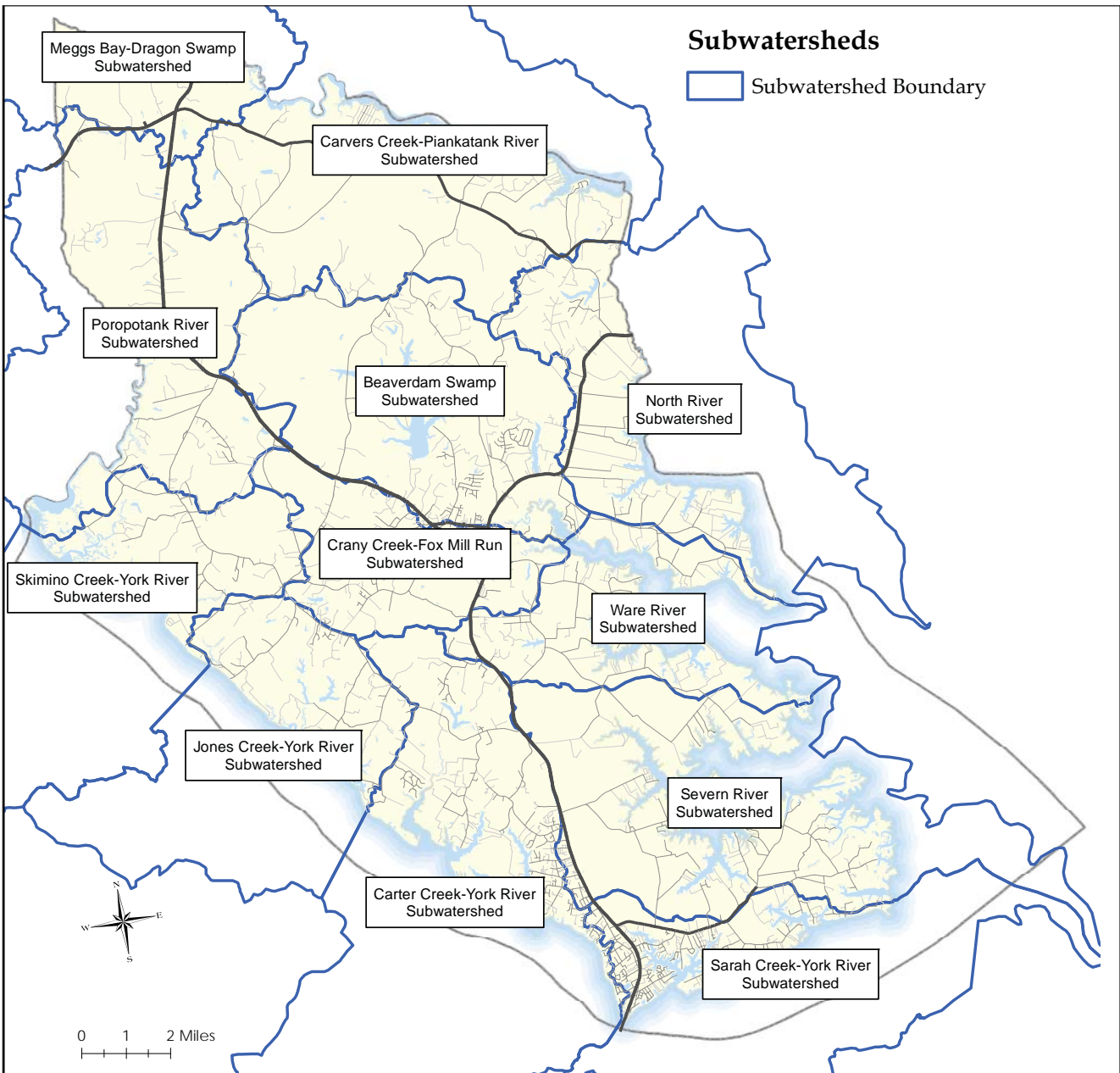


Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS) also characterizes soil type by slope. Each soil type (component) has an associated slope range, described by low, representative, and high values. Representative slopes are the “expected” value for a given soil type. Generally, slopes over 15% may present development challenges.

Slope is discussed on page 127.

Map NR-6: Subwatersheds



Data Source: US Geological Survey

A watershed is an area of land where all water, sediments, nutrients, and other dissolved materials drain into a common outlet. As there are many watershed sizes, the U.S. Geological Survey (USGS) classifies them by six (6) hydrological unit levels, ranging from large regions to much smaller subwatersheds. Watershed health may impact water quality, erosion and flood control, and environmental quality.

Watersheds are discussed on page 133.

Watersheds and Drainage

Watersheds are areas where all water, sediments, nutrients, and other dissolved materials drain into a common outlet. When precipitation occurs, water runs

Regions, the largest watershed unit, average 177,560 square miles. The United States (including Alaska, Hawaii, and U.S. possessions or interests in the Caribbean Sea) has 21 Regions, with Gloucester lying in the Mid-Atlantic Region.

Sub-regions, the second-largest watershed unit, average 16,800 square miles. The U.S. has 222 Sub-regions, with the County lying in the Lower Chesapeake Subregion.

Basins, the third-largest watershed unit, average 10,596 square miles. The U.S. has 352 Basins, with Gloucester lying in the Lower Chesapeake Basin.

Sub-basins, the third-smallest watershed unit, average 703 square miles. The U.S. has 2,149 Sub-Basins, with the County containing the Great Wicomico-Piankatank, Lower Chesapeake Bay, and York Sub-Basins.

Watersheds, the second-smallest watershed unit, range from 40,000 to 250,000 acres. The U.S. has approximately 22,000 Watersheds, with Gloucester containing the Dragon Swamp, Lower York River, Mobjack Bay-Lower Chesapeake Bay, Piankatank River-Lower Chesapeake Bay, and Upper York River Watersheds.

Subwatersheds, the smallest watershed unit, range from 10,000 to 40,000 acres. The U.S. has approximately 160,000 Subwatersheds, with the County containing the Beaverdam Swamp, Carter Creek-York River, Carvers Creek-Piankatank River, Crany Creek-Fox Mill Run, Jones Creek-York River, Meggs Bay-Dragon Swamp, North River, Poropotank River, Sarah Creek-York River, Severn River, Skimino Creek-York River, and Ware River Subwatersheds.

to the lowest point, typically a stream, river, or lake, and, eventually, to the ocean. The County lies entirely within the Chesapeake Bay Watershed, which includes parts of six (6) states (Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia) as well as the District of Columbia. This watershed eventually drains to major rivers and significant development impacts can affect regional water quality.

Effective flood control, fresh water protection, water quality preservation, and erosion and sedimentation control are important throughout the watershed. Local runoff drains to the York, Piankatank, North, Ware, and Severn rivers and their tributaries, as identified in Table NR-2. The County's subwatersheds (Hydrologic Unit Code 12), as cataloged by the United States Geological Survey (USGS), are shown on Map NR-6.

Sources of Potable Water and Water Use

Current water use is a product of local geography, water needs, transportation demands, social and economic forces, and development patterns. Water resources and the natural environment adjacent to these resources are important components of the community's physical and economic health and can be impacted by development.

Gloucester began providing public water service from the Beaverdam Reservoir, located north of Gloucester Court House and surrounded by low density zoning with two (2) to five (5) acre minimum lot sizes, and associated water treatment plant in July 1990. Beaverdam Park consists of a buffer surrounding the reservoir and hosts various recreational activities, such as fishing, boating, nature study, picnics, hiking, bicycling, and horseback riding with reservoir algae counts monitored weekly. A survey is conducted every three (3) years to evaluate development around the reservoir and the existing buffer and neighboring low density zoning are the primary water quality preservation measures. If deemed necessary, the County may consider other strategies should water quality be threatened. In addition to the reservoir,

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Gloucester also has two (2) deep wells supplying water from underground aquifers. Further water supply details can be found in the Plan's Community Facilities chapter.

Regional Water Supply Planning

In 2007, six (6) counties, ten (10) cities, eight (8) towns, and the Hampton Roads Planning District Commission (HRPDC) signed a Memorandum of Agreement to

develop the Hampton Roads Regional Water Supply Plan, which was accepted by the HRPDC, authorized for distribution for local adoption in July 2011, and adopted by the County's Board of Supervisors in August 2011. The regional plan assists local efforts to meet state water supply planning requirements aiming to ensure that adequate and safe drinking water is available, encourage, promote, and protect other beneficial water resource uses, and encourage, promote, and develop alternative water source incentives. The regional plan addresses the existing water supply,

Table NR-2: Gloucester County Streams

Stream Name	Drainage Area (Sq. Miles)	Length (Miles)	Elevation at Source (Feet)	Elevation at Mouth (Feet)	Mouth in County
Sandy Creek	0.94	2.0	42	0	Gloucester
Jones Creek	4.37	3.9	93	0	Gloucester
Aberdeen Creek	3.26	3.4	84	0	Gloucester
Carter Creek	8.51	6.4	90	0	Gloucester
Cedarbush Creek	2.57	3.7	61	0	Gloucester
Timberneck Creek	3.83	4.1	62	0	Gloucester
Sarah Creek	5.22	0.3	0	0	Gloucester
Northwest Branch	2.96	2.5	11	0	Gloucester
Northeast Branch	2.16	2.3	7	0	Gloucester
Poropotank River	39.19	15.6	123	0	King & Queen, Gloucester
Unnamed Stream	2.44	3.3	135	0	King & Queen, Gloucester
Woods Mill Swamp	4.92	4.6	131	0	King & Queen, Gloucester
Poplar Spring Branch	6.26	4.6	107	0	King & Queen, Gloucester
Adams Creek	2.87	4.5	100	0	Gloucester
Purtan Creek	1.47	2.9	101	0	Gloucester
Leigh Creek	1.40	2.2	100	0	Gloucester
Bland Creek	5.74	4.7	102	0	Gloucester
Fox Creek	2.92	1.7	52	0	Gloucester

Source: Gloucester County



Beaverdam Reservoir at Beaverdam Park - Source: Gloucester Parks, Recreation & Tourism

projects future water needs and alternatives, and provides water demand management information and drought response plans. All participating localities have adopted this plan and a copy has been submitted to the Department of Environmental Quality (DEQ).

Groundwater Framework

The County is located within the Virginia Coastal Plain Physiographic Province, which extends from the Fall Line (west of Gloucester) to the Atlantic Ocean and ranges as far north as the Maryland border and as far south as the North Carolina border. The Virginia Coastal Plain's surface consists of multiple broad, gently sloping, highly dissected, north-south trending terraces bounded by seaward facing, ocean cut escarpments. The Plain's subsurface is characterized by wedge-shaped, unconsolidated sedimentary deposits sloping and thickening towards the east at depths of 0 feet at the western edge to over 6,000 feet along the Atlantic coast.¹⁰ These deposits contain clay, silt, sand, gravel, and some shell material overlaying a

bedrock basement of igneous and metamorphic rocks sloping gently to the east.

Many depositional environments existed during the Virginia Coastal Plain's deposit formation. The stratigraphic section (vertical profile) generally consists of a thick sequence of non-marine (riverine and alluvial) sedimentary deposits overlaid by a thinner sequence of marine (near shore beach, estuarine, and delta) sedimentary deposits. Beneath Gloucester, there also exists breccia type sedimentary deposits resulting from the Chesapeake Bay Impact Crater, as shown on Map NR-7.

The Virginia Coastal Plain's groundwater flow system contains multiple aquifers, with the most recent hydrogeologic study completed in 2006,¹¹ revealing eight (8) water-bearing hydrogeologic units (aquifers) and eleven (11) less permeable units that restrict groundwater flow (confining zones and units). The aquifers and confining units are stacked on top of each other, often alternating, causing eastwardly lateral aquifer flow toward large withdrawal discharge areas near large rivers and the Atlantic Coast. However, the

¹⁰ The Virginia Coastal Plain Hydrogeologic Framework

¹¹ The Virginia Coastal Plain Hydrogeologic Framework

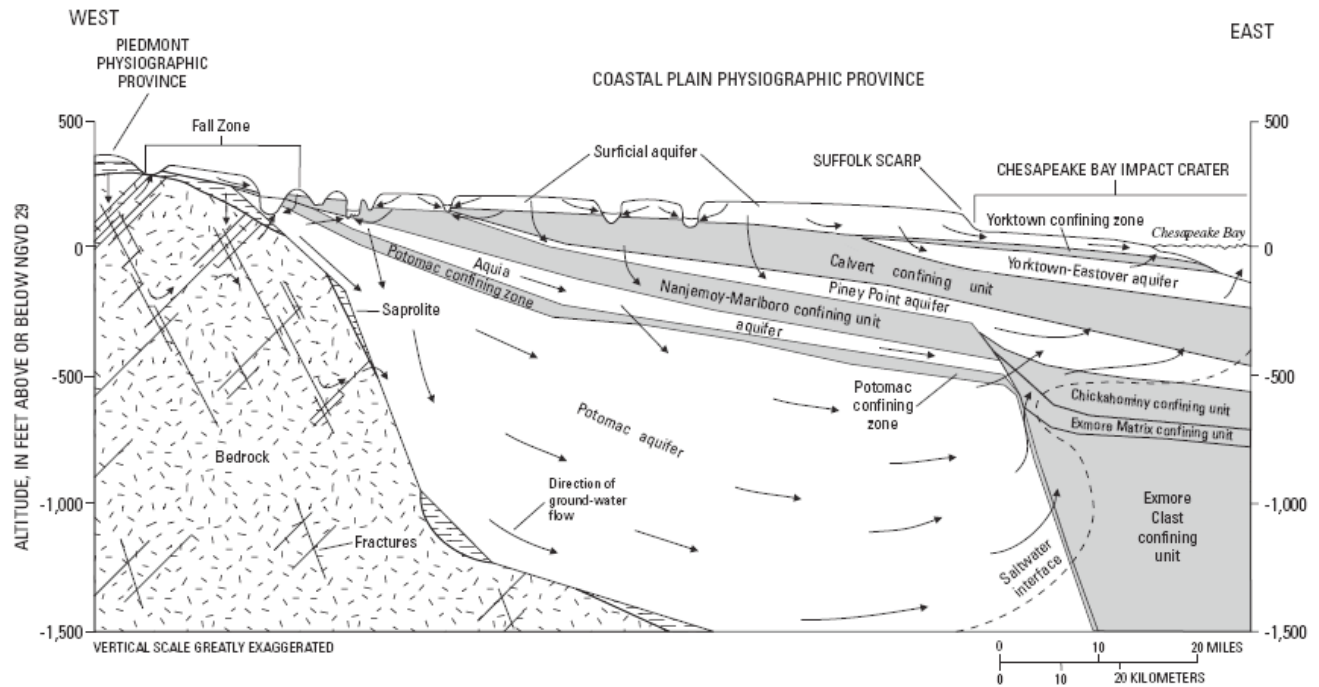
Map NR-7: Chesapeake Bay Impact Crater



Data Source: U.S. Geological Survey

The Chesapeake Bay Impact Crater formed over 35 million years ago by an asteroid or comet collision near the mouth of the Chesapeake Bay, creating a depression over 50 miles in diameter. The crater influences the region's hydrology, groundwater, deepwater aquifers, and vulnerability to potential subsidence and sea level rise.

The Chesapeake Bay Impact Crater is discussed on pages 135-136.

Figure NR-1: Hydrogeology of the Coastal Plain of Virginia

Source: *The Virginia Coastal Plain Hydrologic Framework*

flow pattern is disrupted by the Chesapeake Bay Impact Crater, formed by an asteroid or comet collision with the Chesapeake Bay over 35 million years ago, creating a crater over 50 miles in diameter and destroying the deepest aquifers. As a result, various materials rushed into the crater, producing a layer of sediments (breccia) differing from the non-marine sediments present before the impact.

As illustrated in Figure NR-1, the groundwater system beneath Gloucester contains five (5) aquifers and five (5) confining units. The Columbia Aquifer, also called the Surficial Aquifer, is the water table aquifer throughout most of Gloucester. In some areas, the Columbia Aquifer and underlying confining unit have been split by the Bay, with the Yorktown-Eastover Aquifer as the water table aquifer, whereas in other areas of the County, the Yorktown-Eastover Aquifer is a confined aquifer covered by the Yorktown-Eastover Confining Unit. The Piney Point, Aquia, and Potomac Aquifers are deeper confined aquifers separated from other aquifers lying above and below them by confining

beds. The northwest portion of the Chesapeake Bay Impact Crater covers southern Gloucester where the Aquia and Potomac Aquifers previously existed prior to the crater impact and have been replaced by breccia sedimentation with low conductivity and stagnant saltwater in its pores, causing regional groundwater to diverge and flow around the crater rim. The Piney Point Aquifer, created after the crater impact, is located throughout the County. These aquifers are further described below from youngest (top) to oldest (bottom).

Columbia Aquifer

The Columbia Aquifer, the uppermost aquifer, is unconfined throughout its extent and consists of sand and gravel. This aquifer is primarily used for domestic water supplies (drinking water and irrigation) and has historically been an important water source due to its shallow, easily accessible nature. However, it is

susceptible to drought and contamination, making it less reliable than confined aquifers. In favorable conditions, wells may yield ten (10) gallons per minute or greater.¹²

Yorktown-Eastover Aquifer

The Yorktown-Eastover Aquifer, separated from the Columbia Aquifer by the Yorktown Confining Zone, consists of sand and interbedded silt. The confining zone leaks more than a confining unit and, in some areas, the Yorktown Confining Zone may function as an aquifer. In cross section, the Yorktown-Eastover Aquifer is wedge-shaped, sloping and thickening eastwardly, and in Gloucester, the top of the aquifer is between 50 and 75 feet below the ground surface. Numerous wells withdraw water from this aquifer, yielding high-quality water and commonly producing ten (10) to thirty (30) gallons per minute.¹³

Piney Point Aquifer

The Piney Point Aquifer is a homogenous, sandy aquifer extending over the entire County into the impact crater. In Gloucester, the top of this aquifer is between 250 and 400 feet below ground level and wells commonly yield ten (10) to fifty (50) gallons per minute.¹⁴ The Piney Point Aquifer includes two (2) formations, an upper formation rarely used for water supply due to low yields and the prevalence of hydrogen sulfide, and a lower formation that yields water supply. Where this aquifer extends into the crater, sediments containing brackish water do not produce acceptable water supply.

Aquia Aquifer

The Aquia Aquifer, located approximately 400 feet below ground surface in northwest Gloucester, contains medium-to-coarse sands and is less than 50 feet thick. Wells in this aquifer may yield as little

as five (5) gallons per minute or as much as fifty (50) gallons per minute and glauconitic sands may weather and clog well screens, producing poor water quality and potentially brackish water.¹⁵

Potomac Aquifer

The Potomac Aquifer, the Plain's deepest and thickest aquifer, is comprised of sand and gravel with many large clay interbeds. Previous hydrogeologic studies have defined the Potomac Aquifer as three (3) aquifers, but the most recent study has indicated this region as hydraulically continuous with the clay interbeds affecting flow locally. The aquifer's ceiling is roughly 500 feet below ground surface in western Gloucester and over 1000 feet below ground surface in the east. This aquifer is the most heavily used groundwater resource in the Virginia Coastal Plain, with roughly 90% of reported annual withdrawals in 2005. Although major water supply wells in the Plain's central and southeastern regions have yielded 100 to 500 gallons per minute, withdrawals are generally brackish and desalination is required for domestic or industrial use.¹⁶

Groundwater Recharge and Discharge Areas

Groundwater flow in unconfined aquifers typically reflects surface water flow since groundwater flows from higher to lower elevations. Although groundwater recharge, which occurs when rainwater percolates through the ground into the unconfined (water table) aquifer, can occur across almost any upland surface, those with steep slopes are less effective than broad, flat, grassy uplands. Research suggests that some Coastal Plain areas experience groundwater recharge between aquifers when the groundwater hydraulic pressure in one aquifer forces water through a leaking confining unit into an adjacent aquifer,¹⁷ which can transpire upwards or downwards based upon the aquifers' hydraulic properties. Further research

¹² The Virginia Coastal Plain Hydrogeologic Framework

¹³ The Virginia Coastal Plain Hydrogeologic Framework

¹⁴ The Virginia Coastal Plain Hydrogeologic Framework

¹⁵ The Virginia Coastal Plain Hydrogeologic Framework

¹⁶ The Virginia Coastal Plain Hydrogeologic Framework

¹⁷ Hydrogeologic Framework of the Virginia Coastal Plain

may provide greater information on the location and magnitude of recharge between aquifers.

Groundwater discharge areas are located in low-lying areas characterized by rivers, springs, and wetlands with confined aquifers' discharge areas positioned off the coast beneath the Chesapeake Bay or Atlantic Ocean.

Air Quality

As required by the Clean Air Act, the Environmental Protection Agency (EPA) maintains National Ambient Air Quality Standards (NAAQS) for various criteria pollutants, including ozone, carbon monoxide, and particulate matter,¹⁸ which are implemented statewide through the Department of Environmental Quality (DEQ), to protect public health and prevent environmental harm. Regions meeting these standards are identified as attainment areas, whereas those failing to meet these standards are designated as a nonattainment areas, which must develop a State Implementation Plan (SIP) to establish NAAQS compliance and implement transportation conformity requirements. Regional Air Quality Transportation Plans, programs, and projects are analyzed and verified by the EPA to ensure compliance with their Transportation Conformity Rule¹⁹ prior to Federal Highway Administration approval and any changes following approval must be reexamined and reapproved. Transportation conformity and SIP maintenance for 20 years within the maintenance area (as classified by the EPA) is required to demonstrate NAAQS compliance.

Hampton Roads, which includes the counties of Gloucester, Isle of Wight, James City, and York and the cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg, is currently classified as an eight (8) hour ozone maintenance area due to air quality deficiencies resulting from heavy industry and automobile traffic. This region has been reclassified as an attainment area following maintenance plan

development and EPA approval in 2007. Although Gloucester lacks the heavy industry and high traffic levels common throughout the region, open burning limits and potential alternative transportation plans that reduce traffic congestion will positively impact local and regional air quality. These measures alone will not maintain regional attainment, but continued regional efforts and maintenance plan implementation could.

Plants and Animals

Virginia's Division of Natural Heritage (Department of Conservation and Recreation) and Fish and Wildlife Information System (Department of Game and Inland Fisheries) maintain local wildlife resource and habitat inventories. The Fish and Wildlife Information Service Website lists 446 species found in Gloucester, including quail, dove, rabbit, wild turkey, hawks and owls, songbirds, turtles and amphibians, raccoon, beaver, opossum, muskrat, skunk, squirrel, woodchuck, and white-tailed deer. Bald Eagles also nest within the County, tidal marshlands attract Sora Rail, Clapper Rail, wild ducks, and other waterfowl, freshwater fish include large-mouth bass, small-mouth bass, and bream, and saltwater fish, such as shad, croaker, spot, bluefish, channel and black sea bass, menhaden, mackerel, eel, white, and silver perch, can be found.

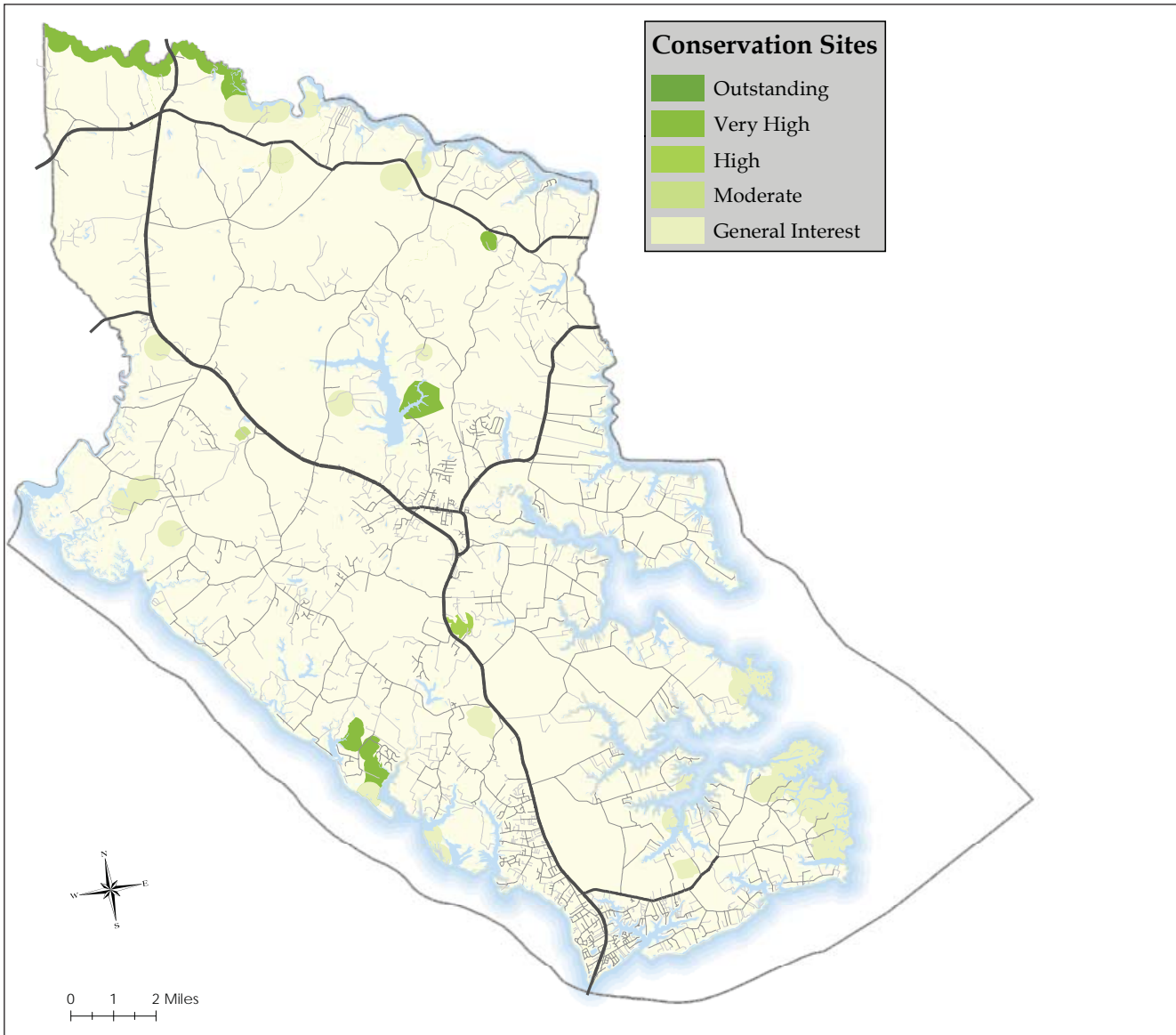


Green-winged Teal Duck - Source: www.chesapeake-bay.org

¹⁸ 40 CFR §50

¹⁹ 40 CFR §93

Map NR-8: Conservation Sites



Data Source: Virginia Department of Conservation and Recreation, Division of Natural Heritage

The Virginia Department of Conservation and Recreation Division of Natural Heritage (DCR-DNH) recognizes and designates the Commonwealth's critical natural resources into three (3) categories:

1. Rare, threatened, or endangered plant and animal species habitat
2. Unique or exemplary natural communities
3. Significant geologic formations (caves and karst features)

This agency identifies conservation sites that include one (1) or more plant, animal, or natural community and are designed to include the element, its habitat, and a buffer or adjacent land necessary for conservation. These sites are ranked from 1 (outstanding) to 5 (general interest) by their biodiversity. Gloucester contains 25 conservation sites, including the Dragon Run watershed. Conservation sites are discussed on page 141.

Natural Heritage Resources

The Division of Natural Heritage (DNH) defines natural heritage resources as rare, threatened, or endangered plant and animal species habitat, unique or exemplary natural communities, and significant geologic formations, such as caves and karst features. Locally, 28 species and communities have been designated as natural heritage resources, as listed in Table NR-3.

The Department of Conservation and Recreation identifies and protects statewide natural heritage resources, maintains a comprehensive database of all documented occurrences of Virginia's natural heritage resources, and develops conservation sites for known natural heritage resource populations that include adjacent or surrounding habitat. Conservation sites are not officially protected, but stewardship is recommended since they contain one (1) or more rare plant, animal, or natural community and are identified to include the element, its associated habitat where possible, and a buffer or adjacent land necessary for conservation that can be used to screen development from natural heritage resources, assist local and regional planning, identify acquisition and easement locations, and guide restoration activities.

The Dragon Run Watershed, located along Gloucester's northern boundary, is an important natural area, containing a largely undisturbed, spring-fed waterway often studied by local, regional, and state agencies. This watershed supports various fish, wildlife, and plants, including ancient cypress trees and multiple rare species and habitat types, with six (6) natural heritage resources located on this site: Bald Eagles, Red Turtlehead, the Bald Cypress Mixed Tupelo Intermediate Swamp, the Northern Coastal Plain Tidal Bald Cypress Woodland, the Tidal Oligohaline Marsh (Narrow-leaved Cattail – Eastern Rose – Mallow Type), and the Tidal Freshwater Marsh (Wild Rice – Mixed Forbs Type). The Dragon Run's undeveloped nature, with roughly 80% of this resource covered by forests, has preserved the natural ecosystem and this area has received a biodiversity ranking of B2, representing a conservation site of very high significance based upon rarity, quality, and the number of element occurrences it contains.

The Dragon Run Special Area Management Plan, produced by the Dragon Run Steering Committee, Middle Peninsula Planning District Commission (MPPDC), and Virginia Coastal Zone Management Program (part of DEQ), was completed in November 2003. This plan presents a common stakeholder vision, contains an action plan and resource conservation project benchmarks, and was adopted locally as an addendum to the Comprehensive Plan in November 2004. Adjacent land uses are primarily farming and forestry, contributing to this site's regional ecological value, water purity, abundant rare and unique natural species, and rural character. As the Dragon Run Watershed is valued by the County's residents and maintenance is desired, the Watershed Management Plan aims to achieve consistency across county boundaries among land use plans and regulations to maintain farming and forestry and preserve natural heritage areas by protecting plants, animals, natural communities, and aquatic systems.²⁰ The Plan's Future Land Use chapter recommends this area continue to remain rural to retain its natural areas, water quality, and character.

In addition to the Dragon Run, twenty-four (24) other conservation sites exist locally, as listed in Table NR-4 and shown on Map NR-8.

²⁰ Dragon Run Watershed Management Plan



Bald Eagle - Source: www.chesapeake-bay.org

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Table NR-3: Natural Heritage Resources (See page 145 for rank and status descriptions)

Group Name	Scientific Name	Common Name	Last Year Observed	Global Rank	FWS Species of Concern	State Rank	Federal Status	State Status
Terrestrial Natural Community	Acer rubrum - Fraxinus pennsylvanica/ Packera aurea - Carex bromoides - Pilea fontana - Bidens laevis Forest	Coastal Plain Calcareous Seepage Swamp	2010	G2	SOC	S2		
Vertebrate Animal	Ambystoma mabeei	Mabee's Salamander	2010	G4		S1S2		LT
Vertebrate Animal	Ammodramus caudacutus	Saltmarsh Sharp-tailed Sparrow	1992	G4		S2B, S3N		
Vascular Plant	Cardamine pratensis	Cuckooflower	2010	G5		S1		
Vascular Plant	Carex reniformis	Reniform Sedge	1964	G4?		SH		
Vascular Plant	Chelone obliqua	Red Turtlehead	1999	G4		S1		
Vertebrate Animal	Circus cyaneus	Northern Harrier	1992	G5		S1S2B, S3N		
Vascular Plant	Cuscuta cephalanthi	Button-bush Dodder	1970	G5		SH		
Vascular Plant	Cuscuta indecora	Pretty Dodder	1997	G5		S2?		
Vascular Plant	Eleocharis tricostata	Three-angle Spikerush	1938	G4		S1		
Vascular Plant	Eriocaulon parkeri	Parker's Pipewort	1986	G3		S2		
Terrestrial Natural Community	Fagus grandifolia - Acer barbatum - Quercus muhlenbergii/ Sanguinaria canadensis Forest	Coastal Plain Calcareous Ravine Forest	2005	G2?	SOC	S2		
Terrestrial Natural Community	Fagus grandifolia - Quercus (alba, rubra) - Liriodendron tulipifera/(Ilex opaca var. opaca)/ Polystichum acrostichoides Forest	Northern Coastal Plain / Piedmont Mesic Mixed Hardwood Forest	2010	G5		S5		

Table NR-3: Natural Heritage Resources (Cont.) (See page 145 for rank and status descriptions)

Group Name	Scientific Name	Common Name	Last Year Observed	Global Rank	FWS Species of Concern	State Rank	Federal Status	State Status
Terrestrial Natural Community	Fagus grandifolia - Quercus (alba, velutina, montana)/ Kalmia latifolia Forest	Northern Coastal Plain / Piedmont Oak - Beech / Heath Forest	2010	G4		S3		
Vertebrate Animal	Falco peregrinus	Peregrine Falcon	1994	G4		S1B, S2N		LT
Vertebrate Animal	Haliaeetus leucocephalus	Bald Eagle	2002	G5		S2S3B, S3N		LT
Vascular Plant	Isotria medeoloides	Small Whorled Pogonia	1997	G2		S2	LT	LE
Aquatic Natural Community	NC-Great Wicomico-Piankatank First Order Stream	NC-Great Wicomico-Piankatank First Order Stream	2011	G3		S3		
Aquatic Natural Community	NC-Great Wicomico-Piankatank Fourth Order Stream	NC-Great Wicomico-Piankatank Fourth Order Stream	2011	G1G2	SOC	S1S2		
Aquatic Natural Community	NC-Great Wicomico-Piankatank Second Order Stream	NC-Great Wicomico-Piankatank Second Order Stream	2011	G3		S3		
Vertebrate Animal	Nyctanassa violacea	Yellow-crowned Night-heron	1976	G5		S2S3B, S3N		
Vascular Plant	Sabatia campanulata	Slender Marsh Pink	1965	G5		S2		
Vascular Plant	Schoenoplectus fluviatilis	River Bulrush	1995	G5		S2		
Terrestrial Natural Community	Taxodium distichum - Nyssa (biflora, aquatica)/ Itea virginica/ Saururus cernuus Forest	Bald Cypress - Mixed Tupelo Intermediate Swamp	2000	G3G4		S3S4		

Table NR-3: Natural Heritage Resources (Cont.) (See page 145 for rank and status descriptions)

Group Name	Scientific Name	Common Name	Last Year Observed	Global Rank	FWS Species of Concern	State Rank	Federal Status	State Status
Terrestrial Natural Community	Taxodium distichum - Nyssa biflora - Fraxinus profunda/ Peltandra virginica - (Bignonia capreolata) Tidal Forest	Northern Coastal Plain Tidal Bald Cypress Woodland	2000	G3		S2		
Vascular Plant	Trillium pusillum var. virginianum	Virginia Least Trillium	1984	G3T2	SOC	S2		
Terrestrial Natural Community	Typha angustifolia - Hibiscus moscheutos Tidal Herbaceous Vegetation	Tidal Oligohaline Marsh (Narrow-Leaved Cattail - Eastern Rose-Mallow Type)	1999	G4G5		S3?		
Terrestrial Natural Community	Zizania aquatica - Pontederia cordata - Peltandra virginica - Polygonum punctatum Tidal Herbaceous Vegetation	Tidal Freshwater Marsh (Wild Rice - Mixed Forbs Type)	2000	G4?		S4?		

Source: Federal designations are developed by the U.S. Fish and Wildlife Service. State designations are developed by the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

Table NR-3: Rank and Status Descriptions

Term	Definition
S1	Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically five (5) or fewer populations or occurrences, or very few remaining individuals (<1000).
S2	Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically six (6) to twenty (20) populations or occurrences or few remaining individuals (1,000 to 3,000).
S3	Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically having 21 to 100 populations or occurrences (1,000 to 3,000 individuals).
S4	Apparently secure; Uncommon but not rare, and usually widespread in the state. Possible cause of long-term concern. Usually having >100 populations or occurrences and more than 10,000 individuals.
S5	Secure; Common, widespread and abundant in the state. Essentially ineradicable under present conditions, typically having considerably more than 100 populations or occurrences and more than 10,000 individuals.
S#B	Breeding status of an animal within the state.
S#N	Non-breeding status of animal within the state. Usually applied to winter resident species.
S#?	Inexact or uncertain numeric rank.
SH	Possibly extirpated (Historical). Historically known from the state, but not verified for an extended period, usually > 15 years; this rank is used primarily when inventory has been attempted recently.
S#S#	Range rank; A numeric range rank, (e.g. S2S3) is used to indicate the range of uncertainty about the exact status of the element. Ranges cannot skip more than one (1) rank.
LE	Listed Endangered
LT	Listed Threatened
SOC	Species of Concern species that merit special concern (not a regulatory category)

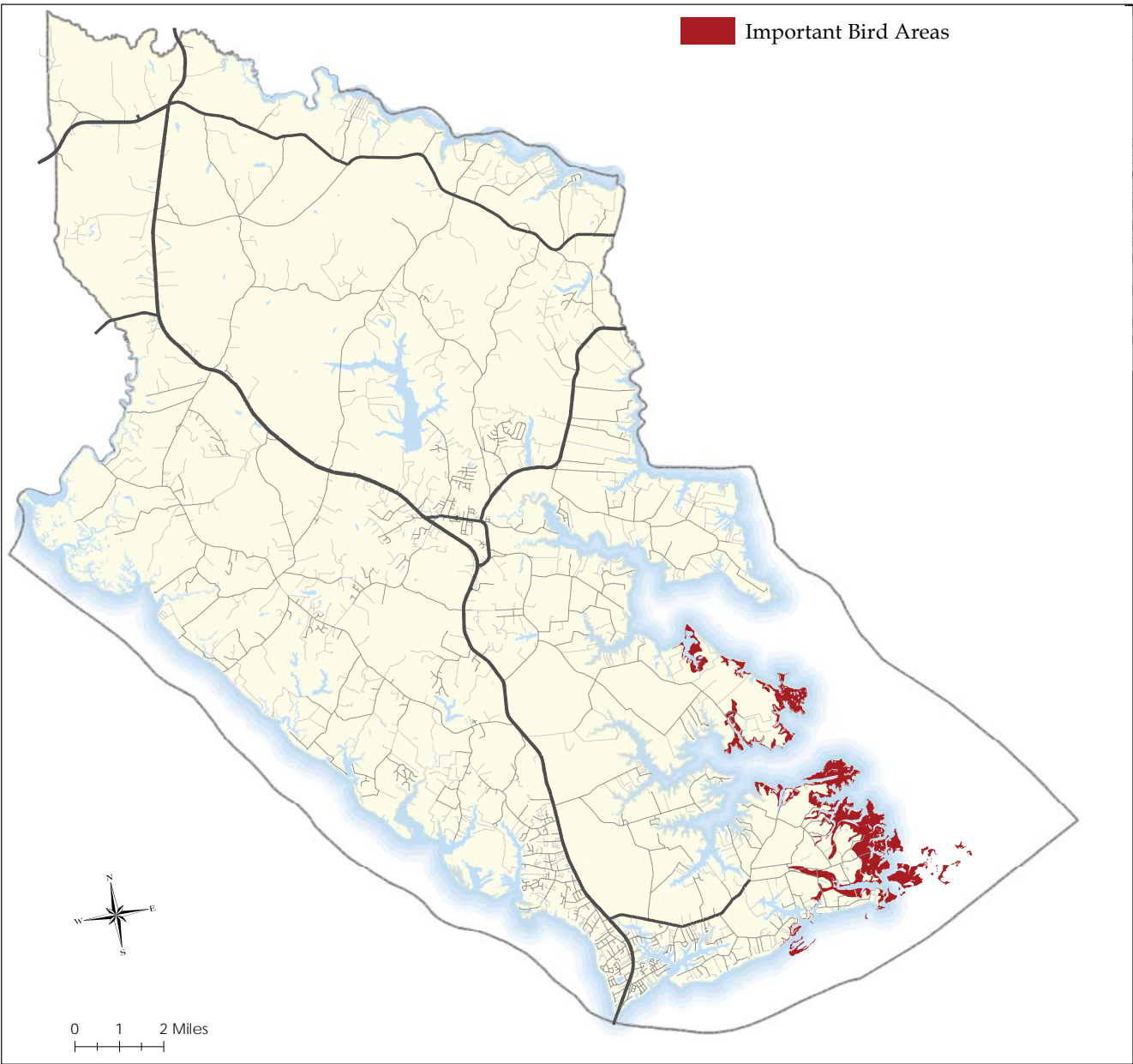
Table NR-4: Natural Heritage Conservation Sites

Site Name	Biodiversity Rank	Legal Status
Bar Neck	B5	SL
Beaverdam Creek Slopes	B2	NL
Beech Swamp Uplands	B5	SL
Bena Woodlands	B5	SL
Carvers Creek at Route 198 (SCU)	B4	NL
Carvers Creek	B5	SL
Catlett Islands	B5	SL
Church Hill Pond	B4	SL
Coleman Bridge	B5	SL
Dragon Run	B2	SL
Dragon Run (SCU)	B2	NL
Ferry Creek Ravine	B2	NL
Ferry Creek Upstream Route 198 (SCU)	B4	NL
Four Point Marsh	B5	NL
Harper Creek	B5	SL
Heywood Creek	B5	SL
Leigh Creek	B5	SL
Maryus – Guinea Marshes	B5	SL
Piankatank	B5	SL
Robins Pond Headwaters	B3	FL
Rosewell	B2	SL
Shepherdsville Church	B5	SL
Signpine	B5	SL
White Marsh Pond	B5	SL
Woods Mill Swamp	B5	SL

Source: Virginia Department of Conservation and Recreation, Division of Natural Heritage

TERM	DEFINITION
SCU	Stream Conservation Unit
B1	Outstanding Significance
B2	Very High Significance
B3	High Significance
B4	Moderate Significance
B5	General Interest
FL	Federally listed species present
SL	State listed species present
NL	No listed species present

Map NR-9: Important Bird Areas



Data Source: National Audubon Society, Virginia Department of Game and Inland Fisheries

The National Audubon Society designates Important Bird Areas (IBA's) contributing towards global conservation by providing essential habitat for one (1) or more bird species. These areas can be public or private lands and may or may not be protected. Southeastern areas of the County lie within the Western Shore Marshes IBA, which also covers Hampton, Poquoson, and Mathews and York Counties. This area includes concentrations of salt marsh, high-marsh, and low-marsh habitat, as well as sandy berms and pine hummocks, all providing important bird species habitats.

Important Bird Areas are discussed on page 147.

Important Bird Areas

The Important Bird Areas (IBA) Program, a global effort coordinated by the National Audubon Society, provides essential bird habitat sites as small as a few acres or over thousands of acres, in a discrete manner on protected and unprotected public land, private land, or both. The Virginia IBA Program aims to identify important nesting, mating, feeding, and wintering areas and provide protection through partnerships with local and state agencies along with other groups. Local IBA's are shown on Map NR-9 and should be considered during future preservation efforts.

Forest and Farmland

Vegetation assists in soil stabilization, erosion prevention, increasing soil permeability, decreasing stormwater runoff, buffering adjacent land uses, mitigating noise, wind, and heat impacts, improving air quality, and providing wildlife habitat. Large portions of the County currently exist as forests and suitable soils are present throughout Gloucester's northern and western regions, where most forested lands are found, including Loblolly and Virginia Pine, Yellow Poplar, Red Oak, White Oak, Sweet and Black Gum, Sycamore, Ash, and some Red Maple, all grown and harvested for saw timber. The Virginia Department of Forestry plants between 800 and 1,000 acres of local forestland annually with most reforestation containing Loblolly Pine seedlings at 450 to 500 trees per acre.²¹ However, as forest land is used for other purposes, local reforestation may decrease. The most recent forest surveys indicate that Gloucester contains roughly 89,000 acres of privately owned forests and 500 acres of public forests.²²

The 2012 Census of Agriculture, published by the U.S. Department of Agriculture, lists 136 active farms totaling 20,300 acres with an average farm size of 149 acres. Most farms (68%) produce cropland, commonly soybeans, corn, and wheat. The County contains 4,715 acres of farmland used as woodland, an increase of

741 acres from 2007, with other land utilized as forests or privately owned.²³

Since rural character preservation has been identified as a local goal, maintaining the agricultural economy complements local rural character while providing economic benefits. Land use principles that support agricultural practices and forested lands can provide value-added benefits as the residential population grows.

Critical Areas

The Chesapeake Bay Preservation Act (CBPA) requires local Comprehensive Plans to address existing natural land conditions that can limit development, including flood prone areas, highly-erodible soils, highly-permeable soils, wetlands, steep slopes, hydric soils, seasonally high water tables, groundwater recharge areas, significant wildlife habitat areas, prime agricultural lands, and protected lands, as well as include a soil assessment to identify suitable areas for septic tank, although engineered septic systems now allow for development where soils are unsuitable for traditional septic systems.

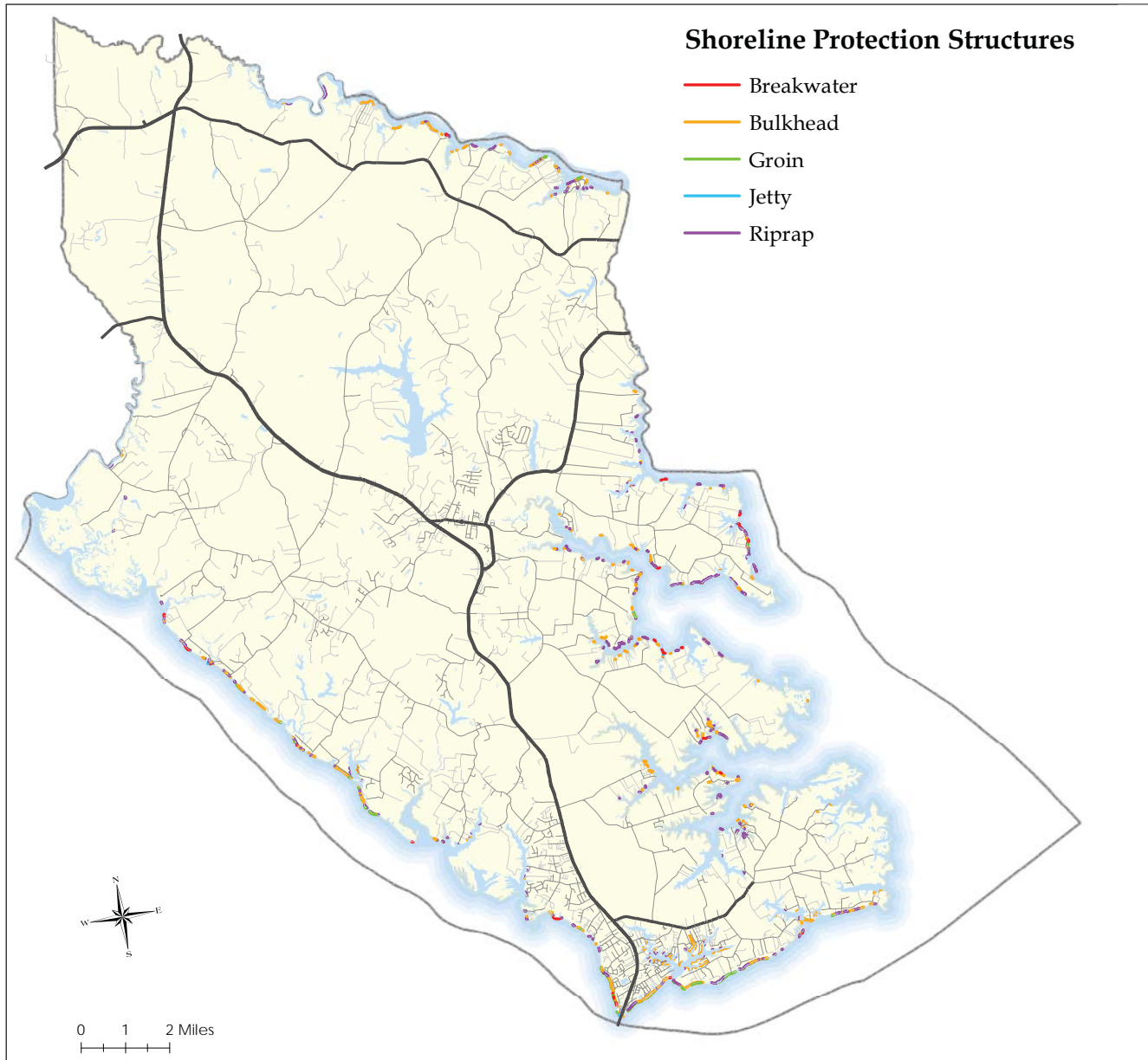
Gloucester adopted a CBPA Ordinance consistent with state and interstate protection and restoration efforts to designate CBPA areas within the County. Sensitive areas, such as tidal shores, wetlands, and highly erodible soils, are identified as Resource Protection Areas (RPAs) and include a 100-foot wide buffer and the remainder of the County is classified as a Resource Management Area (RMA) to preserve all RPAs. This ordinance acts as an overlay district throughout the County regardless of the underlying zoning district and the County's Environmental Programs Department provides direction on this ordinance to assist developers in meeting RPA, RMA, and stormwater management requirements.

²¹ Virginia Department of Forestry

²² U.S. Forest Service

²³ 2012 Census of Agriculture

Map NR-10: Shoreline Protection Structures



Data Source: Gloucester County Shoreline Inventory Report, Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science

The Comprehensive Coastal Inventory Program, part of VIMS's Center for Coastal Resources Management, completed a County wide Shoreline Inventory in 2008. This inventory utilized geographic information systems (GIS), global positioning systems (GPS), and remote sensing technology to assess Gloucester's shores, including the shoreline, banks, buffers, and riparian areas. Recreational shoreline structures were identified along with protective structures, including ripraps, bulk heads, break waters, groinfields, jetties, debris, and other miscellaneous structures. Shoreline inventories assist in making informed shoreline management decisions that may impact land use, development, infrastructure, recreation, conservation, and other considerations. Shoreline conditions and features are discussed on page 149.



Shoreline - Source: Gloucester Parks, Recreation & Tourism

Shorelines

The Gloucester County Shoreline Inventory Report describes conditions along primary and secondary shorelines and the characteristics for all contiguous navigable tidal waterways, detailing 492 miles of the County's 507 miles of shoreline.²⁴ Most of Gloucester's natural shoreline contains various types of marshes identified as low shore and composed of beaches, except for portions along the York River from the Poropotank River to Sarah's Creek that are classified as moderately low shore with bluffs ranging 20 to 40 feet high. According to the Virginia Institute of Marine Science (VIMS), three (3) beaches (near Fox Creek, around Gloucester Point, and on lower Jenkins Neck by Sandy Point) have the potential for medium- to high-intensity recreational uses.

Manmade shoreline protection features, as shown on Map NR-10, reinforce roughly 28 miles of shoreline

within the County and shoreline recreational structures, such as marinas, boathouses, docks, and boat ramps, are shown on Map NR-11. Local shorelines are forested (44%), scrub-shrub (29%), or residential (20%), with the rest comprised of open space, agriculture, commercial uses, paved, and timbered areas and most altered shoreline features are found around Gloucester Point and Sarah's Creek.²⁵

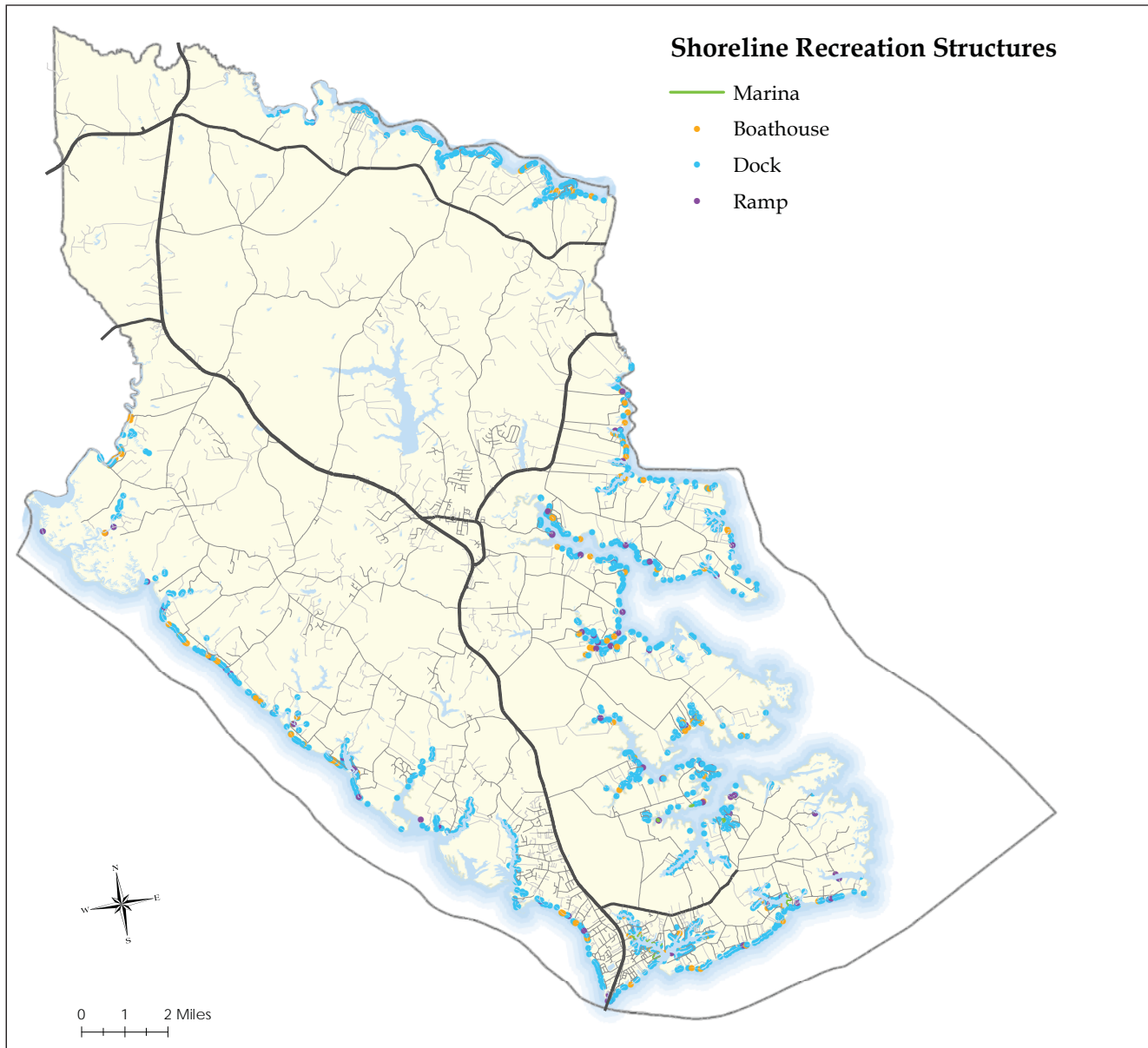
Impacts of Land Development

Comprehensive Plans are required to consider existing and proposed land uses adjacent to the shoreline to identify and analyze land and water use conflicts and water quality issues. Land and water activities may impact water resource utilization and quality, such as increased nutrients, sediment, and pesticides resulting from runoff and increased flows produced by stream bank erosion. In developing areas, land and water uses may conflict with sensitive natural resources, which can be managed by utilizing land

²⁴ The Gloucester County Shoreline Inventory Report includes 34 map plates and a summary table describing shoreline conditions. They are available online through the VIMS Center for Coastal Resources Management website at http://ccrm.vims.edu/gis_data_maps/shoreline_inventories/index.html.

²⁵ http://ccrm.vims.edu/gis_data_maps/shoreline_inventories/index.html

Map NR-11: Shoreline Recreation Structures



Data Source: Gloucester County Shoreline Inventory Report, Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science

The Comprehensive Coastal Inventory Program, part of VIMS's Center for Coastal Resources Management, completed a Countywide Shoreline Inventory in 2008. This inventory utilized geographic information systems (GIS), global positioning systems (GPS), and remote sensing technology to assess Gloucester's shores, including the shoreline, banks and buffers, and riparian areas. Protective shoreline structures were identified along with recreational structures, including piers, wharfs, boat ramps, boat houses, and marinas. Shoreline inventories assist in making informed shoreline management decisions that may impact land use, development, infrastructure, recreation, conservation, and other considerations. Shoreline conditions and features are discussed on page 149.

use regulations to meet environmental standards. Waterfront redevelopment can also utilize various techniques, such as clustered development, to reduce Chesapeake Bay impacts.

Redevelopment

Stormwater also impacts local water quality when runoff from impervious surfaces transports nutrients, pollutants, and toxic substances into local waterways. Areas of the County that developed prior to the CBPA Ordinance may not include stormwater runoff measures and redevelopment will require water quality measures, such as stormwater best management practices (BMP's), shoreline restoration activities, pervious area and open space provision, and, if necessary, connection to public sewer.

Potential Shoreline Development Sites

Most local seafood processing plants, marinas, and working waterfronts have existed for decades and are considered cultural resources that the County desires to continue, but may also benefit from appropriate redevelopment. This may provide the opportunity to continue the waterfront use while mitigating environmental impacts through decreased stormwater runoff and connection to public sewer, among other measures, especially in areas between Gloucester Point and Achilles.

Restricted Waterway Access

Adjacent waterways typically allow for uninhibited usage, except for portions along the York River where restricted and prohibited areas exist in conjunction with the Naval Weapons Station Yorktown's regular and emergency functions. In restricted access areas, recreational waterway users are permitted to pass through, but prohibited from loitering or anchoring, and restricted anchorage areas prevent loitering and anchoring and may include greater limitations if naval ships are anchored nearby or in need of abandonment due to hazardous conditions.

Flood Prone Areas

Flood prone areas, places periodically subjected to overflows from nearby water bodies or low-lying areas with poor drainage, serve multiple purposes, including enhanced water quality, groundwater aquifer recharge, flooding reduction, fishery and wildlife habitat, recreational opportunities, and historic site preservation.²⁶ However, development in regularly flooded areas may incur greater building costs and face other challenges while increasing flooding due to additional impervious cover. Areas in the County developed prior to Special Flood Hazard Area identification or federal and state floodplain program establishment may require floodplain management measures to reduce and mitigate flood hazards, which can be assisted by open space planning.

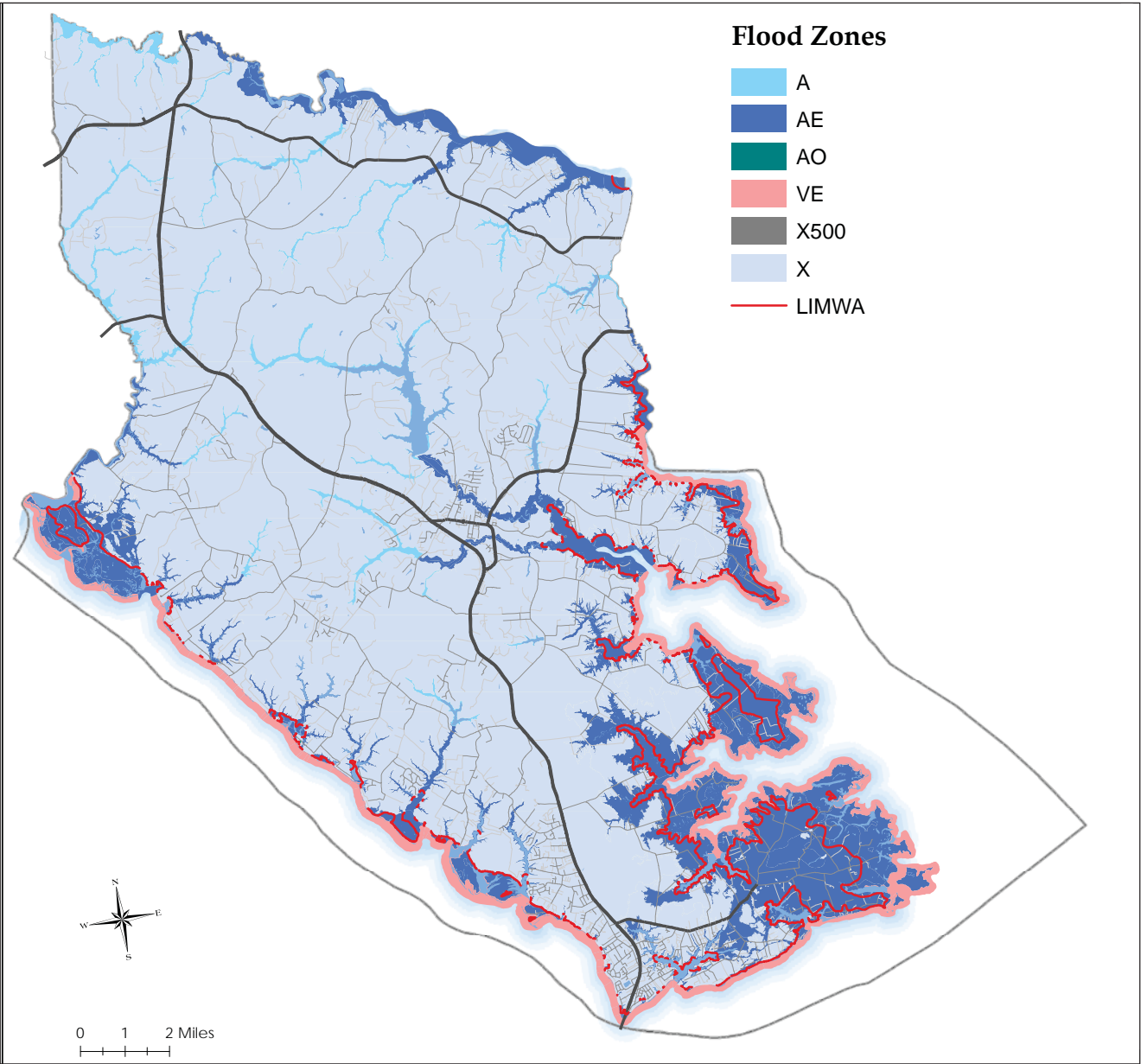
The Federal Emergency Management Agency (FEMA) identifies flood prone areas in its Flood Insurance Rate Maps (FIRM's), most recently revised and adopted in 2014 (as shown on Map NR-12) and available in digital format as well as on the County's Geographic Information System (GIS) website. Roughly 27,000 acres are within the 100-year floodplain and new (inhabited) structures within the floodplain are required to have their lowest finished floor located two (2) feet above the base flood elevation indicated on the maps. Both Zones AE and VE correspond to the 1% annual chance coastal floodplain with established Base Flood Elevations and mandatory flood insurance purchase requirements and Zone VE may face additional hazards from storm waves. Zone A indicates areas with a 1% annual chance of flooding without depths or base flood elevations due to a lack of detailed analyses.²⁷ Zone X-500 has a moderate flood hazard between the limits of the 100- and 500-year floods and all other areas have a minimal flood risk.

Gloucester is a FEMA Community Rating System (CRS) member audited every five (5) years by the Insurance Services Office (ISO) to determine local floodplain regulation administration and enforcement quality. This program recognizes and encourages community floodplain management activities beyond the

²⁶ DCR-CBLA, 1989

²⁷ <https://www.fema.gov/floodplain-management/flood-insurance-rate-map-firm>

Map NR-12: FEMA Flood Zones



Data Source: Federal Emergency Management Agency, Gloucester County Planning Department

As a coastal community, Gloucester County possesses several floodprone areas that are as vulnerable to extreme weather events or tidal forces. Development in these areas poses several potential challenges, including increased costs (both financial and personal) to the community and home owners when floods damage property or prevent accessibility. Development may also intensify flooding as natural buffers and wetlands are replaced with impervious cover, preventing water infiltration. Gloucester has an adopted Floodplain Management Ordinance and Floodplain Management Plan (adopted in 2009, revised in 2014) that guides actions within floodplains to mitigate impacts.

Flood prone areas are discussed on pages 151-153.

The Federal Emergency Management Agency (FEMA) identifies flood zones through the National Flood Insurance Program (NFIP) and designates these on Flood Insurance Rate Maps (FIRM's) to aid in setting property flood insurance rates. The County's FIRM's include six (6) types of flood zone designations: A, AE, AO, V E, X-500, and X.

A Zones are subject to a one percent (1%) annual chance flood, but Base Flood Elevations (BFE's) are undetermined. Mandatory flood insurance purchase requirements and floodplain management standards apply in this zone.

AE Zones are subject to a one percent (1%) annual chance flood and BFE's have been determined. Mandatory flood insurance purchase requirements and floodplain management standards apply in this zone.

AO Zones are subject to a one percent (1%) annual chance flood with flood depths between one (1) and three (3) feet, as determined by detailed methods. Mandatory flood insurance purchase requirements and floodplain management standards apply in this zone.

VE Zones are subject to a one percent (1%) annual chance flood with additional wave velocity hazards and BFE's have been determined by detailed methods. Mandatory flood insurance purchase requirements and floodplain management standards apply in this zone.

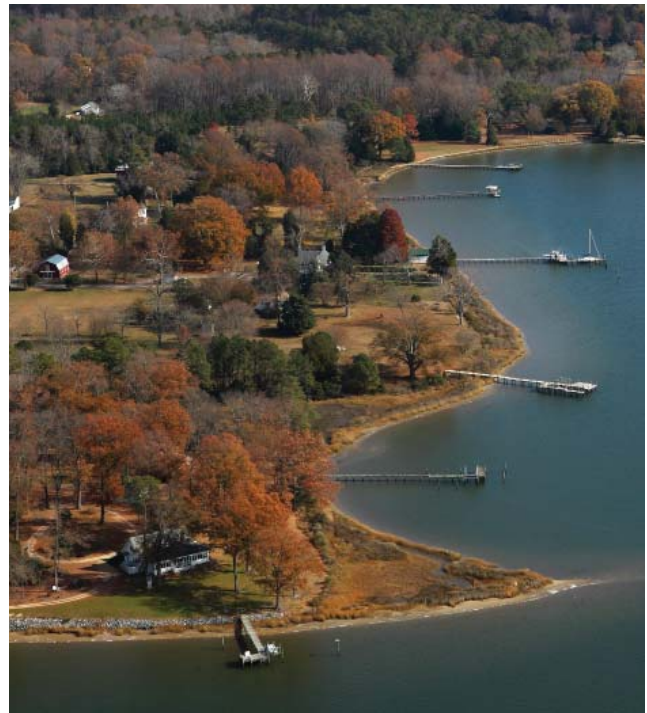
X-500 Zones (Zone X as shaded on FIRM's) are subject to between a 0.2% and 1% annual chance flood. These zones have average flood depths of less than one (1) foot or drainage are as less than one (1) square mile. Mandatory flood insurance purchase requirements and floodplain management standards do not apply in this zone.

X Zones are not subject to at least a 0.2% annual chance flood. Mandatory flood insurance purchase requirements and floodplain management standards do not apply in this zone.

The Limit of Moderate Wave Action (LiMWA) is a new designation that identifies the boundaries of areas subject to waves between 1.5 and 3 feet and a one percent (1%) annual chance of flooding. These areas are usually found between VE Zones and AE zones, and are also known as Coastal A Zones.

minimum National Flood Insurance Program (NFIP) standards and Gloucester currently holds a "Class 7" CRS status, which provides a 15% discount on annual flood insurance premiums.

The County addresses potential floodplain development risks through the Floodplain Management Ordinance, Subdivision Ordinance, and Floodplain Management Plan (FMP). The Floodplain Management Ordinance, updated in 2014, establishes floodplain development and redevelopment performance requirements while the Subdivision Ordinance directs flood prone lands to be set aside for uses not endangered by inundation. The Floodplain Management Plan (FMP), adopted in 2009 and revised in 2014, analyzes coastal flooding causes, identifies vulnerabilities, evaluates existing flood management practices, and discusses current and potential mitigation strategies, developed with the help from citizen input and local, regional, state, and federal agencies and organizations. A 16-member committee consisting of citizens and County staff monitors implementation, reviews progress, and recommends plan revisions, which occur every five (5) years.



Flood prone land - Source: Bruce Nelson Photography

Map NR-13: Dam Break Inundation Zones



Data Source: Gloucester County GIS Department, Virginia Department of Emergency Management

State law requires that localities incorporate potential dam failure effects into their comprehensive plans through mapping dam break inundation zones. Dams fail for various reasons, including prolonged rainfall and flooding, inadequate capacity, improper maintenance or design, and negligent operation, among others.

Dam break inundation zones are discussed on page 155.



Beaverdam Reservoir - Source: Gloucester Parks, Recreation & Tourism

The Virginia Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management is responsible for monitoring and ensuring the dam safety. Dams are categorized based upon their hazard potential (high, significant, or low), identifying both their size and the potential dam failure damage. Every dam requires an annual inspection, but inspection frequency (by professional engineers) varies by hazard potential. High hazard dams are professionally inspected every two (2) years, while low hazard dams are professionally inspected every six (6) years. Gloucester contains one (1) high hazard dam at the Beaverdam Reservoir and three (3) significant hazard dams, while other dams throughout the County are not large enough to require categorization.

The **Probable Maximum Flood (PMF)** results from the Probable Maximum Precipitation estimated by the National Weather Service based upon the most severe meteorological and hydrological conditions.

High Hazard Potential Dam failure will cause probable loss of life or serious economic damage.

Significant Hazard Potential Dam failure may cause loss of human life or appreciable economic damage.

Low Hazard Potential Dam failure would not result in expected loss of human life nor cause more than minimal economic damage, with damage only occurring to the dam's property owner.

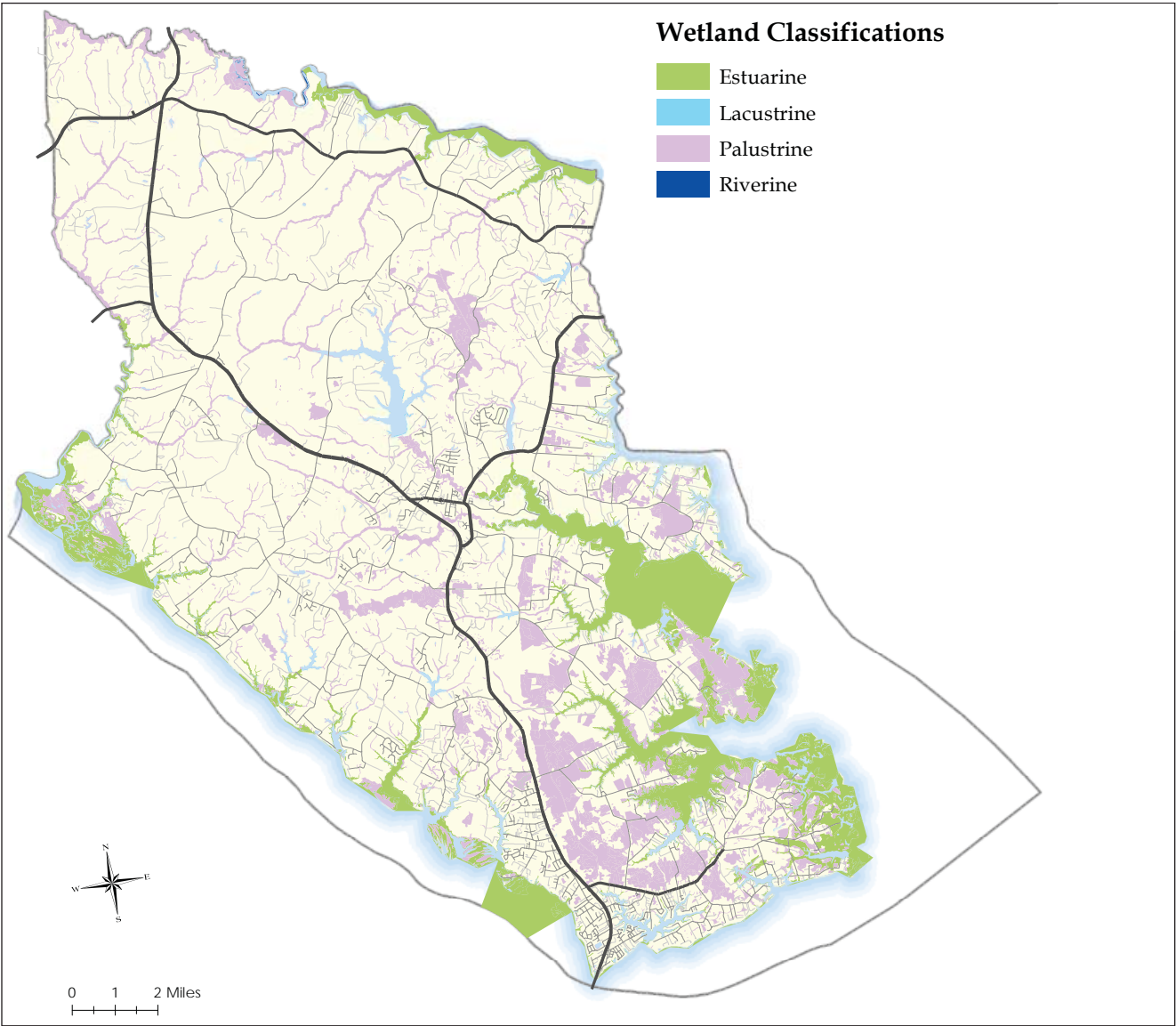
Dam Break Inundation Zones

State code requires localities to include information on dam break inundation zones and potential downstream impacts in their Comprehensive Plans. Dams that exceed certain heights and capacities are regulated, with specific uses receiving exemptions, and a dam's structural integrity and the land uses within its dam break inundation zone determine its hazard potential (low, significant, or high). The MPPDC studies dams and their failure potential in its Natural Hazards Mitigation Plan, completed in 2010 and updated every five (5) years, and has identified one (1) high hazard dam (Beaverdam, with a maximum storage capacity of 20,523 acre-feet), three (3) significant hazard dams (including Cow Creek Dam, which has a maximum storage capacity of 931 acre-feet), and seven (7) low hazard dams in the County. Dam break inundation zones are shown on Map NR-13.

Tidal and Non-Tidal Wetlands

Wetlands, defined in state code and classified as non-vegetated or vegetated, include lacustrine, riverine, estuarine, and palustrine based upon certain characteristics. Non-vegetated wetlands are unvegetated lands contiguous to mean low water and between mean low water and mean high water that are subject to flooding by normal and wind tides, but not hurricane or tropical storm tides, whereas vegetated wetlands are lands between and contiguous

Map NR-14: Wetlands



Data Source: U.S. Fish and Wildlife Service

Gloucester County possesses over 12,000 acres of wetlands. Wetlands provide numerous benefits, including producing food and energy for marine ecosystems, providing birds, fish, and wildlife habitat, protecting shorelines from erosion, filtering runoff pollutants, and reducing flooding impacts. The 1972 Wetlands Protection Act, as amended, and the 1988 Chesapeake Bay Preservation Act, as amended, enable and/or require that local governments take steps to preserve critical environmental areas, including wetlands. Nontidal wetland preservation receives direction from the Nontidal Wetlands Act of 2000 and the 1977 Clean Water Act, as amended, which grants the U.S. Army Corps of Engineers the authority to regulate activities affecting waters of the United States.

Wetlands are discussed on pages 155-157.

to mean low water and a defined elevation above mean low water with certain types of vegetation present.²⁸ Lacustrine wetlands are formed around interior waterbodies or dammed rivers, riverine wetlands are found along rivers before they reach lakes or ocean salinity levels, estuarine wetlands are commonly called tidal wetlands, and palustrine wetlands are known as non-tidal wetlands. Wetland types and extent are shown on Map NR-14.

The Virginia Wetlands Management Handbook lists five (5) wetlands benefits, including marine ecosystem food and energy production sites, wildlife habitat, natural shoreline erosion protection, pollutant (sediment and nutrient) filters that reduce water quality impacts, and flood reduction.²⁹

In 2008, VIMS published a shoreline situation report that studied over 492 miles of local shoreline, identifying 90% as wetlands, including fringe, embayed, and extensive marshes, with marsh and wetland acreage ranking fifth throughout Virginia. Over 12,000 acres of wetlands include high and low marshes (5,000 acres),

28 Code of Virginia §28.2-1300

29 Virginia Wetlands Management Handbook

Estuarine wetlands are tidal wetlands with salinity (from ocean-derived salts) equal to or greater than 0.5%. These are found locally along the Chesapeake Bay and its tributaries' shores.

Lacustrine wetlands are formed around interior waterbodies or dammed rivers. These are mainly found around the Beaverdam Reservoir.

Palustrine wetlands are both non-tidal and tidal wetlands with salinity (from ocean-derived salts) less than 0.5%. These are found throughout the County.

Riverine wetlands are formed along rivers before they reach lakes or saline conditions. These wetlands are found along the Dragon Run and Carvers Creek.

creeks (3,500 acres), tidal flats (1,800 acres), hammocks (1,000 acres), swamps (600 acres), ponds, and wooded areas. Gloucester's hammock wetlands, areas elevated above the surrounding marsh and typically dominated by pines, cedars, and wax myrtle, account for roughly 40% of the state's total hammock-type geography.

Existing Wetlands Protection Policies

Gloucester's Wetlands Zoning Ordinance requires tidal wetland development to receive local wetlands board or Virginia Marine Resources Commission (VMRC) permitting in conjunction with the U.S. Army Corps of Engineers' Section 404 permit program. Additionally, tidal wetlands are considered Resource Protection Area (RPA) features under the Chesapeake Bay Preservation Ordinance, requiring a 100-foot buffer, and non-tidal wetlands and other areas not included in the RPA are designated as Resource Management Area (RMA) features, as shown in Map NR-15. Some shoreline projects may require coordinated reviews under the Wetlands and Chesapeake Bay Preservation Ordinances to address both programs' requirements.

Tidal wetlands also fall under the state's 1972 Wetlands Protection Act, which enables the County to adopt a Wetlands Ordinance and establish the joint-permit process for construction, dredging, or filling tidal wetlands, supporting the local Wetlands Board's actions. The Virginia Marine Resources Commission coordinates the joint-permit review with all appropriate agencies and administers the Wetlands Protection Act, reviewing all Wetlands Board decisions.

Non-tidal wetlands fall under Section 404 of the nation's 1977 Clean Water Act, which prohibits disposal of dredged or fill material into United States waters and adjacent wetlands, and an Army Corps of Engineers permit is required for non-tidal wetlands impacts. Additionally, the Virginia Nontidal Wetlands Act of 2000 oversees non-tidal wetlands activities in the following ways:

- Requires permittees to primarily avoid, then minimize wetland damage and, if wetlands must be destroyed, to replace their acreage and function.

Map NR-15: Chesapeake Bay Preservation Areas



Data Source: Gloucester County Planning Department, Chesapeake Bay Preservation Act, Chesapeake Bay Preservation Area Designation and Management Regulations

The Chesapeake Bay Preservation Act (CBPA) and associated regulations direct Tidewater localities (including Gloucester) to protect the state water quality through various measures. The CBPA includes requirements for local ordinances, including zoning, subdivision, erosion and sediment control ordinances, and comprehensive plans. Localities must designate and map Chesapeake Bay Preservation Areas, such as Resource Management Areas, Resource Protection Areas, and/or Intensely Developed Areas, in their comprehensive plans. Gloucester has outlined Resource Protection and Resource Management Areas.

Chesapeake Bay Preservation Areas are discussed on pages 157-159.

- Adopts the scientifically-accepted wetlands definition, establishing consistency with the federal government and State Water Control Board.
- Requires permitting and mitigation for proposed drainage, dredging, excavating, ditching, flooding, impounding, filling, or discharging into non-tidal wetlands.
- Requires the state to seek a Corps of Engineers'

Resource Protection Areas are lands adjacent to perennially-flowing waterbodies with intrinsic water quality value due to ecological and biological processes or impact sensitivity that may result in significant state water quality degradation. These include tidal wetlands, non-tidal wetlands contiguous to tidal wetlands and connected by surface flow or water bodies with perennial flow, tidal shores, lands designated by local governments necessary to protect state water quality, and a buffer not less than 100 feet in width adjacent to and landward of the aforementioned features.

Resource Management Areas contain areas contiguous to Resource Protection Areas that assist in maintaining Resource Protection Area water quality or value. These include floodplains, steep slopes, highly erodible soils, highly permeable soils, non-tidal wetlands not within in the Resource Protection Area, and other lands designated by local governments necessary to protect state water quality. In adopting its Chesapeake Bay Preservation Ordinance, the County established that all lands not within the Resource Protection Area are considered Resource Management Areas. However, the designation of the Resource Management Area can vary from locality to locality.

Intensely Developed Areas are within Chesapeake Bay Preservation Areas and have been developed to the extent that little natural environment remains. In adopting its Chesapeake Bay Preservation Ordinance, Gloucester has not designated any Intensely Developed Areas.

State Programmatic General Permit (SPGP) for most activities, streamlining the permitting process. Virginia has received this permit and DEQ issues state permits based on the general permit.

- Exempts normal agricultural and silvicultural activities and homeowner landscaping and maintenance.
- Requires general permits (issued by DEQ) for various activities, including sand, coal, and gas mining, linear public utility and transportation project easements, and activities affecting less than 0.5 acres.

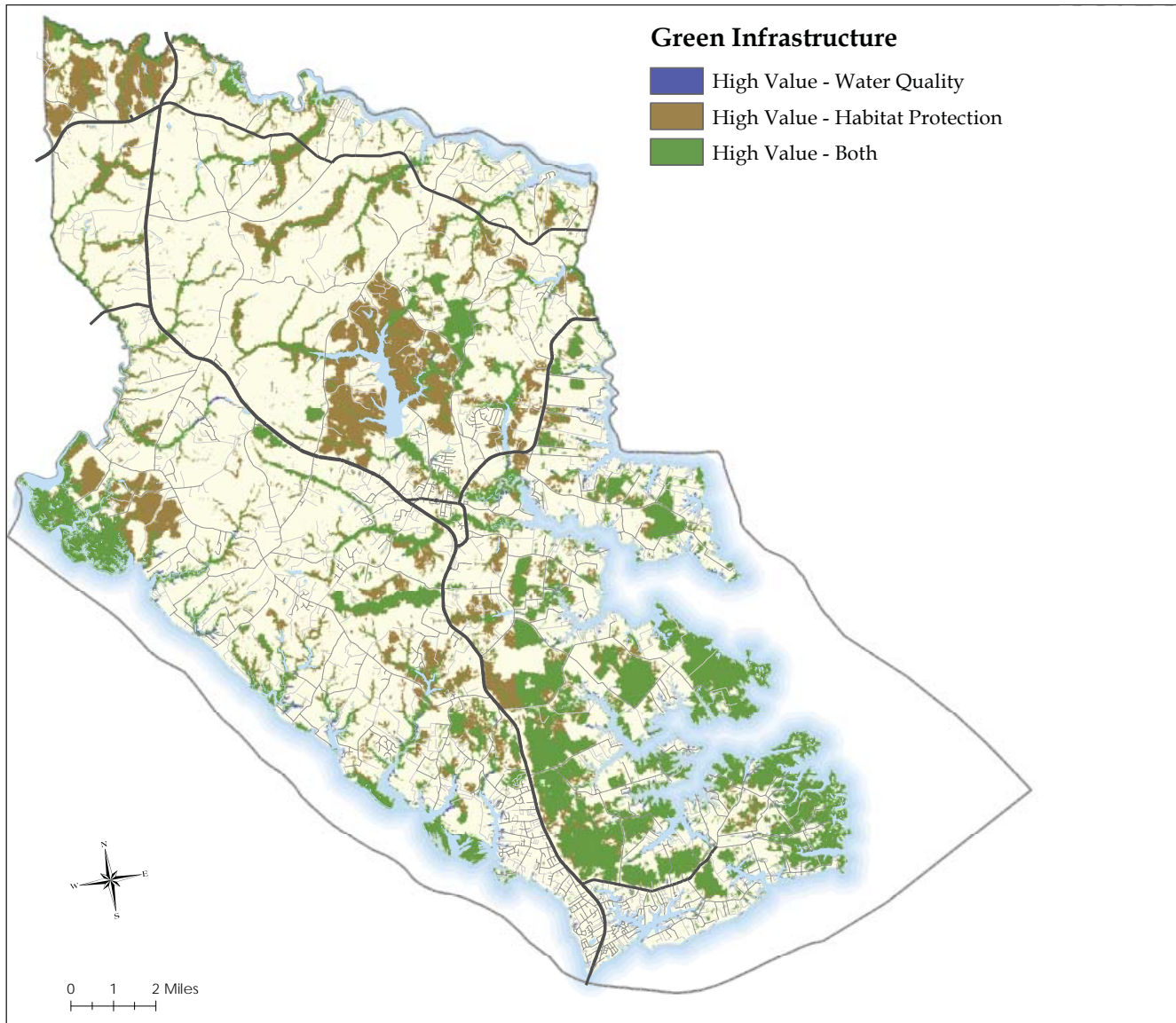
Green Infrastructure

Guided development offers the opportunity to plan for rural character and environmental resource preservation to support the local quality of life. Green infrastructure planning systematically addresses community needs and identifies valuable lands for natural resource and water quality preservation, recreation, and working land and cultural resource continuation, which helps to specify areas most suitable for future development.

The Hampton Roads Planning District Commission (HRPDC) has produced reports that identify important environmental areas in order to develop a regional green infrastructure network that extends from Gloucester through the Peninsula to the Southern and Western Tidewater region, as shown on Map NR-16, to include areas that provide water quality and wildlife habitat benefits. These reports describe the methods used to identify the network and contain a resource inventory of parks and recreational areas, among others. A more detailed local network can be developed from this regional network to connect the County's natural, cultural, and historic resources. Additionally, it can be a planning tool used to connect assets as develops occurs, such as preserving existing rural and cultural landscapes, scenic views, and recreational and historic sites.³⁰

30 HRPDC Green Infrastructure reports include A Green Infrastructure Plan for Hampton Roads (2010), Green Infrastructure in Hampton Roads (2007), and The Hampton Roads Conservation Corridor Study (2006).

Map NR-16: Green Infrastructure



Data Source: Hampton Roads Planning District Commission

Green infrastructure provides a systematic conservation planning approach that addresses multiple community needs, including habitat preservation, water quality improvement, recreation, flood protection, and working land and cultural resource conservation. This approach can guide development and resource preservation. The Hampton Roads Planning District Commission (HRPDC) completed multiple regional green infrastructure plans that include important water quality and wildlife habitat areas. These plans can assist local planning efforts that incorporate historic resources, working lands, and other areas the residents desire to protect and integrate with other natural resources. The HRPDC identified approximately 900 acres of land with high water quality value, 16,000 acres of land with high habitat protection value, and 26,000 acres of land with high water quality and habitat protection value within Gloucester. Green Infrastructure is discussed on pages 159-161.

The regional green infrastructure network identifies important areas for water quality and habitat protection, identifying approximately 900 acres valuable for water quality, over 16,000 acres valuable for habitat protection, and nearly 26,000 acres of valuable for both within the County. This analysis can aid in prioritizing conservation, preservation, and outdoor recreational areas as well as designing an active and passive recreational network connecting to environmental, cultural, and historic resources.

Major Issues

Soil Suitability for Septic Systems

As most soils in southeastern Gloucester as well as those along local streams and rivers are at least partially hydric with inundation occurring for periods of time sufficient enough to create anaerobic conditions, these areas generally have a high water tables susceptible to poor drainage and flooding, making them unfavorable for development or conventional septic systems.

However, prior to the existing environmental and land use ordinances, some residential and commercial development occurred on soils poorly suited for development, where wastewater disposal and groundwater quality issues potentially increasing if future development does not account for these factors. The Future Land Use Plan identifies local areas unsuitable for septic system use or unfavorable for intensive residential, commercial, or industrial development due to these physical constraints.

Chesapeake Bay Impact Crater

The Chesapeake Bay Impact Crater, resulting from a comet or asteroid collision into the Chesapeake Bay, creates development limitations in portions of the County east of Routes 17 and 3/14. Groundwater reserves from the Piney Point aquifer are rarely used due to hydrogen sulfide prevalence and low yields and, although lower aquifers contain water suitable for consumption, these withdrawals typically are brackish and require desalinization.

Septic suitability also limits development in areas within the Impact Crater and numerous characteristics, including water table proximity and natural features, provide challenges for identifying suitable soils for drainfields and limit development. Due to these factors, the Future Land Use Plan designates lands within the Impact Crater for natural resource preservation and low density development where appropriate.

Shoreline Erosion and Erosion Rates

Severely eroding shorelines, those eroding at a rate greater than three (3) feet per year, are generally small in size, accounting for roughly four percent (4%) of Gloucester's shoreline. Several local high bank erosion areas exist, including the Carmine and Mumfort Islands in the York River, isolated lands around Timberneck Creek, and much of Mill Creek and high marsh erosion regions are reported around Morris Bay, Monday Creek, and along the Ware River near Page Creek, Goat Point Creek, Four Point Marsh, and Mud Point.

A recommended stabilization hierarchy, provided in Table NR-5, measures low, moderate, and severely eroding shorelines consistent with Chesapeake Bay Preservation Act goals and provides applications for installing new or replacing existing stabilization structures. Although erosion control options are individually ranked (with "1" being the most preferable option), a combination of methods is often necessary and the General Assembly adopted living shorelines as the preferred shoreline stabilization measure over shoreline hardening measures in 2011.

Where stabilization is necessary, a regional approach (rather than individual) is recommended, sharing costs and mitigating nearby erosion issues. Section V of the HRPDC's Shoreline Erosion Control and Access Policy Options provides further erosion control options and DCR studies report that marsh grass maintenance and establishment should be the first choice considered for shoreline erosion control in low energy areas with adequate site conditions.³¹

³¹ Shoreline Erosion Control Guidelines

Table NR-5: Hierarchy of Possible Shoreline Stabilization Measures

Ranking	Stabilization Measure
Areas with a Low Erosion Rate (<1 foot/year)	
1	Vegetative stabilization with/without bank regrading (if applicable)
2	Revetments
3	Bulkheads
Areas with a Moderate Erosion Rate (1-3 feet/year)	
1	Vegetative stabilization (depending on site-specific conditions)
2	Beach nourishment
3	Revetments
4	Breakwaters
5	Groins
6	Bulkheads (depending on site-specific conditions)
Areas with a Severe Erosion Rate (>3 feet/year)	
1	Relocation
2	Beach nourishment
3	Revetments
4	Breakwaters
5	Groins
6	Seawall

Living Shorelines, with vegetative and non-structural erosion control measures, are preferred over other stabilization techniques since this method also provides water quality and aquatic habitat benefits. However, as wave energy and erosion increases, non-structural erosion control is not an effective shoreline stabilization measure and shorelines with less than 0.5 nautical miles of fetch may benefit more from combining marsh planting and breakwater structures, such as a submerged sills that protect the marsh toe of interior creeks with high erosion, an approach that has been successful throughout the Chesapeake Bay.

The Erosion and Sediment Control Ordinance allows for local erosion impact area designation and a conservation plan, which must be submitted by the property owner subject to the review, bonding, inspection, and enforcement provisions of land-disturbance permits. Since Gloucester has not designated any erosion impact areas because many with high erosion are currently developed, buffers

and mitigation may be the most appropriate shoreline stabilization strategies. When off-site erosion impacts existing development, property owners are responsible for proper erosion control measures.

Stormwater Management

Virginia municipalities may choose to administer stormwater management requirements locally or through DEQ on their behalf. Since Gloucester does not directly manage stormwater infrastructure, this is primarily addressed through the local Stormwater Management Ordinance and secondarily through the County's Chesapeake Bay and Erosion and Sediment Control Ordinances along with the state's Total Maximum Daily Load (TMDL) requirements.



Gloucester Point Beach Park - Source: Gloucester Parks, Recreation & Tourism

Coastal Resources Management

Coastal ecosystems, located at the land-water boundary, provide both direct and indirect local benefits and perform various functions, including shoreline stabilization, water quality preservation, flood protection, and fish, wildlife, and plant habitat, which may be limited by traditional resource management practices. Statewide coastal resources, such as beaches, dunes, and wetlands, have been lost as a result of development and erosion control practices, among other factors, and shoreline resource management is important for coastal ecosystem continuance.

Living shorelines, the state's preferred shoreline stabilization alternative, encompasses multiple design options, including marsh plantings, rock sills, and beach nourishment, depending on the tidal and erosion concerns. These approaches prevent shoreline erosion, minimize natural coastal ecosystem impacts, and support integrated tidal shorelines management strategies, with guidance and practices recommended by VIMS to assist local coastal ecosystem preservation efforts, including:

- Utilizing VIMS Decision Trees to review and select appropriate erosion control and shoreline

management practices³²

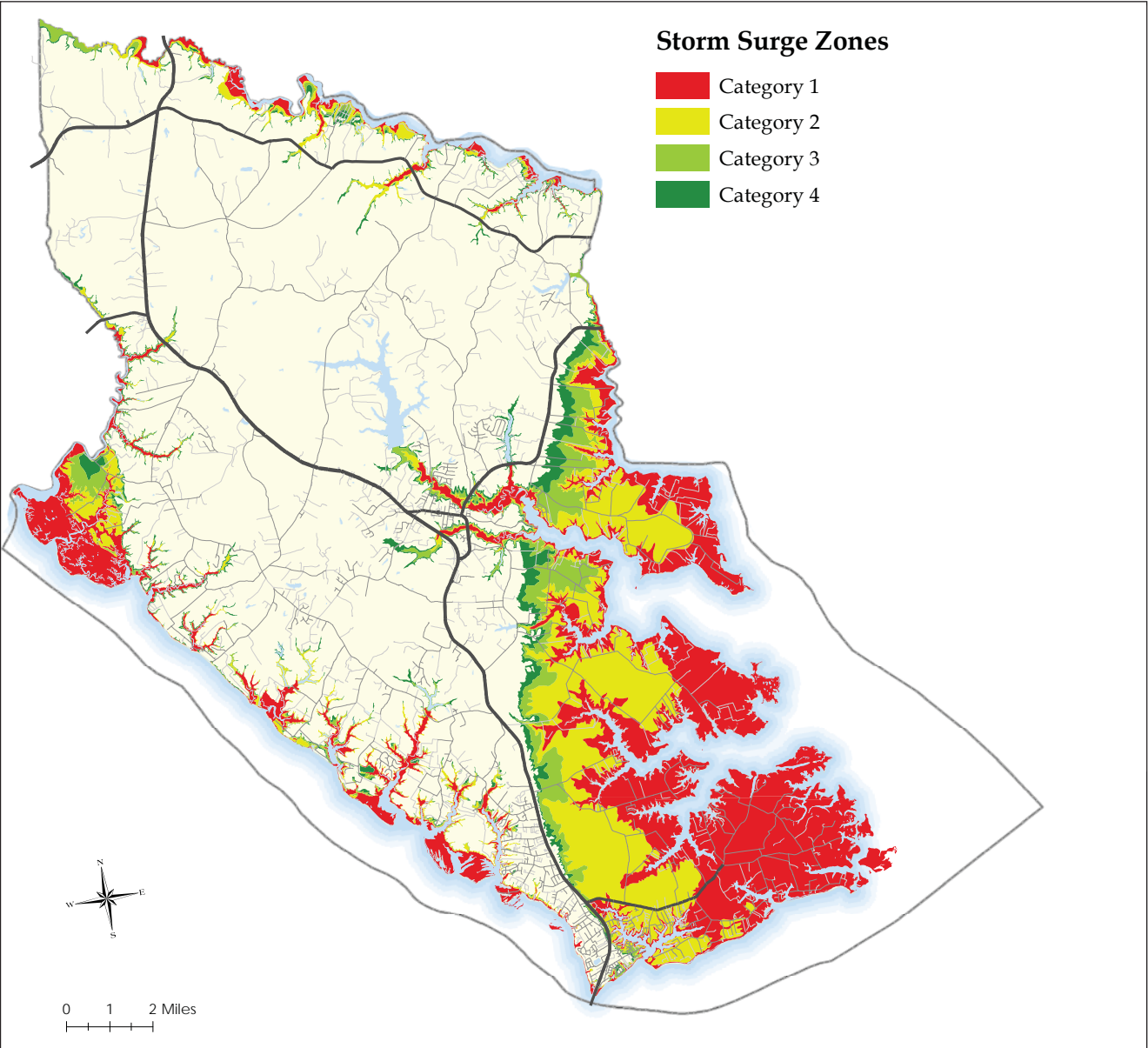
- Adopting shoreline best management practices as the recommended approach and requiring justification to use another approach
- Training local staff on decision-making tools
- Making local policies consistent with the VMRC's general permit
- Educating citizens and stakeholders on living shoreline benefits
- Evaluating and considering a locality-wide permit to promote living shorelines
- Considering open space preservation adjacent to marshlands for inland retreat and sea level rise mitigation
- Evaluating and considering living shoreline construction cost-share opportunities

Storm Surges

As Hampton Roads is relatively flat and low-lying, the region is vulnerable to storm surge damage and potential sea level rise when allowing storms to come ashore and cause flooding. Similarly, Gloucester is

³² More information on the VIMS Decision Trees is available on the website for the Center for Coastal Resources Management at <http://ccrm.vims.edu/decisiontree/index.html>.

Map NR-17: Storm Surge



Data Source: Virginia Department of Emergency Management, Federal Emergency Management Agency, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration

As a coastal community with significant low-lying areas, Gloucester is vulnerable to coastal hazards such as tidal flooding and storm surges. Tidal flooding can regularly occur in low-lying areas or in upland areas resulting from high tides. The National Weather Service defines a storm surge as a change in water level due to a storm, resulting in higher water levels than predicted. Similarly, a storm tide is the combination of a storm surge and the normal tide. Where storm surges are measured without a reference point, storm tides are measured relative to a datum, such as mean sea level or mean high water.

Storm surges are discussed on pages 163-164.

susceptible to these threats, especially regions east of Route 17 that lie in defined Storm Surge Areas, such as the Mobjack Bay, Jenkins Neck, Maryus, Severn, Achilles, Bena, Perrin, Robins Neck, Glass, Dutton, Ware Neck, White Marsh and portions of Gloucester Point, as detailed in Table NR-6 and illustrated on Map NR-17.

In addition to tidal and surge flooding, hurricanes and other storms can significantly damage buildings and impact the natural environment in coastal areas through beach erosion, downed trees, and other vegetation loss. An HRPDC study found that many Hampton Roads natural areas are susceptible to storm

In 2008, numerous federal, state, and local governments and agencies completed a hurricane evacuation study for Virginia localities along the lower Chesapeake Bay to identify areas vulnerable to various storm intensities. These storm intensities are categorized based upon the Saffir-Simpson Hurricane Scale (Category 5, or catastrophic, hurricanes were not included). Although previous ratings included storm surge estimates and wind speed, the current version only includes wind speed. The storm tide depends on various factors, including the storm's direction, landspeed, windspeed, wave action, and offshore topography. Therefore, this study is most appropriate for general planning purposes.

Category 1 storms have maximum sustained windspeeds between 74 and 95 miles per hour with storm surges between 4 and 5 feet.

Category 2 storms have maximum sustained windspeeds between 96 and 110 miles per hour with storm surges between 6 and 8 feet.

Category 3 storms have maximum sustained windspeeds between 111 and 129 miles per hour with storm surges between 9 and 12 feet.

Category 4 storms have maximum sustained windspeeds between 130 and 156 miles per hour with storm surges between 13 and 18 feet.

Table NR-6: Cumulative Area Vulnerable to Storm Surge in Gloucester County

Storm Surge Category	Area (acres)	Area (Percentage of Entire County)
1	21,476	15.41%
2	35,518	25.48%
3	40,254	28.88%
4	43,904	31.50%

Source: Hampton Roads Planning District Commission

surges, with approximately 84,000 acres (16.5%) of the region's green infrastructure network impacted by a Category 1 storm surge.

Potential sea level rise, resulting from melting ice that increases the volume of ocean water and causes oceanic warming and thermal expansion, along with local and regional currents, could inundate or erode eastern areas of Gloucester, as shown on Map NR-18. Additionally, Gloucester, like much of Hampton Roads and eastern Virginia, is sinking (subsiding) due to several geological processes, which also contributes to local sea level rise. The National Oceanic and Atmospheric Administration (NOAA) reports that long-term sea level rise trends at the Gloucester Point/Yorktown Tide Station increase roughly 0.15 inches/year (approximately 1.25 feet every 100 years) and climate change is projected to increase the global rate by roughly 1.5 and 6.5 feet by the end of the century, resulting in higher local rates.³³

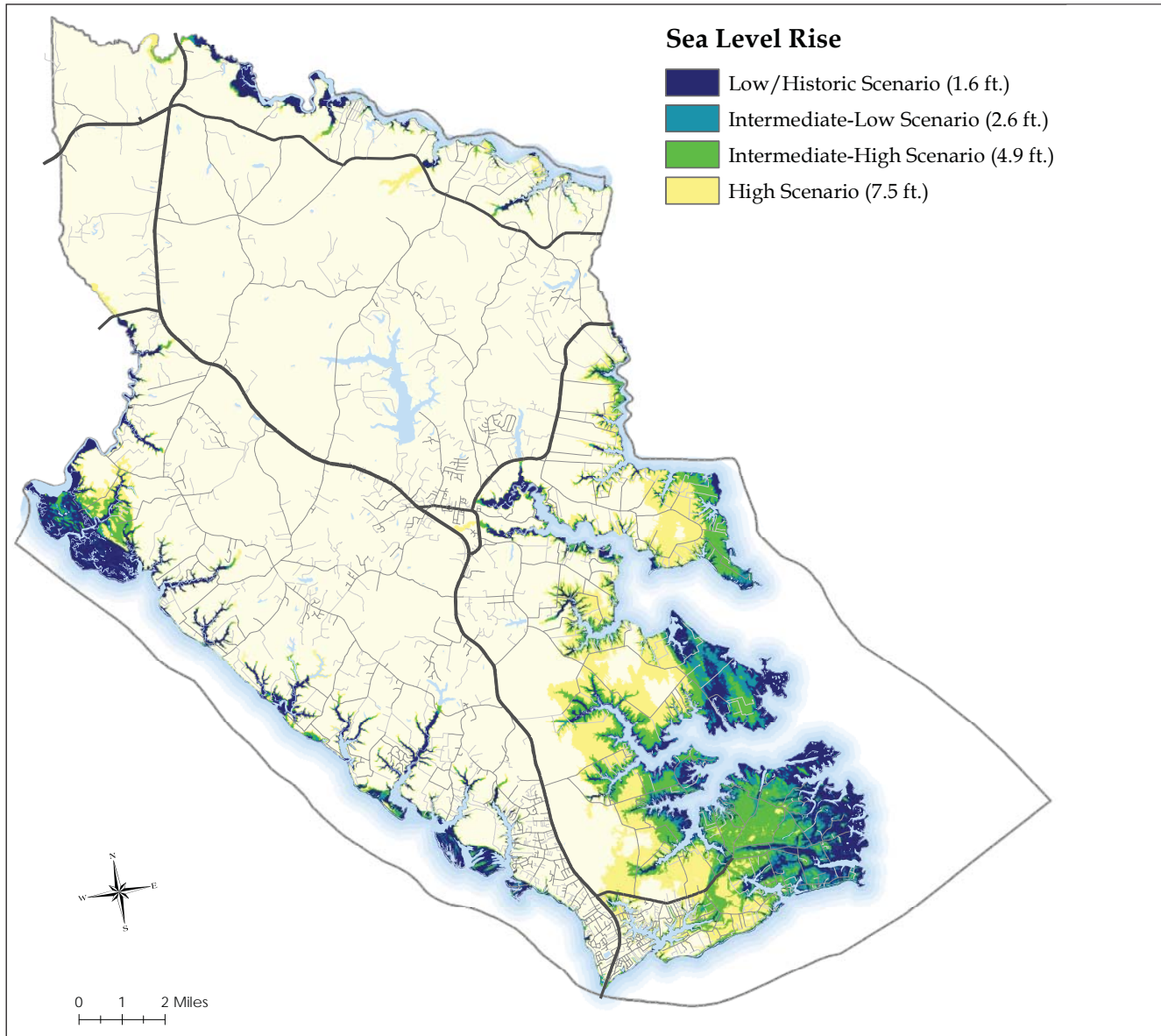
Surface Water Quality

Point Source Pollution

Point source pollution, including municipal and industrial dischargers and individual waste treatment systems, contributes to surface water quality issues. The Clean Water Act requires that wastewater dischargers have a permit establishing allowable discharge limits and specifying monitoring and reporting requirements

³³ U.S. Army Corps of Engineers Engineering Circular 1165-2-212, Sea-Level Change Considerations for Civil Works Programs

Map NR-18: Sea Level Rise



Data Source: Virginia Geographic Information Network, U.S. Geological Survey, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, Hampton Roads Planning District Commission

The U.S. Army Corps of Engineers has developed a tool that combines global sea level rise estimates with local historic rates to project local sea level rise. This tool can be combined with global scenarios (0.2 meters, 0.5 meters, 1.2 meters, and 2.0 meters by 2100), developed by the National Oceanic and Atmospheric Administration for the U.S. National Climate Assessment and results, along with high resolution elevation data and tide records, can identify vulnerable areas within the County under each scenario. Between 1.6 and 7.5 feet of local sea level rise is projected for Hampton Roads by 2100. This map shows the areas below mean high water for each scenario.

Sea level rise is discussed on page 165.

and National Pollutant Discharge Elimination System (NPDES) permits monitor household and industrial wastes collected in sewers and at municipal treatment plants and regulate industrial point sources and concentrated animal feeding operations discharging into other wastewater collection systems or receiving waters. These contaminants include conventional (human wastes, disposed food, laundry waters, etc.), toxic (organics and metals), and nonconventional pollutants (nitrogen, phosphorus, etc.) and Virginia Pollution Discharge Elimination System (VPDES) Permits are administered by DEQ. There are three (3) local VPDES permit holders, including the County's Water Treatment Plant.

Thirteen (13) Hampton Roads localities, including Gloucester, are currently under a Special Order by Consent with the Virginia Department of Environmental Quality for sanitary sewer overflows and the Hampton Roads Sanitation District (HRSD) has entered into a separate Consent Decree with the U.S. Environmental Protection Agency (EPA). The HRSD consent decree, resulting from the EPA's expanded enforcement priorities, focuses on sanitary sewer systems serving more than one (1) million people and requires local and regional wastewater utilities to make assessments, test their conveyance systems for failures and capacity-related issues, and provide necessary system replacements and

enhancements. The Hampton Roads localities and HRSD have approved a Memorandum of Agreement defining the roles, responsibilities, and obligations for implementing a Regional Wet Weather Management Plan in order to reach compliance.

The Toxic Release Inventory (TRI) contains information on over 650 toxic chemicals used, manufactured, treated, transported, or released into the environment and the Resource Conservation and Recovery Information System (RCRIS), a national program management and inventory system, provides hazardous waste handler information. Generally, entities that generate, transport, treat, store, and dispose of hazardous wastes are required to report their activities to state environmental agencies. According to the EPA, there are not any TRI permit holders in Gloucester and 51 RCRIS permits have been issued, as listed in Table NR-7.

Hazardous material release at designated facilities or along major transportation routes within the County poses potential surface water and groundwater resource threats, addressed by the Local Emergency Planning Committee (LEPC). In addition to public safety benefits, the LEPC aims to reduce surface water and groundwater contamination concerns through quick responses to transportation accidents and hazardous material release.

Non-Point Source Pollution

Non-point sources have significant impacts on surface water quality and contain all pollution that does not originate from a distinct discharge point. These sources include stormwater runoff, rain and snow, solid waste disposal, sludge and wastewater land application, septic tanks, dredging, development/construction material spills and leaks, marinas and shipyards, along with impacts from natural processes, such as soil weathering that releases metals, acids, etc. Non-point pollution is not readily quantified, but increased precipitation produces additional runoff and a greater impact. In Gloucester, agricultural runoff, residential septic system discharges, stormwater runoff, or marina discharges affect shellfish grounds and may also impact groundwater resources.

Potential sea level rise may significantly impact Virginia's coastal communities, including Gloucester. Local, or relative, sea level rise results from the combination of global sea level rise and local land movement (subsidence). Climate change producing reduced ice levels and warmer ocean temperatures increase sea levels. Similarly, geological processes are causing subsidence in Gloucester and the greater coastal Hampton Roads region. Consequently, Gloucester has experienced sea level rise over the past century, with recent projections indicating that local sea level rise will continue.

Table NR-7: Gloucester County Potential Sources of Pollution

Permit Type	Facility	Location
RCRA	7-11 #10848 – Rte. 17 & 641	Gloucester Point
RCRA	7-11 #19634 – Route 17 North	Gloucester
RCRA	7-11 #20570	Glenns
RCRA	Advanced Finishing, Inc.	Hayes
RCRA	Borden Chemical	Gloucester
RCRA	Cleo Huskeys Body Shop	Hayes
RCRA	Colony Metalsmiths, Inc.	Hayes
RCRA	Control Products USA	Hayes
RCRA	East Coast Oil #54	Gloucester Point
RCRA	East Coast Oil #74	Gloucester
RCRA	Farm Fresh #6290	Hayes
RCRA	Fast Fare Inc.	Hayes
RCRA	Ferguson Enterprises, Inc.	Ordinary
RCRA	Glass Marine, Inc.	Hayes
RCRA	Gloucester Auto Body Repair	Hayes
RCRA	Gloucester Convenient Care	Hayes
RCRA	Gloucester County Public Schools	Gloucester
VPDES	Gloucester County Water Treatment Plant	Gloucester
RCRA	Gloucester Laundry And Cleaners	Gloucester
RCRA	Gloucester Lumber Products, Inc.	Gloucester
RCRA	Green Gates Gifts	Gloucester Point
RCRA	Gunns Body Shop, Inc.	Gloucester
RCRA	Home Depot #4650	Gloucester
RCRA	Hudgins Bill Olds Pontiac GMC	Gloucester
RCRA	Industrial Resource Tech, Inc.	Gloucester
RCRA	Industrial Resource Tech, Inc.	Gloucester
RCRA	Jordan Marine Service, Inc.	Gloucester Point
RCRA	Ken Houtz Chevrolet Buick	Gloucester

Permit Type	Facility	Location
RCRA	Mega Contractors, Inc.	Glenns
RCRA	Merchant's LLC #420	Gloucester
RCRA	Merlin Auto Machine	Hayes
RCRA	Mid-County Center	Gloucester
RCRA	Middle Peninsula Landfill	Glenns
RCRA	Middle Peninsula Landfill	Hayes
RCRA	Quinn Motors	Gloucester
RCRA	Rappahannock Community College	Glenns
VPDES	Rappahannock Community College	Glenns
RCRA	Rite Aid #11235	Hayes
RCRA	Rite Aid #3698	Gloucester
RCRA	Riverside Walter Reed Hospital	Gloucester
RCRA	Southern States	Gloucester
RCRA	Southern States	Gloucester
RCRA	Star Metal Finishing, Inc.	Hayes
RCRA	Star Metal Finishing, Inc.	Hayes
RCRA	Tidewater Newspaper, Inc.	Gloucester
RCRA	Tractor Supply #1297	Gloucester
RCRA	Virginia Institute of Marine Science	Gloucester Point
VPDES	VIMS Gloucester Point	Gloucester Point
RCRA	VEPCO	Gloucester
RCRA	Wal-Mart #1759	Gloucester
RCRA	Wal-Mart Supercenter #1759	Gloucester
RCRA	Waste Management Gloucester High School	Gloucester
RCRA	Wawa Food Market #652	Hayes
RCRA	York River Yatch Haven	Gloucester Point

Source: DEQ; EPA Resource Conservation and Recovery Act Info

Impaired Waters

The 2013 Virginia Water Quality Assessment identified several local water quality issues, including polychlorinated biphenyls (PCB's) and mercury in fish tissue, dissolved oxygen, enterococcus, benthic-macroinvertebrates, and fecal coliform contamination. Additionally, DEQ reports that impairments exist for shellfishing (especially due to the presence of fecal coliform bacteria), fish consumption, aquatic life, and recreation,³⁴ as shown in Table NR-8. These impairments have caused closures for multiple local creeks and PCB's found in fish tissue have resulted in a fish consumption advisory for the main stems of both the Chesapeake Bay and the York River.³⁵

Total Maximum Daily Loads

Virginia has established a goal that all streams support beneficial uses, including primary contact/swimming, fishing, shellfishing, drinking water, and aquatic life. To achieve this goal and fulfill EPA directives, the state identified point and non-point pollution sources, such as residential, municipal, or industrial discharges, and runoff, determined necessary reductions to meet water quality standards, and developed Total Maximum Daily Loads (TMDL's) that specify annual pollutant discharge limits for impaired waterways.

The Virginia Department of Environmental Quality has completed eight (8) local TMDL's that address water quality impairments in the following waterways:

- Browns Bay and Monday Creek
- North River
- Piankatank River and Harper Creek
- Severn River Watershed
- Ware River Watershed
- Poropotank River and Adams Creek
- Sarah Creek and Upper Perrin River
- York River shellfish waters (growing area 47)

An implementation plan has been developed for the

Piankatank River and the state with input from the County should develop similar plans for the other TMDL's to improve local water quality.

Chesapeake Bay-Wide TMDL's

The EPA has established a Total Maximum Daily Load for the Chesapeake Bay and its tidal tributaries to meet the Chesapeake 2000 Agreement's water quality goals, with impaired Chesapeake Bay segments remaining on the state's Clean Water Act Section 303(d) list. The Chesapeake Bay TMDL, released in 2010 and Virginia's Phase II Watershed Implementation Plan, completed in 2012, assigns nutrient allocations for nitrogen, phosphorus, and sediments by major river basins and requires reductions for these segments.³⁶ Gloucester is within the York River and Chesapeake Bay Coastal basins, with statewide allocations and reductions established in the Phase I Watershed Implementation Plan (WIP). Virginia's Phase II WIP includes allocation strategies for each basin and Chesapeake Bay TMDL implementation will occur between 2018 and 2025 following Phase III WIP establishment. This will require new development, redevelopment, and agricultural lands in all localities to reduce nutrient loads or follow best management practices (BMP's) to eliminate load increases over the life of the TMDL.

³⁶ <http://www.dcr.virginia.gov/vabaytmdl>

³⁴ 2012 305(b)/303(d) Water Quality Assessment Integrated Report

³⁵ <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments.aspx>

Table NR-8: Water Body Segments Not Meeting Quality Standards

Waterbody	Use Not Being Met	Impairment
Chesapeake Bay segment MOBPH (Mobjack Bay)	Aquatic Life	Aquatic Plants (Macrophytes)
Piankatank Mesohaline Estuary	Aquatic Life	Aquatic Plants (Macrophytes)
York Mesohaline	Aquatic Life	Aquatic Plants (Macrophytes)
York Polyhaline Estuary	Aquatic Life	Aquatic Plants (Macrophytes)
Tributary XEA of Bland Creek	Aquatic Life	Benthic-Macroinvertebrates
Chesapeake Bay segment MOBPH (Mobjack Bay)	Aquatic Life	Dissolved Oxygen
Craney Creek	Aquatic Life	Dissolved Oxygen
Dragon Swamp	Aquatic Life	Dissolved Oxygen
Fox Mill Run	Aquatic Life	Dissolved Oxygen
Northwest Branch of Severn River	Aquatic Life	Dissolved Oxygen
Piankatank Mesohaline Estuary	Aquatic Life	Dissolved Oxygen
York Mesohaline	Aquatic Life	Dissolved Oxygen
York Polyhaline Estuary	Aquatic Life	Dissolved Oxygen
York Polyhaline Estuary	Deep-Water Aquatic Life	Dissolved Oxygen
Dragon Swamp/Piankatank River	Fish Consumption	Mercury in Fish Tissue
Chesapeake Bay & Tidal Tributaries	Fish Consumption	PCB in Fish Tissue
Chesapeake Bay segment MOBPH (Mobjack Bay)	Open-Water Aquatic Life	Dissolved Oxygen
York Mesohaline	Open-Water Aquatic Life	Dissolved Oxygen
York Polyhaline Estuary	Open-Water Aquatic Life	Dissolved Oxygen
Craney Creek	Recreation	E. coli
Fox Mill Run	Recreation	E. coli
Fox Mill Run, UT	Recreation	E. coli
Northwest Branch of Severn River	Recreation	E. coli
Burke Mill Stream	Recreation	Enterococcus
Ferry Creek	Recreation	Enterococcus
Harpers Creek	Recreation	Enterococcus
Northwest Branch of Severn River	Recreation	Enterococcus
Northwest Branch of Severn River	Recreation	Enterococcus
Chesapeake Bay segment MOBPH (Mobjack Bay)	Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)
Piankatank Mesohaline Estuary	Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)
York Mesohaline	Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)
York Polyhaline Estuary	Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)

Source: DEQ, 305(b)/303(d) Water Quality Assessment Integrated Report for Virginia, 2013

Table NR-8: Water Body Segments Not Meeting Quality Standards (Continued)

Waterbody	Use Not Being Met	Impairment
Aberdeen Creek	Shellfishing	Fecal Coliform
Aberdeen Creek	Shellfishing	Fecal Coliform
Adams Creek	Shellfishing	Fecal Coliform
Back Creek	Shellfishing	Fecal Coliform
Belleville Creek	Shellfishing	Fecal Coliform
Carter Creek	Shellfishing	Fecal Coliform
Dancing Creek	Shellfishing	Fecal Coliform
Davis Creek	Shellfishing	Fecal Coliform
Free School Creek	Shellfishing	Fecal Coliform
Frenchs Creek	Shellfishing	Fecal Coliform
Heywood Creek	Shellfishing	Fecal Coliform
Jones Creek	Shellfishing	Fecal Coliform
North River	Shellfishing	Fecal Coliform
North River	Shellfishing	Fecal Coliform
Northwest Branch of Sarah Creek	Shellfishing	Fecal Coliform
Northwest Branch Severn River/ Vaughns Creek	Shellfishing	Fecal Coliform
Perrin River	Shellfishing	Fecal Coliform
Piankatank River, UT	Shellfishing	Fecal Coliform
Piankatank River/Harpers Creek	Shellfishing	Fecal Coliform
Poropotank River	Shellfishing	Fecal Coliform
Thorntons Creek	Shellfishing	Fecal Coliform
Timberneck Creek	Shellfishing	Fecal Coliform
Ware River	Shellfishing	Fecal Coliform
Ware River/Fox Mill Run	Shellfishing	Fecal Coliform
Wilson Creek	Shellfishing	Fecal Coliform
Wilson Creek	Shellfishing	Fecal Coliform

Source: DEQ, 305(b)/303(d) Water Quality Assessment Integrated Report for Virginia, 2013

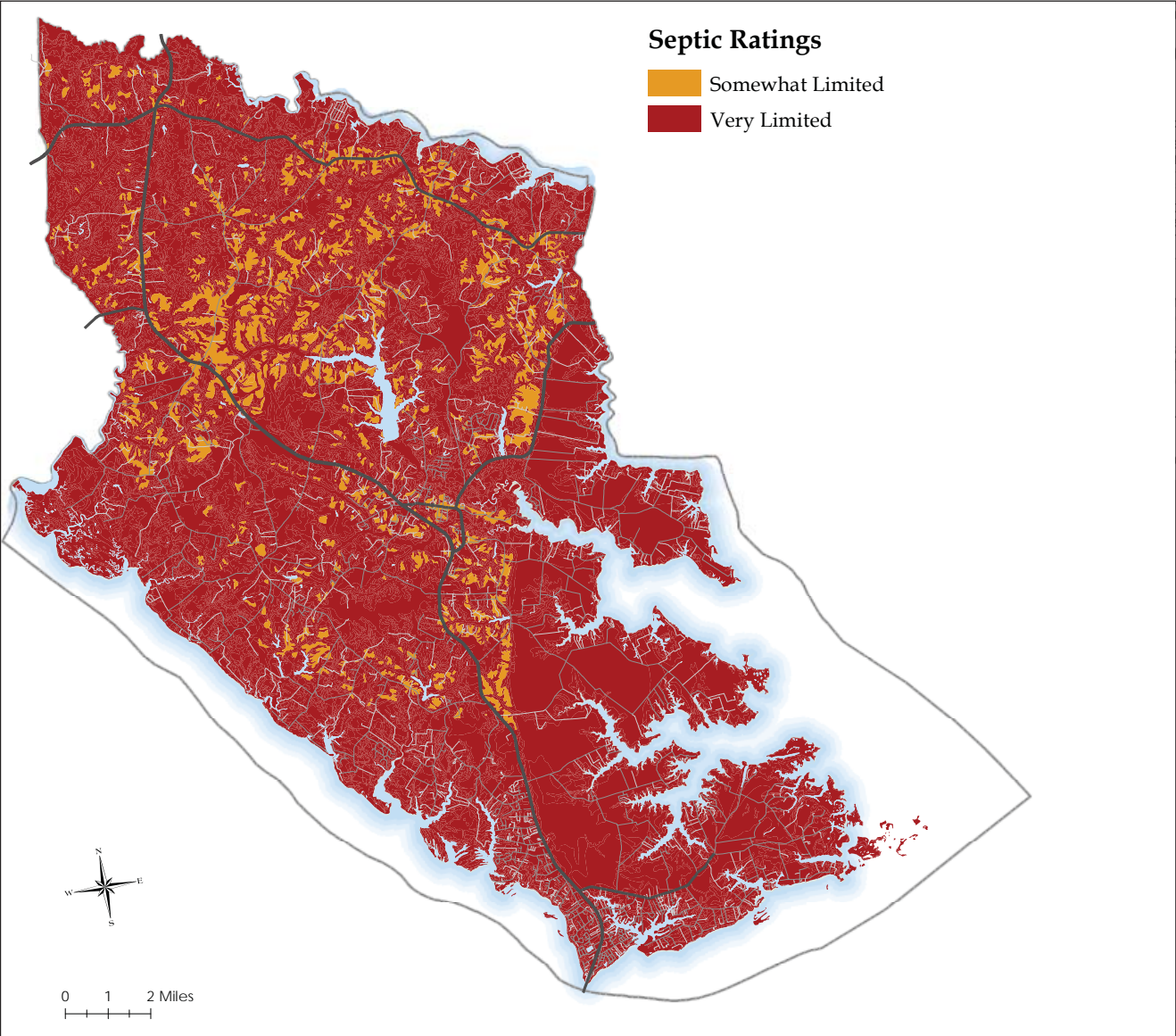


Oysters - Source: www.chesapeake-bay.org



Sheepshead - Source: www.chesapeake-bay.org

Map NR-19: Septic Tank Suitability



Data Source: Natural Resource Conservation Service Soil Survey for Gloucester County, Virginia

The Natural Resources Conservation Service (NRCS), within their soil surveys, assesses areas for limitations that could affect installation, use, and maintenance of septic tanks. These surveys categorize lands based upon their septic tank absorption field suitability, with ratings based upon factors such as saturated hydraulic conductivity, ponding, depth to water table, depth to bedrock, and flooding. A significant portion of the County is rated “very limited” for septic tank absorption field use and alternative septic systems may be required for development. Areas rated as **Somewhat Limited** have features moderately favorable for septic tank absorption field use and fair system performance can be expected with moderate maintenance costs. Areas that are **Very Limited** have one (1) or more features unfavorable for septic tank absorption field use and poor system performance can be expected with high maintenance costs. Septic tank suitability is discussed on pages 173-174.

Groundwater Protection

The Columbia Aquifer, an unconfined aquifer utilized locally, may not produce an adequate potable drinking water supply due to relatively low yields, poor water quality, and groundwater contamination occurrences, with the upper confined aquifers providing better drinking water. The Aquia and Potomac Aquifers likely contain brackish water requiring desalination and the Yorktown-Eastover and Piney Point Aquifers are the best local groundwater resources. The USGS domestic water use study estimated that 94% of wells serving individual homes or businesses are in the Yorktown-Eastover Aquifer or confining zone and 6% are in the Piney Point Aquifer, with approximately 1.87 million gallons per day used domestically.

Seven (7) high priority groundwater threats exist for Southeastern Virginia, including inefficient septic systems, leaky underground storage tanks, spills and improper hazardous materials disposal, leaky surface waste impoundments, leaky landfills, improper pesticide and fertilizer applications, and pumping-induced saltwater encroachment.

Local Groundwater Protection

Local government decisions, such as groundwater management plans that incorporate community-specific goals and management techniques (especially combined techniques) and reflect local groundwater protection needs, may also impact groundwater quality. The HRPDC Groundwater Protection Handbook for Southeastern Virginia provides groundwater management plan development guidance. Gloucester has already taken steps to minimize negative groundwater impacts from septic systems by requiring minimum drainfields for traditional septic tanks where soils can accommodate these systems. However, engineered alternative on-site sewage systems (AOSS) may allow for development where traditional septic systems are not suitable.

The Chesapeake Bay Preservation Area Ordinance also aims to preserve groundwater quality through mitigation measures, including best management

practices, vegetative buffers, Resource Preservation Areas (RPAs), and impervious cover limitations for development sites. These measures prevent surface and groundwater pollution and guide water percolation into aquifers.

In 2013, the state code was amended to include Gloucester as a locality within the groundwater management program, requiring a ten (10) year DEQ permit for large industrial users, such as paper mills, nurseries, or golf courses, that have withdrawals over 300,000 gallons per month. In state reviews of withdrawal requests, multiple factors are considered, including groundwater availability and withdrawal amount justification.

Potential Groundwater Pollution Sources

Defective Septic Systems

Failing or deficient sewage disposal systems can threaten surface and groundwater supplies if they release pesticides, herbicides, and household and septic tank cleaning products into groundwater systems or if nutrients, such as nitrogen and phosphorus, are dissolved in wastewater. The Chesapeake Bay Preservation Area Ordinance requires all conventional on-site sewage disposal systems to be pumped-out at least once every five (5) years, a process coordinated between the County's Environmental Programs Department and local septic system contractors, with notices sent to those needing pump-out services. The County holds periodic septic tank maintenance workshops and its Natural Resource Map and Assistance Guide, published in 1999, includes septic tank pump-out details. New lots are required to have primary and reserve drainfields outside the RPA and a reserve location is required for previously recorded lots where an acceptable site is available.

The Virginia Department of Health (VDH) has documented septic system issues during shoreline sanitary surveys, with failing septic systems of particular concern in southeastern Gloucester where hydric soils and wetlands exist. The Three Rivers

CHAPTER 7 - NATURAL RESOURCES

Health District has committed to addressing failing septic systems by tracking violations and instituting corrective measures through enforcement or cooperative septic repair efforts providing financial assistance through grants or low interest loans. However, properties lacking indoor facilities are not addressed in shoreline surveys and homes relying on outhouses are not cited unless the structure is unusable or dispersing sewage onto the ground surface. Currently, approximately 13,700 homes utilize private septic systems³⁷ and local septic systems experience a 10%-15% failure rate and a 20-year replacement rate.³⁸

In 2000, the state implemented new sewage disposal system installation measures to address groundwater resource treatment and protection, including requiring that existing septic system repairs comply to the greatest extent possible with these new standards.³⁹ Soil types in southeastern Gloucester necessitate engineered systems for sewage treatment prior to disposal, which may now be permitted where previously not possible. System installation may be more expensive than a traditional system and may require continual maintenance, which may not be financially feasible for some residents. If properly installed and maintained, pre-treatment systems are effective, but improper maintenance discharges effluent into surface and groundwater resources. In 2006, the County revised its Zoning Ordinance, requiring new lots under two (2) acres to connect to public water and sewer, in order to reduce the occurrence of failing septic systems on small lots.

In 2011, VDH adopted new alternative on-site sewage system (engineered septic system) standards, requiring drainfields that percolate similar to conventional septic systems and do not produce point source discharges. These systems can be installed on soils that do not support conventional systems through a general permit without requiring specific VDH approval. However, specific system operation and maintenance standards exist, including the following owner responsibilities:⁴⁰

1. Maintaining a system operator relationship
2. AOSS operation and maintenance
3. Regular AOSS operator visits
4. Sample collection by an operator
5. AOSS operator records available to VDH upon request and making a reasonable effort to transfer the records to any future owner
6. Operation and Maintenance (O&M) Manual kept on the property available to VDH upon request and making a reasonable effort to transfer the O&M Manual to any future owner
7. On-site sewage system requirement compliance with the Chesapeake Bay Preservation Act and the Chesapeake Bay Preservation Act Designation and Management Regulations if an AOSS is located within a Chesapeake Bay Preservation Area.

The standards also specify setbacks for drinking water sources, shellfish waters, sinkholes, and wetlands and require testing by a certified operator every five (5) years. This system may allow residential development where it was not previously possible, especially in the areas shown on Map NR-19 as having limited favorability for conventional septic systems due to multiple factors, including water table levels, bedrock depth, soil permeability, subsidence rates, and slope.

Leaking Underground Storage Tanks

Above and Underground Storage Tanks (UST's) contain hazardous substances, such as petroleum, gasoline, diesel fuel, acetone, or kerosene, and can be another pollution source when they corrode and leak, resulting in soil, groundwater aquifer, and local waterway contamination.

The Department of Environmental Quality oversees underground storage tanks and participates in annual, federally-funded Leaking Underground Storage Tank (LUST) clean-up. In 1998, LUST standards were established, requiring new tanks to be made of non-corrodible materials, equipped with overfill and spill prevention devices, and possessing prevention devices and leak detection equipment. Tanks existing prior to 1998 require replacement or retrofitting to meet these standards, which do not apply to residential UST's.

37 Gloucester County Commissioner of Revenue

38 Virginia Department of Health

39 12 VAC §5-610

40 12VAC5-613-140

The Department of Environmental Quality's 2015 database lists 97 local petroleum release sites, with three (3) sites open. Concentrations of LUST's are found in the Court House and Gloucester Point/Hayes areas as well as along Route 17.

Preventive measure requirements have been established to reduce leak risks for petroleum storage tanks used by businesses. The Building Inspection Department works with the state to implement UST and LUST permitting, monitoring, and inspection programs.

Solid Waste Management Facilities

Gloucester currently has three (3) solid waste management facilities and the Middle Peninsula Landfill and Recycling Facility, located on Route 17 in Adner, is permitted as an active landfill, transfer station, and yard waste composting facility. The former County landfill, located in the Court House area along Beehive Drive, was closed in 1994 and has been capped to meet state and federal post-closure requirements. In addition to the existing landfill, Waste Management operates five (5) local waste disposal convenience centers, as shown on Map CF-5:

- Adner-Glenns (3714 Waste Management Way)
- Belroi (5122 Hickory Fork Road)
- Court House (6550 Beehive Drive)
- Dutton (10403 Burkes Pond Road)
- Hayes (7599 Guinea Road)

These centers serve the County's residential and business waste disposal and recycling needs. The County's Clean Community Program, in partnership with Waste Management, sponsors a harmful household waste collection biannually, with collection and disposal aiming to reduce water resource impacts resulting from improper dumping.

Canon Environmental Technologies, located in the County's industrial park, and Joseph Harris Tire Disposal, located on Crab Thicket Road, are local materials recovery facilities permitted through the state's procedural requirements.

Land Conversion and Use Conflicts

Gloucester's higher population growth and residential development rates compared to other Middle Peninsula localities, facilitated by its connection to Hampton Roads, may result in agricultural, forested, and natural land conversion to residential developments. Agriculture and water-based lifestyles, especially along the York River and Chesapeake Bay, are fundamental to Gloucester's identity and it is important to preserve working lands and reduce residential land use conflicts as the County continues to grow. This Comprehensive Plan and the ensuing actions aim to address these issues while promoting appropriate development that complements Gloucester's natural resources.

Land preservation provides many benefits, such as creating jobs and supporting the County's history and identity. Options include agritourism, ecotourism, and cultural and historic tourism, which support the local economy, promote the County's resources and identity, and increase economic potential, all while benefiting the natural environment.

CHAPTER 7 - NATURAL RESOURCES

Goal NR-1: Preserve Gloucester's rural character.		
Objectives	Implementation Strategies	Time Frame
Encourage growth away from areas such as farms and other working lands	Zone for increased density and development in the Development District and Village Areas	Short Term
Identify areas that should be protected as working lands and zone them accordingly	Maintain Agricultural Zoning for Working Lands and develop a Working Waterfront Zoning District	Short Term
Consider the creation of a Transfer of Development (TDR) or Purchase of Development Rights (PDR) program incentivize working land preservation	Initiate a study to determine appropriate transfer and receiving areas as well as determine incentives and a process for the use of TDR or PDR	Long Term
Allow working lands as part of the open space requirement for cluster developments	Modify the Zoning Ordinance related to cluster development and agricultural, forestry, and water uses	Short Term
Consider the creation of a Purchase of Agricultural Conservation Easements program to provide incentives to preserve working lands	Work with local land trusts and state agencies to encourage Conservation Easements	Short Term
Encourage new forms of agriculture and natural resources-based businesses such as agritourism	Modify the Zoning Ordinances to encourage and support natural resource-based businesses	Short Term
	Promote and provide support for natural resource-based businesses	Short Term
Encourage development in areas where public utilities such as water and sewer are provided	Zone for increased density and development in the Development District and Village Areas	Short Term
	Develop incentives for connection to public water and sewer	Long Term

Goal NR-2: Protect and improve water quality.		
Objectives	Implementation Strategies	Time Frame
Restore the quality of Gloucester's surface waters to meet standards for swimming, shellfish harvesting, and other uses	Work with the State to develop TMDL's for impaired waterways	Long Term
	Work with the State to develop TMDL implementation plans for impaired waterways to reduce current nutrient loads and offset future loads	Long Term
	Implement water quality BMP's on public riparian properties	Long Term
	Encourage the implementation of water quality BMP's on private property	Short Term
Work with state and regional agencies to educate farmers and residents about and encourage the use of agricultural and other best management practices, nutrient management planning, and available state and federal cost-share programs	Partner with other agencies to inform and educate the community	Short Term
	Provide continued information and education during staff interaction with the public	Ongoing
Support state and regional agencies that educate farmers and residents about proper fertilizer and pesticide use and efficient irrigation and watering practices to protect surface and groundwater resources	Continue to support agencies that provide these resources for the community such as the Cooperative Extension and Tidewater Soil and Conservation District	Ongoing
Utilize a growth management strategy to protect groundwater recharge areas and surface water sources	Identify appropriate groundwater protection areas	Short Term
	Identify appropriate buffers for the protection of surface water sources	Short Term
	Implement low-density zoning near groundwater recharge areas and surface water sources	Short Term
Work with the Virginia Department of Health and other agencies to address issues with failing septic systems and their replacement through alternative designs or connections to the County's sewer system	Support and promote low-cost loan and replacement grants offered by other agencies and non-profit groups	Short Term
	Continue to seek enabling legislation from the General Assembly to allow the County to require mandatory connections to public water and sewer if the County invests in extending the system to address failing septic systems	Long Term

CHAPTER 7 - NATURAL RESOURCES

Goal NR-2: Protect and improve water quality. (Continued)		
Objectives	Implementation Strategies	Time Frame
Work with the Virginia Department of Health and other agencies to educate residents about the importance of maintaining septic systems, both conventional and alternative	Continue educational outreach regarding septic maintenance through a multimedia approach and through staff interaction during permitting and inspection	Short Term
Consider the use of impaired water bodies as the basis for watershed management planning to improve water quality based on the source of the impairment	Participate in the state's preparation of Implementation Plans for local impaired water bodies	Short Term
	Coordinate land use plans and development proposals with recommendations found in TMDL implementation plans	Long Term
Consider water quality benefits when deciding when and where to extend public water and sewer infrastructure	Coordinate with VDH to identify areas most susceptible to failing septic systems	Short Term
	Develop a cost-benefit analysis tool to determine the effectiveness of extending public utilities and the costs to the environment and the economy of impaired water bodies	Long Term
Consider impacts to water quality caused by private and public development decisions, including capital project and public improvements	Ensure compliance with the Stormwater, Erosion and Sediment Control, and Chesapeake Bay Preservation Ordinances on all projects	Ongoing
Encourage or require nutrient management plans for agricultural and land-based uses (such as athletic fields, golf courses, parks, etc.)	Support and promote educational efforts of regional agencies such as the Tidewater Soil and Conservation District	Ongoing
	Develop Nutrient Management Plans for public properties	Long Term
	Encourage developers to provide nutrient management plans and maintenance on private developments	Short Term
Consider the adoption of a Clean Marina program	Support and promote participation in the state's program	Short Term
Identify areas as appropriate for designation as "No Discharge" zones	Explore the possibility and requirements to establish "No Discharge" zones	Ongoing
	Develop the process for designation and evaluate the resources needed to implement "No Discharge" zones	Short Term

Goal NR-2: Protect and improve water quality. (Continued)		
Objectives	Implementation Strategies	Time Frame
Continue to work with the state to register existing and proposed underground storage tanks and identify leaking tanks through the building permit process	Maintain active database of UST's and enforce corrective action on Leaking UST's	Ongoing
Designate watershed management areas and consider impacts to watersheds when reviewing development proposals	Develop Watershed Management Plans for each watershed in the County	Long Term
Monitor the location and effectiveness of stormwater Best Management Practices to implement the County's Chesapeake Bay Total Maximum Daily Load Watershed Implementation Plan	Inventory existing BMP's in the County	Ongoing
	Develop and maintain a database of BMP's	Short Term
	Monitor the effectiveness of the existing BMP's	Long Term
	Monitor and enforce long-term maintenance of BMP's	Long Term
Goal NR-3: Protect air quality.		
Objectives	Implementation Strategies	Time Frame
Promote alternative modes of transportation such as walking, bicycling, and carpooling to reduce congestion and automobile emissions	Allow and encourage pedestrian scale development in Village Areas	Short Term
	Encourage carpooling through maintenance of park and ride lots	Short Term
	Support local carpooling and transit providing agencies	Ongoing
	Promote and enforce local and state burning ordinances	Ongoing
Encourage the preservation of existing tree canopy on new developments and redevelopments	Evaluate and modify local ordinances to provide for tree protection and canopy cover	Long Term
	Provide incentives for tree preservation	Short Term
Encourage the planting of trees and native vegetation on public and private property	Coordinate with state and regional agencies to identify appropriate native plants	Short Term
	Provide incentives for use of native species in new developments	Short Term

CHAPTER 7 - NATURAL RESOURCES

Goal NR-4: Conserve and manage Gloucester's natural resources.		
Objectives	Implementation Strategies	Time Frame
Consistently and effectively enforce and implement the Zoning, Subdivision, Stormwater, Erosion and Sediment Control, Wetlands, Floodplain, and Chesapeake Bay Preservation Ordinances	Review and modify development ordinances for effectiveness and efficiency	Ongoing
Continue to process development applications such that the early identification of wetlands in the development process is ensured	Use available on-line resources to determine the potential for wetlands	Ongoing
	Work with local, state, and federal agencies to evaluate properties for potential impacts and design developments to reduce impacts where possible	Ongoing
Support the Virginia Department of Conservation and Recreation in conducting additional natural heritage and habitat planning studies of the County's natural resources	Consider impacts to natural heritage features and species in future planning efforts	Long Term
Prepare a Countywide open space and natural resources inventory and evaluation as a baseline for an open space plan, which would guide the County's land use, preservation, and infrastructure decisions	Develop a green-infrastructure plan for the county or for various regions within the county	Long Term
Protect and preserve open space through ordinances and policies	Develop incentives for cluster development in areas used for agriculture or conservation lands	Long Term
	Consider the use of a Conservation Zoning Ordinance to require critical natural resource features to be preserved during development	Long Term
	Create a Green Infrastructure Plan identifying open spaces and potential connections	Long Term
	Review Ordinances to better define "open space" and provide appropriate protection based on the use of the open space as buffers, natural habitat, or recreation areas	Short Term

Goal NR-4: Conserve and manage Gloucester's natural resources. (Continued)		
Objectives	Implementation Strategies	Time Frame
Protect wetlands and other natural resources from unnecessary destruction due to drainage, filling, or construction that would unnecessarily hamper or destroy vegetation, water storage, erosion control, or plant and wildlife habitats	Work with developers and other agencies to design projects to minimize impacts	Ongoing
Evaluate opportunities to educate residents about the benefits of preserving and protecting natural resources	Promote and support local and regional opportunities and agencies that inform residents about the local environment and the benefits provided by natural resources	Ongoing
Promote public awareness and community participation in natural resources protection through educational programs and events	Continue collaborative educational efforts and events in the county and look for opportunities for new events and programs that promote the county's abundant natural resources	Short Term
Identify appropriate sites for public waterfront access and boating facilities and preserve those that exist	Inventory existing public access sites and identify their current and potential uses	Long Term
	Work with the Chesapeake Bay Public Access Authority, FEMA, and other agencies to identify new site for public access	Ongoing
	Develop management plans for open space and public access parcels	Long Term
	Develop a county policy for acquiring new sites through dedication, donation, or acquisition	Long Term

CHAPTER 7 - NATURAL RESOURCES

Goal NR-5: Address impacts related to Sea Level Rise and Recurrent Flooding.		
Objectives	Implementation Strategies	Time Frame
Protect residents and County assets from sea level rise and recurrent flooding impacts	Apply the recommendations within the Floodplain Management Plan, Open Space Plan, and Natural Hazards Mitigation Plan	Short Term
	Review and regularly update the Floodplain Management, Open Space, and Natural Hazards Mitigation Plans	Ongoing
	Continue participation in region discussions and planning efforts regarding sea level rise and recurrent flooding	Ongoing
	Consider sea level rise and recurrent flooding in County-funded projects	Short Term
Maintain citizens' ability to continue everyday activities	Continue participation in the Community Rating System	Ongoing
	Provide educational opportunities to minimize impacts on citizens' lives	Ongoing
	Review and update the Zoning, Subdivision, Stormwater, Erosion and Sediment Control, Wetlands, Floodplain, and Chesapeake Bay Preservation Ordinances as appropriate	Long Term
	Direct growth away from vulnerable areas	Long Term



Battle of the Hook Reenactment - Source: Gloucester Parks, Recreation & Tourism

CHAPTER 8

Cultural and Historic Resources

Established over 360 years ago, Gloucester County is one of the oldest continuously settled jurisdictions in the country. Gloucester has maintained a rural character throughout most of its existence, but recent decades have seen increased growth and development. This change brings increased local economic vitality along with related planning challenges, including preserving important historic and cultural sites, structures, and districts. Historic resource preservation is supported in this Comprehensive Plan by clear goals and objectives prioritized to promote resource protection for their continued use and enjoyment by Gloucester's citizens and visitors.

Gloucester's Rich History

The Powhatans were the earliest local residents, with their capital located at Werowocomoco, on the north shore of the York River near Purtan Bay. Chief Powhatan

ruled over the Eastern Virginia Native Americans and interacted with English colonists exploring Gloucester shortly after Jamestown's settlement in 1607. In addition, the legend of Pocahontas helping to save Captain John Smith's life originated at Werowocomoco, where they likely met.

Gloucester was part of the eight (8) original shires of Virginia established in 1634, though the county was officially formed from York County in 1651. Named for Henry Stuart, Duke of Gloucester and son of King Charles I, the earliest local land patents were granted in 1639 with subsequent settlement proceeding rapidly. By the mid-17th century, Gloucester was a major tobacco producer primarily settled with major plantations. A number of these colonial buildings have survived, such as the Ware and Abingdon Episcopal Churches and the Colonial Courthouse in the historic Court Circle, or are preserved as archaeological sites, such as the Fairfield Plantation.

Since the County was established, many historically significant events have occurred within its borders,



Battle of the Hook Reenactment at Warner Hall - Source: Gloucester Parks, Recreation & Tourism

including Nathaniel Bacon's passing in 1676 following Bacon's Rebellion and retreat from Jamestown. In addition, Tyndall's Point, near Gloucester Point, was originally built in 1667 and reinforced as an important military stronghold through two (2) major wars. During the Siege of Yorktown and Gloucester, the Battle of the Hook, occurring along several miles of the current U.S. Route 17 from Seawell's Ordinary to Gloucester Point/Hayes, played a crucial role in the surrender of Cornwallis' forces. Gloucester Point was the scene of Cornwallis's "Second Surrender" after Cornwallis' forces laid down their arms in Yorktown. It later served as a re-fortified Confederate Army position during the Civil War before falling to the Union and utilized as an operations base and gathering point for former slaves during the war.

Gloucester was also home to several prominent citizens, including George Washington's ancestors, most notably his grandmother, who resided at Warner Hall. In addition, Rosewell, once a home to John Page (a Virginia Governor and U.S. Congressman), was one of the largest Virginia estates prior to being destroyed by a fire in 1916. Thomas Jefferson often visited this estate and attended services at Abingdon Episcopal

Church, occasionally with Washington. Lewis Burwell I settled at Fairfield in 1651 where he produced tobacco. Fairfield stayed in the family for several generations. Burwell's great-grandson, known as Lewis Burwell I/II, was named to the governor's council and served as Acting Governor of the Colony in 1751.¹

Other notable Gloucester residents are John Clayton, an 18th century botanist who had a wildflower named after him, and Dr. Walter Reed, an Army surgeon who made discoveries about yellow fever, leading to medical advancements that ultimately allowed the Panama Canal to be built. Additionally, several influential 20th century African-American leaders, such as Robert R. Moton, a Hampton Institute educator and Tuskegee Institute principal who retired to Holly Knoll, a "think tank" for African-American advancement along the York River in Cappahosic. Thomas Calhoun Walker, a former slave, gained an education at the Hampton Institute. Walker later became the first African-American lawyer in Gloucester and served two (2) terms on the Board of Supervisors. He also served as the superintendent of the Negro Schools of Gloucester County, without pay, in order to ensure education for

¹ Thomas Jefferson Foundation



Historic Abingdon Church with daffodil plantings - Source: David Girard & Gloucester Parks, Recreation & Tourism

members of the community. In addition, Gloucester was the home of Irene Morgan who, in 1944, refused to give up her bus seat to a white man. Thurgood Marshall argued and won Morgan's case in 1946 before the United States Supreme Court. While the resulting law was not clear-cut, Morgan's efforts paved the way for Rosa Parks to make a similar stand more than a decade later.

Likewise, agricultural resources have played an important role in local history, including daffodils, which were first brought here with the original colonists in the 17th century. Although bulbs could be found throughout the County during the springtime, the first commercial daffodils were not harvested and shipped until the late 19th century. Shortly thereafter, Gloucester became known as the "Daffodil Capital of the World" in the 1930's and 1940's, bringing tourists and media, until the decline of the local daffodil industry. The importance of the daffodil to the history of the County is honored each spring during the Daffodil Festival.

Protection and Preservation Programs

Historic preservation enhances community character and reflects a community's civic pride. There are multiple historic preservation methods and many opportunities exist through protection, preservation, tax benefits, and professional historical/architectural consulting. Gloucester should continue to explore and promote these programs in collaborative efforts to preserve the County's history.

National Register of Historic Places

The National Register of Historic Places (NRHP), created in 1966 and administered by the National Park Service (NPS), is intended to document properties important to United States history. Historic property registration provides numerous benefits, including tax credits, maintenance or rehabilitation technical assistance, and the ability to donate historic preservation easements. Register inclusion does not

Table HR-1: Officially Designated Gloucester County Historic and Cultural Resources

Property	VLR	NRHP	Historic Preservation District
Rosewell	11/5/1968	10/1/1969	Yes
Toddsbury	9/9/1969	11/12/1969	Yes
Abingdon Church	7/7/1970	9/15/1970	Yes
Abingdon Glebe House	7/7/1970	9/15/1970	Yes
Little England	10/6/1970	12/18/1970	Yes
Lowland Cottage	4/6/1971	9/22/1971	Yes
Roaring Springs	8/15/1972	9/22/1972	Yes
Ware Parish Church	10/17/1972	3/20/1973	Yes
Fairfield Site	2/20/1973	7/16/1973	Yes
Gloucester County Courthouse Square Historic District	2/20/1973	10/3/1973	Yes
Walter Reed Birthplace	4/17/1973	9/20/1973	Yes
Gloucester Women's Club	11/20/1973	1/24/1974	Yes
Lands End	9/17/1974	11/6/1974	Yes
Burgh Westra	4/20/1976	10/8/1976	Yes
Kempsville	9/20/1977	12/21/1978	Yes
Timberneck	6/19/1979	9/10/1979	Removed per rezoning 5/9/2009
Warner Hall	6/17/1980	11/25/1980	Yes
Holly Knoll/Robert R. Moton House*	3/16/1982	12/21/1981	Yes
White Hall	5/15/1984	8/16/1984	No
Gloucester Point Archaeological District	4/21/1987	6/10/1985	No
Shelly Archeological District	8/15/1989	7/12/1990	No
Airville	10/16/1990	12/6/1990	No
Zion Poplars Baptist Church	6/16/1999	8/5/1999	No
Cappahosic House	12/4/2002	4/11/2003	No
Woodville School	12/3/2003	2/11/2004	No
Werowocomoco Archaeological Site	12/7/2005	3/15/2006	No
Quest End	3/20/2008	5/9/2008	No
Ware Neck Store and Post Office	3/18/2009	6/3/2009	No
TC Walker House	9/17/2009	12/4/2009	No
Hockley	3/18/2010	7/9/2010	No
Gloucester Downtown Historic District	9/30/2010	12/27/2010	No

* This site is also a National Historic Landmark. Source: Virginia Department of Historic Resources

directly affect property values or taxes, but specific guidelines must be met to receive the aforementioned benefits. In addition, National Register designation may provide certain commercial uses relief from some modern building code requirements.

Virginia Landmarks Register

The Virginia Landmarks Register (VLR), established in 1966 and administered by the Virginia Department of Historic Resources (DHR), is the state's official list of Virginia historical properties. Property seeking NRHP nomination must first obtain VLR designation, which has similar criteria to the National Register. There are currently 31 local properties listed in the VLR and NRHP, as shown on Table HR-1.

National Historic Landmarks

The County is home to one (1) National Historic Landmark (NHL), the Robert R. Moton House (Holly Knoll). This program recognizes nationally significant historic properties demonstrating an exceptional value in interpreting United States heritage.

Virginia Historic Preservation Easements

Since most state-recognized historic landmarks are owned privately, they are more vulnerable to loss or deterioration. The Virginia Historic Preservation Easement Program allows historic property owners to establish an easement, letting a property to remain in ownership while protecting it from future development. The owner may also receive financial benefits, such as inheritance or personal property tax reduction. Currently, five (5) historic easements are established locally: Burgh Westra, Roaring Springs, Cappahosic House, Rosewell, and Gloucester Women's Club, as shown on Map HR-1.

Historic Overlay District

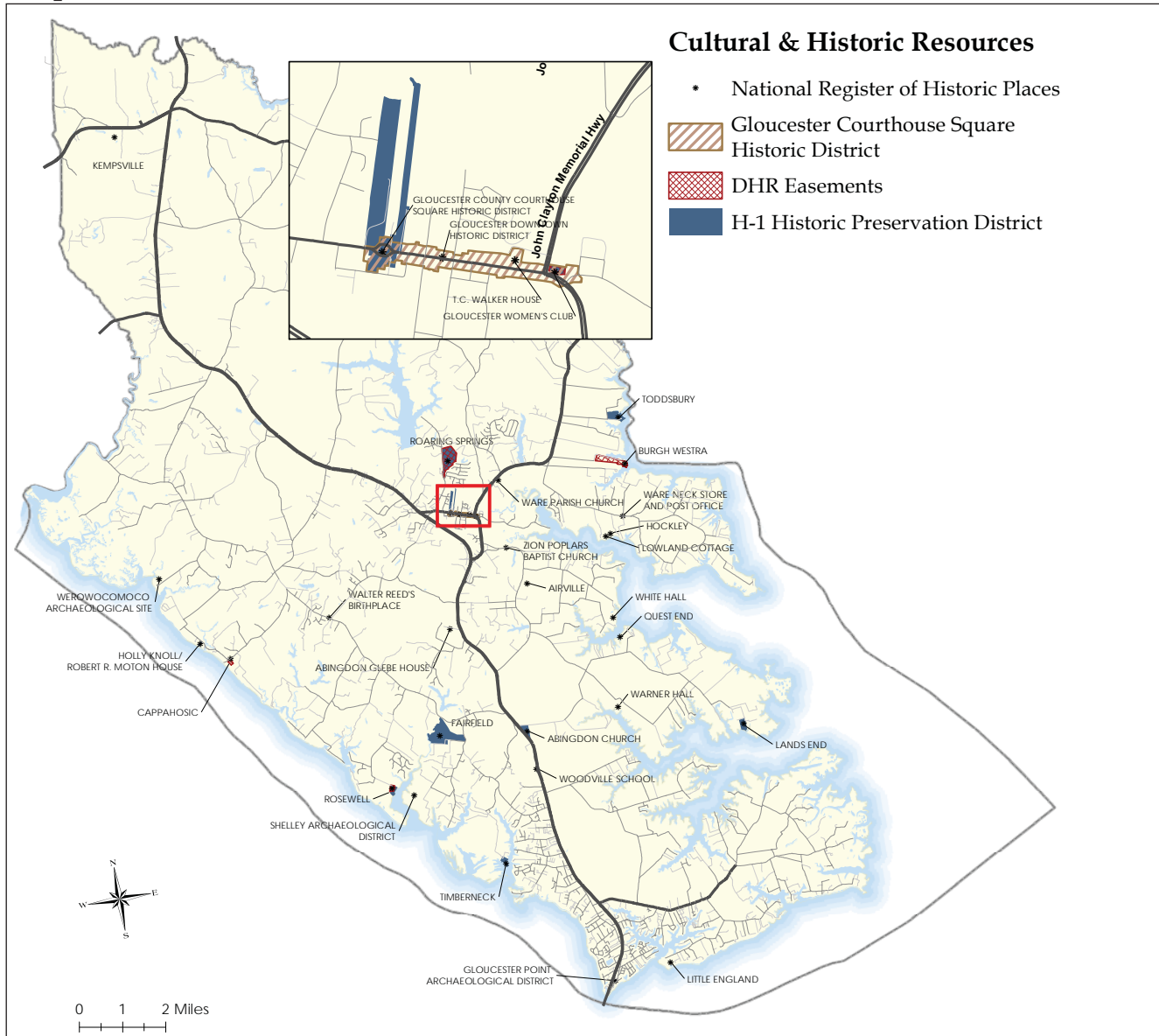
Gloucester's 2015 Zoning Ordinance includes a Historic Overlay District (H-1), shown on Map HR-1. This overlay district, created in 1984, was established to protect historical structures or sites that contribute to Gloucester's heritage. The County's Historical Committee reviews applications for construction, demolition, or alteration within the district and advises property owners within the Historic Preservation District on property maintenance, including requirements mandated by DHR's historical easements. This district contains properties listed on the NRHP during the district's enactment and, although sites have not been added since, new properties can be included if rezoned.

Many individual sites throughout the County are listed in the Historic Overlay District and the Courthouse Square Historic District is the only local multi-parcel site. As the community has desired that private historic properties preservation efforts occur through incentives instead of regulations, the Committee's role is somewhat limited. Structural adaptive re-use, the most common preservation technique, is encouraged along with any other applicable methods.

Non-Profit and Private Preservation

Other non-profit or private preservation and maintenance opportunities are available for local historical and archaeological resources. Examples include Preservation Virginia's previous ownership and maintenance of Walter Reed's Birthplace, Warner Hall and the Toddsbury properties' private operation as a country inn and bed and breakfast, respectively, and preservation efforts by the Rosewell and Fairfield Foundations. Though the Historical Society has contributed to several historic site and structural preservation initiatives, rehabilitation and long-term maintenance costs often exceed private, non-profit financial and personnel resources. A coordination of these groups could provide increased synergy and efficiency while helping private property owners obtain historic preservation benefits.

Map HR-1: Cultural and Historic Resources



Data Source: Gloucester County, Virginia Department of Historic Resources

Gloucester County is home to many cultural and historic treasures. Originally established over 360 years ago, Gloucester County has witnessed many of the nation's most historic events, including the Colonial Era and the Revolutionary and Civil Wars. Many historic structures and areas remain from these time periods. There are several programs which help the county preserve and protect its cultural and historic resources. These include the National Register of Historic Places, the Virginia Landmarks Register, the National Historic Landmarks Program, Virginia Historic Preservation Easements, Gloucester's Historic Overlay zoning district, and preservation by various non-profit entities.

Cultural and historic resource preservation programs are discussed on pages 185-187. Cultural and historic resources are discussed on pages 189-191.

Historic and Cultural Resources

The numerous historic properties, districts, and archaeological sites preserved for their local, state, and national importance reflects Gloucester's rich history. The following unique historical and cultural resources have been found within the County.

Historic Sites and Structures

Gloucester includes several cultural and historic resources of statewide and national importance, some of which are established in the local Historic Preservation District, as listed in Table HR-1. There are also many local historically and culturally significant sites that may be eligible for the VLR and NRHP but are not yet listed. It is important that the County identify these sites and plan for their preservation. Local historic resource inventory should assess the site or district's historical or cultural importance and recommend the necessary preservation tools, such as voluntary easements, land use measures, zoning, and

There are thirty-one (31) sites in Gloucester County that are listed on both the National Register of Historic Places and the Virginia Landmarks Register. Examples of registered properties include Abingdon Church, the Courthouse Square Historic District, the Downtown Historic District, White Hall, Ware Neck Store and Post Office, and the T.C. Walker House. Seventeen (17) of these sites are also designated as Historic Overlay Districts according to the County's Zoning Ordinance. The Virginia Department of Historic Resources owns five (5) historic easements in Gloucester. The Robert R. Morton House (Holly Knoll), in addition to being on both the National and Virginia Registers, is also designated as a National Historic Landmark, signifying that it demonstrates an exceptional value in interpreting the heritage of the United States.

greenways, among others. As Historical Committee members work with the Departments of Planning & Zoning and Information Technology to compile this inventory, this information can also be used for educational, research, and tourism opportunities.

Historic Districts

Gloucester contains two (2) historic districts listed on the NRHP and VLR, both located in the downtown Court House area.

The **Gloucester County Courthouse Square Historic District** is found along Main Street, providing an example of an early Virginia county seat complex. The large green, enclosed by a red brick wall, comprises a circular courtyard with five (5) buildings: an old debtor's prison, a jail, the Roane Building, the Clayton Building, and the 1766 courthouse, and is surrounded by other historic structures, including "lawyer's row," the Botetourt Hotel, and the Birkhofer Building. The County owns and maintains the Court Circle buildings, the courthouse is used for local public meetings, and this building and others within the Court Green are open to the public during the day.

The **Gloucester Downtown Historic District** contains seven (7) Main Street blocks from the Court House Circle to Ware House Road and demonstrates characteristics of both an independent rural Colonial town and modern day Main Street. This District, nominated by the Main Street Preservation Trust (MSPT) based on the Gloucester Court House Village Sub-Area Plan's recommendations, was achieved to encourage Main Street's commercial property owners to take advantage of structural maintenance and improvement tax incentives within the district.²

Archaeological Resources

Archaeological resources include specific areas where previous human life or activities of a certain age and historical significance warrant special protection. Careful study gives insight into previous generations and site disturbance may result in a loss of these resources. Although many local archaeological sites

² Gloucester Court House Village Sub-Area Plan



Water Battery at Gloucester Point - Source: Gloucester Parks, Recreation & Tourism

have been identified, two (2) major areas contain outstanding archaeological resources.

The **Gloucester Point Archaeological District**, located on Greate Road and Route 17 near Gloucester Point, includes portions of Tyndall's Point Park, remnants of Confederate and Union fortifications, and the original colonial Gloucestertown site. The Virginia Institute of Marine Science (VIMS) campus is located on the western half of colonial Gloucestertown.

Werowocomoco, a Native American village located on Purtan Bay, was the Powhatan chiefdom capital, governed by Chief Powhatan at the time Jamestown was settled in 1607 by the English. Werowocomoco was abandoned in 1609 to move away from English colonists and the site is reported to be where Captain John Smith was held and later rescued by the chief's daughter, Pocahontas. Smith's notes, maps, and other historic documents combined with field research conducted since 2003 have confirmed this location. This site is located on private property, but the current

owners have allowed continued study and the site was added to the NRHP in 2006.

Gloucester does not currently have requirements for determining potential impacts on archaeological or cultural resources during development. Cultural Resource Surveys (CRS) are sometimes requested during rezoning proposals, but this is a voluntary proffer by the applicant. The County formed a committee to evaluate the opportunity to utilize Cultural Resource Surveys, but subsequent efforts did not gain the necessary support and the Board voted to not pursue requirements for archaeological assessment at their May 21, 2013 meeting.

One item identified by the committee's work was the ability for archaeological assessments to assist staff and decision makers in determining potential CRS candidate areas, informing developers of historically and culturally important areas that may warrant additional study and planning. Survey utilization could encourage developers to preserve these cultural



Gloucester Museum of History - Source: Gloucester Parks, Recreation & Tourism

resources through clustering, density bonuses, or other means allowing for increased site and lot design flexibility in return for cultural resource protection.

tourism opportunities, such as driving tours, festivals, historic homes, and museums. The following cultural heritage programs and facilities are already established in the County.

Cultural Heritage Tourism

Cultural heritage tourism, traveling to experience the places, artifacts and activities that authentically represent the stories and people of the past and present,³ includes tourism for cultural, historic, and natural resources. Tourism as an economic development tool can effectively promote both culture and heritage. Heritage tourism provides economic benefits through new businesses, jobs, and increased property values while cultural heritage tourism also offers residents' a higher quality of life and promotes community pride.

Gloucester has developed several cultural heritage

Gloucester Museum of History

The Gloucester Museum of History is housed in the Botetourt Building, a late-18th century structure originally constructed as a tavern or ordinary, but also used as a hotel and County administration building. This museum houses several permanent exhibits throughout the year and also showcases traveling or seasonal exhibits.

Gloucester Visitors Center

The Visitors Center, located in the Roane Building (built in 1894 and formerly housed the Clerk's Office) within

³ National Trust for Historic Preservation

CHAPTER 8 - CULTURAL AND HISTORIC RESOURCES

the Court Green, is staffed by volunteers coordinated by the Department of Parks, Recreation, and Tourism. In 2014, this department initiated a request for proposal to establish a second visitor's center through a public-private partnership at a private business that would meet the state's requirements. The designation was awarded to Whitley's Peanuts in Gloucester Point, which helps to capture visitors entering the County from the Coleman Bridge. Both centers are certified through the Virginia Tourism Corporation.

Historic Tours

Gloucester's three (3) driving tours offer residents and visitors a chance to see sites highlighting different aspects of the local history and culture. The African American Heritage Trails Tour visits several African American historical sites that have influenced the County's past. The History and Adventure Trail is a seasonal program leading visitors to several local historic properties. The Driving Tour of Gloucester County's Country Stores and Rural Post Offices covers sites illustrating early rural life for Gloucester residents.



Thomas Calhoun Walker, the first black man to practice law in Gloucester County; served 2 terms on the Board of Supervisors 1891-1895 - Source: BlackPast.org

The Virginia Civil War Trails is a statewide driving tour with two (2) stops in Gloucester at Tyndall's Point Park, where Confederates fortifications and earthworks helped block General George McClellan's efforts during the Peninsula Campaign, and the Court Green on Main Street.

Table HR-2: Historical Markers in Gloucester County

Marker Title	Year Placed	Type
King and Queen County/ Gloucester County	1928	State
Gloucester Courthouse	1928	State
Gloucester Point	1928	State
Middlesex County/Gloucester County	1928	State
Warner Hall	1928	State
Rosewell and Werowocomoco	1928	State
Tarleton's Last Fight	1928	State
To Gwynn's Island	1928	State
Ware Church	1928	State
Early Land Patent	1930	State
Abingdon Church	1935	State
Cappahosic (2)	1948	State
Robert Russa Moton	1991	State
United Negro College Fund	1993	State
Rosewell	1997	State
Gloucester Agricultural & Industrial School	2000	State
Zion Poplars Baptist Church (2)	2000	State
Bethel Baptist Church	2001	State
Dr. Walter Reed's Birthplace	2001	State
Gloucester Training School	2001	State
Governor John Page	2001	State
Fairfield	2003	State
Women Air Force Service Pilots	2010	State
Nuttall's Store	2014	Local
Edge Hill House	2015	Local

Source: Virginia Department of Historic Resources (<http://dhr.virginialgov/Historicmarkers/>), Gloucester County Department of Parks, Recreation, and Tourism



2018 Daffodil Festival - Source: Gloucester Parks, Recreation & Tourism

The Captain John Smith Chesapeake National Historic Trail has identified several interpretive locations in the County on both land and water. Gloucester Point is designated as a Gateway to the York River section and the John Smith Trail follows routes taken by John Smith during several Chesapeake Bay explorations between 1607 and 1609, such as Capahosic Landing, Werowocomoco, Poropotank, and Rosewell.

Historical Markers

Gloucester includes several historical highway markers installed through the DHR Historical Marker Program, providing historical education opportunities while promoting local tourism. New markers can be established for places, events, or persons with over 50 years of historical significance.

Similarly, Gloucester's Department of Parks, Recreation, and Tourism administers a local Historic Marker Program for properties that add significant

historical value for the County's residents and visitors. New markers are established based upon guidelines similar to those used by DHR and two (2) local properties have been recognized. Table HR-2 lists the existing historical markers in the County.

Festivals and Other Events

The Daffodil Festival, an annual event held in the Spring, celebrates the local history and importance of daffodils, which date back to the County's original English settlers. This weekend event features various activities, including a parade, 5K run, classic cars, live music, and Daffodil Queen crowning, among others.

Additional cultural events include the Historic Garden Week, Guinea Jubilee, Renaissance Festival, and military reenactments, such as the Battle of the Hook, which has drawn thousands of visitors from throughout the country and beyond.

Linking Cultural, Historic, and Natural Resources

Gloucester contains significant natural resources that contribute to the local cultural history. Green infrastructure links areas of ecological significance through linear green spaces (corridors), such as conservation lands, open space, working forests, farms, historic areas, parks, stream buffers, scenic byways, and hiking trails. Existing local historic, cultural, and natural resources provide the framework to establish a green infrastructure network and plan that would link these resources together into an interconnected system, preserving the streetscapes and areas surrounding these resources, and guide tourism and agritourism activities while maintaining the rural character. The plan could be used to identify

potential rural historic districts, such as Ware Neck and other areas containing historic farms, noteworthy low-density residential development, and active agricultural lands. The County's rural character and historic landscapes can be preserved through various tools, such as historic and open space easements, Purchase or Transfer of Development Rights (PDR and TDR) programs, cluster development tools, and greenway overlay designation.

Mapping these features provides opportunities for preservation efforts as well as unique tourism and recreational opportunities. The County can also develop plans for bike routes, blueways, and other alternative transportation options that visit historic sites and natural areas.



Rosewell - Source: Gloucester Parks, Recreation & Tourism

Goal CHR-1: To respect historic and cultural values, including preservation of historic sites and buildings, archaeological and cultural sites representing various periods of architecture and history within the County.		
Objectives	Implementation Strategies	Time Frame
Establish a clear directive for decision makers for how the community wishes to protect and manage historical and cultural resources for future generations.	Review and revise the Historic Ordinance to provide clear directives based on community input and outreach.	Long Term
Preserve and maintain structures of significant historical, architectural, or cultural value and their immediate environment and/or historical setting.	Develop an inventory of the county's resources using a gradient approach for significance. The inventory should include historical structures and sites, archaeological sites, and sites of cultural significance, and identify the level of importance from a national, state, or local level.	Long Term
	Based on an inventory of important historic buildings and sites, plan for development in the surrounding areas through appropriate land use regulations, such as zoning, overlay districts, greenways, and other tools that will protect or enhance the historically or culturally significant features in the context in which they currently exist.	Long Term
	Work with the historical committee, historical society, and other agencies and non-profit groups to have historic properties listed on the National and State Registers.	Short Term
Encourage and promote the adaptive reuse of historically or culturally significant buildings and structures.	Educate property owners about tax incentives for the preservation and restoration of historic structures.	Ongoing
	Provide incentives for the adaptive reuse of buildings.	Short Term
	Provide flexibility in the zoning ordinance to accommodate historic structures and sites.	Short Term
Promote the economic benefits of historic resources as a source of community pride, enhancement, and tourism.	Continue to monitor the tourist activities generated by historic resources, and continue to celebrate the community's rich history through on-going efforts and activities of the Department of Parks, Recreation and Tourism and Historic Committee in partnership with multiple other groups and agencies.	Ongoing

CHAPTER 8 - CULTURAL AND HISTORIC RESOURCES

Goal CHR-1: To respect historic and cultural values, including preservation of historic sites and buildings, archaeological and cultural sites representing various periods of architecture and history within the County. (Continued)

Objectives	Implementation Strategies	Time Frame
Investigate opportunities for funding a complete survey of historical, archaeological, and cultural structures and sites. The landmarks would be ranked by priority for preservation or conservation efforts.	Provide funding for cost sharing with the Department of Historic Resources (DHR) to complete a survey.	Long Term
Establish a program for encouraging or assisting owners of important historical buildings and sites to submit applications to the National Register of Historic Places and the Virginia Landmarks Register.	Task the Historical Committee with the role of outreach to other organizations and individuals to provide information regarding these programs and provide assistance in completing the forms necessary to apply.	Short Term
Promote historic, archaeological, and cultural resources through education and identification by signs, markers, maps, and other means.	Task the Historical Committee and Tourism Department to work with other organizations and property owners to continue to promote the County's resources through these various mechanisms.	Ongoing
Advance the activities, responsibilities, and capacity of the Historical Committee in order to be able to assist the County and other groups in implementation of the community's goals for historic and cultural resources.	Develop a strategic plan for the Historical Committee and determine the resources needed to implement the plan.	Long Term
	Review and revise the Committee's mission statement and bylaws to reflect the strategies outlined in the plan	Long Term
	Establish a Historical Review Committee qualified with appropriate credentials to make informed and fair decisions and recommendations regarding the impacts to significant historic structures and sites.	Long Term
Discourage the loss of historically or culturally significant structures through "benign neglect" or natural causes by encouraging the repair and maintenance of these structures in a stable and secure condition until such time as the owner can restore the structure in a historically compatible manner.	Explore the possibility of developing a property maintenance code.	Long Term
	Create a fund, loan program, or other mechanism through the county or non-profit group to assist property owners in repairing and maintaining significant historic structures to prevent further deterioration and damage.	Long Term

Goal CHR-1: To respect historic and cultural values, including preservation of historic sites and buildings, archaeological and cultural sites representing various periods of architecture and history within the County. (Continued)

Objectives	Implementation Strategies	Time Frame
Protect and preserve archaeological resources affected by, or adjacent to, any acquisition, stabilization, preservation, rehabilitation, restoration, construction, or reconstruction project.	Encourage developers to conduct Cultural Resource Surveys on projects that occur within Historic Districts.	Short Term
Provide incentives for developers to preserve archaeological resources as part of their plan of development through flexibility in site design, density bonuses, and other tools.	Amend the Zoning and Subdivision Ordinances to provide incentives to preserve cultural resources along with other features - such as natural resources.	Short Term

Goal CHR-2: To improve accessibility and levels of use of historic places.

Objectives	Implementation Strategies	Time Frame
Explore the possibility of acquiring major historical or archaeological sites for public use as museums, tourist attractions, and parkland.	Task the Departments of Parks, Recreation and Tourism, Planning and Zoning, and Economic Development along with other agencies and organizations to continue to monitor sites such as the Woodville School and T.C. Walker House for opportunities for community use.	Ongoing
Promote Gloucester's historic landmarks and local contributions to the nation's history to enhance tourism.	Continue to support the Department of Parks, Recreation and Tourism as well as other organizations' efforts to promote the County's historic landmarks as tourism opportunities.	Ongoing
	Continue to work with regional and state agencies to promote Gloucester's contributions to national historic events.	Ongoing
To promote the economic benefits of protecting historic resources for both tourism and for attracting businesses to the community.	Continue to support and work with the Economic Development Authority, the Department of Parks, Recreation and Tourism, the Historical Committee, Planning Commission and many other organizations that recognize the economic benefits of protecting historic resources for economic development and tourism.	Ongoing

CHAPTER 8 - CULTURAL AND HISTORIC RESOURCES

Goal CHR-2: To improve accessibility and levels of use of historic places. (Continued)		
Objectives	Implementation Strategies	Time Frame
Use a green infrastructure planning approach to create alternative recreational opportunities for enjoying the County’s cultural and natural resources.	Develop a green infrastructure plan based on the County’s known historic sites and resources, parks, greenways, and other cultural and natural amenities in order to better plan for the continued protection of these resources within their current context and to prevent incompatible uses and development from degrading the integrity of these resources in the long term.	Long Term



Gloucester Point - Source: Gloucester Parks, Recreation & Tourism

CHAPTER 9

Future Land Use

Over the 20 year planning horizon, anticipated change will create both opportunities and challenges. Current development policies are based upon providing adequate public services while encouraging growth that contributes to current and future residents' quality of life. The Future Land Use Plan aids in coordinating infrastructure improvements with future residential and commercial developments.

Planning Considerations

Rural Character Preservation

As agricultural lands have been converted into residential and commercial developments, the remaining rural, undeveloped areas may undergo similar changes, resulting in a loss of important features, such as natural landscapes, unobstructed

agricultural areas, and working lands. Housing development in agricultural districts can also create conflicts between residential and working land uses. Since low-density residential development requires larger lots, greater land is consumed and working lands are lost. Clustering can mitigate these conflicts by creating compact growth while leaving large, contiguous tracts for farming, forestry, and open space in areas beyond the Village Development Areas. Other potential tools for protecting rural character include Transfer of Development Rights (TDR), Purchase of Development Rights (PDR), conservation easements, and green infrastructure planning.

Waterway Considerations

Water-based industries have declined as working waterfronts have been converted into coastal residential developments. These challenges and land use conflicts must be proactively addressed if working waterfronts are to remain a part of the community.



Rural development along Route 17 in the northern portions of the County - Source: Bruce Nelson Photography

Naval Weapons Station Yorktown has a Pier Safety Arc extending into the York River near Gloucester Point/Hayes where water traffic and aquaculture is permitted, but inhabited buildings are not. Any development within or near the arc or its buffer should be coordinated with the Navy. Nearby areas may experience noise from the pier, which could increase as waterfront development occurs.

Cost of Public Services

As Gloucester's has previously experienced primarily residential development, service and facility demands have increased due to the resulting population growth. Balanced growth strategies that encourage efficient service and facility provision guides new development to appropriate areas while planning system improvements elsewhere over time.

Congestion Management

Since most residents travel by private automobile, increased growth will add vehicular traffic on major

routes, especially Route 17. Under the current zoning, residential development is permitted by-right in a majority of the County. As a result, developers are not required to provide off-site transportation system improvements to maintain sufficient capacity. Congestion management and capacity should be considered in future land use decisions and include development strategies that support alternative transportation, especially within the Village Development Areas.

The Environment

Gloucester's natural resources attract visitors and residents, but are also threatened or lost as areas develop. Natural environment, local agriculture, and local forestry preservation can be supported by encouraging compatible land use techniques such as preventing fragmentation through Transfer or Purchase of Development Rights programs, clustering, or alternative tax policies. In addition, supporting alternative working land uses, such as non-traditional, value-added, agricultural-based businesses and tourism centers, will reduce the threat



Gloucester County Business Park along Route 17 in the southern portion of the County - Source: Gloucester Economic Development

to these resources while also contributing towards meeting Total Maximum Daily Load water quality requirements.

Non-Residential Uses

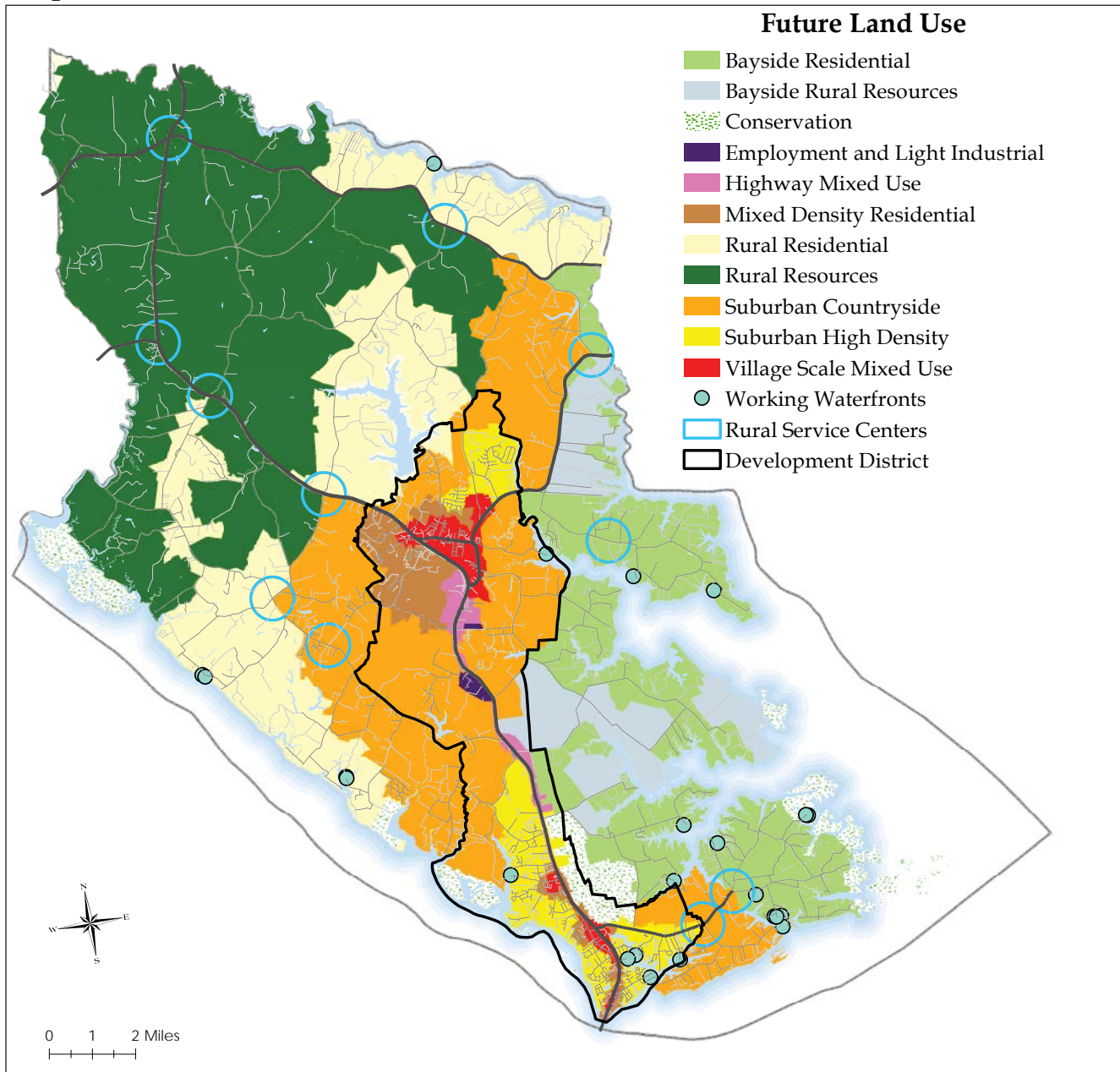
Gloucester is primarily a residential community and increased economic development, especially those utilizing existing assets within and around the Village Areas, supports the Plan's goals. Certain industries may require additional services and suitable locations in proximity to major transportation routes. Economic and commercial development benefits need to be balanced with potential negative impacts of increasing corridor congestion and may require alternative transportation routes.

Character and Built Environment Appearance

Much of Gloucester's development occurred before land use or development ordinances existed,

impacting portions of the built environment, especially around Gloucester Point, the Court House, and the corridor connecting these two areas. Encouraging quality design in new developments and existing community improvements contributes to Gloucester's future viability and attractiveness. Street design standards can promote compatibility between new projects, redevelopment, and existing development. Development standards, including architectural design, building setbacks, and site maintenance can promote complementary development, enhance visual appearance, and support roadway safety efforts, especially if these standards provide increased development incentives. The built environment can be integrated with the natural landscape within site designs that preserve existing vegetation, contribute to site appearance and functionality, and shade parking areas. Additionally, a green infrastructure network linking natural, historic, and cultural resources to developed areas can be established, which would provide air quality, water quality, stormwater management, and wildlife habitat benefits.

Map FLU-1: Future Land Use



Data Source: Gloucester County

Planning for future land use is one of the major functions of the comprehensive planning process. Assessing existing conditions across a range of sectors such as transportation, housing, economics, and the environment can help a locality identify where development currently exists and which areas can most successfully incorporate new development without harming the environment or overburdening infrastructure. Gloucester developed the Future Land Use Plan and Map to guide growth and new development to suitable locations within the County based on existing conditions and considerations identified by the community. Planning considerations begin on page 1. Future Land Use classifications begin on page 203.

The Land Use Plan and corresponding map identifies the most appropriate areas for specific uses ranging from residential to conservation to industrial at varying development intensities. The Land Use Map incorporates the County's **Proposed Development District**, identifying areas suitable for public water and sewer service and expansion as well as distinguishing **Rural Service Centers** to serve residents outside of the Development District.

Residential classifications in the Land Use Plan include **Bayside Residential, Rural Residential, Suburban Countryside, Mixed Density Residential, and Suburban High Density** as well as **Village Scale Mixed Use** which encourages higher density residential and commercial development within the village areas. Multifamily development may also be appropriate in the Highway Mixed Use areas.

Employment and service classifications in the Land Use Plan include **Rural Service Centers, Working Waterfronts, and Employment and Light Industrial**.

Mixed-use designations in the Land Use Plan include **Village Scale Mixed Use** and **Highway Mixed Use** and are recommended for both residential and commercial development at different scales and intensities.

Working Lands and Conservation designations in the Land Use Plan include **Rural Resources, Bayside Rural Resources, and Conservation**. These areas are intended to protect and promote traditional uses such as farming and forestry while allowing compatible development in limited circumstances.

The Land Use Plan also includes optional overlay designations for **Highway Corridors, Historical and Cultural Preservation Districts, Rural and Scenic Corridors**, and the **Dragon Run Overlay** as well as **Planned Unit Developments**, areas with customized development standards.

Future Land Use Plan

The Land Use Plan is intended to guide growth, development, and change within the County over the next 20 years by identifying areas for new development, redevelopment, and existing working lands. This Plan aids County decision-makers when considering land use decisions and capital improvements based upon the community's vision for the County's future.

Future Land Use Classifications

Future Land Use classifications describe the type and intensity of uses planned for different areas within the County, including residential, commercial, industrial, agricultural, special uses, such as environmentally sensitive areas, and overlay designations, which include specific design standards or resource allocations beyond the underlying planned uses. The land use classifications shown on Map FLU-1 are based on the planning considerations previously mentioned and issues identified in the other chapters. The Future Land Use Map shows the general location of different designations, identifying the general type, intensity, and character encouraged. The classifications and map guide land use policies and decisions as well as planning efforts.

Future land use designations can be divided into four (4) categories: residential, employment, mixed-use, and working or conservation lands. Overlay designations and floating zones are also included and may be mapped in the future.

Development District

The Future Land Use Plan identifies a Development District that coincides with areas that are expected to be served by public water and sewer facilities or could be served with these facilities within the next 20 years as funding becomes available. Additionally, this region is currently or planned to be the County's principal population, service, and employment center.

The Development District and adjacent lands comprise the most suitable areas for new population growth based upon the infrastructure availability and current development patterns. Growth in and around this District is intended to discourage residential sprawl into the County's rural areas and provide utilities, services, and employment near the primary population centers while minimizing impacts on local roads.

These considerations further rural preservation in the County's outlying areas, protecting traditional and value-added working lands and maintaining the rural character desired by the community. The Development District should accommodate most local population growth through 2030, supporting residential and economic objectives and recommendations contained in other Plan chapters. Although growth and infrastructure improvements are recommended to occur within the Development District, some adjacent lands may be appropriate for future development and should be considered if service provision is feasible.

Residential Classifications

Residential land use designations apply to areas where the majority of development is proposed to be residential with various other complementary, compatible uses included. Residential development intensity depends on service availability and the surrounding natural and built environment, with lots ranging from five (5) or more acres to 10,000 square feet or smaller. The Plan promotes housing and development diversity that meets residents' needs without straining the surrounding environment and service availability. Although most residential development consists of moderate to low density single-family detached homes, the Village Areas around Gloucester Point, Hayes, and Gloucester Court House can accommodate more intense residential development due to the availability of existing infrastructure and proximity of uses to encourage active and alternative transportation modes.

Bayside Residential

Bayside Residential uses are designated in the eastern part of the County generally following the Chesapeake Bay Impact Crater, an environmentally-sensitive, flood-prone area. These areas can support limited low-density residential and some incentivized development that encourages ecological and cultural site preservation where site conditions permit. Due to a lack of public utilities and the environmental characteristics, large lot, single-family detached residential development or low-density cluster development is recommended. Historically, this region has been utilized for water-dependent uses, such as working waterfronts and marinas and other water dependent uses. Areas within this district classified as working waterfronts or marinas should be preserved with conflicts minimized. Conservation easements and similar measures protecting existing natural and cultural features are supported and encouraged in classification.

Rural Residential

Rural Residential is designated in several areas of the County along the York River and Dragon Run and north of Gloucester Court House surrounding the Beaverdam Reservoir. These areas are mainly rural with low-density residential development on private wells and septic systems and served by secondary roads with limited capacity. Cluster development may be appropriate if site characteristics permit and development is consistent with preservation goals. Additionally, lands in this region would be appropriate as sending zonings if the County considers using Transfer of Development Rights (TDR) to preserve rural character. The Rural Residential designation supports low-density residential development (more than five acres) in accordance with existing forestry and agricultural activities as compatible uses. The continuance of traditional uses is encouraged in these areas. Conservation easements and similar measures protecting existing natural and cultural features are also supported.



York River Villas Townhouse Development - Source: Gloucester Planning and Zoning

Suburban Countryside

Suburban Countryside is designated for large portions of the County surrounding the more intensely-developed Gloucester Court House Village Area and Gloucester Point/Hayes Village Area. This district intends to serve as a transitional district between areas with working and rural lands and densely developed Village Areas and may be served by public water and sewer. This region contains moderate suburban residential development (two-acre minimum) with extensive open space of a more rural nature than typical suburban development. Although much of the region is already developed as residential subdivisions, additional development is possible where services are available and characteristics permit. New clustered development with smaller lots that preserves ecological and cultural sites is encouraged where adequate infrastructure is available. These areas are appropriate as a potential TDR sending zones. Existing forestry and agricultural activities are compatible uses and their continuance is supported. New or expanded agricultural uses should be carefully evaluated for

their compatibility with the residential character of the area. Conservation easements and similar measures protecting existing natural and cultural features are supported in these areas.

Mixed Density Residential

Mixed Density Residential is designated for regions near and around the Village Development Areas at Gloucester Point/Hayes and Gloucester Court House. This designation aims to provide a variety of housing types including higher-density, village-scale neighborhood development served by public water and sewer with characteristics of Village Development Areas. These areas would be appropriate as TDR receiving zones. Form-based zoning or similar techniques are recommended to preserve service access and neighborhood character by encouraging a mix of densities and compatible building characteristics. Housing variety at higher densities with amenities such as sidewalks, street lighting and furniture, trees, and open space are encouraged in

CHAPTER 9 - FUTURE LAND USE

these areas to connect to existing traditional and mixed-use development.

Suburban High Density

Suburban High Density areas are designated for established residential neighborhoods in and around Gloucester Court House, Gloucester Point, Bena, Hayes, and up to Ordinary. Similar to Mixed Density Residential, this district intends to support most of the County's future single-family residential development and is appropriate for moderately-dense intensities (two units per acre or greater) where public water and sewer is available. Trails, sidewalks, parks, and other residential amenities are promoted and clustering is encouraged to preserve open space. The Suburban High Density areas would be appropriate as TDR receiving zones.

Employment and Service Classifications

Commercial and industrial growth is vital to balancing living and working within a community. Existing developments include service, retail, and industrial facilities, primarily concentrated in the Village Development Areas, but also along Route 17 between the Court House and Gloucester Point and in some areas outside the Development District. The following classifications aim to promote economic development throughout the County that is appropriate for various sites and surroundings.

Rural Service Centers

Rural Service Centers are areas where concentrated development can occur in the County's rural regions, usually within a half-mile of major intersections, that serve many functions, ranging from individual establishments to expanding community centers with post offices, small stores and offices, and fire and emergency stations. Rural Service Centers are typically surrounded by residential and agricultural

uses (but at times commercial, public, or institutional uses). These areas that should remain relatively rural in nature but allow for some mixture of uses. More intensive industrial or commercial development that extend beyond a half-mile may also be appropriate where compatible with nearby uses and transportation corridors.

Working Waterfronts and Marinas

The water is an important component of Gloucester's culture, history, and economy. As shoreline residential development increases, conflicts with water-based industries, including seafood and boat operations, as well as recreation and other activities, can occur. The Land Use Plan designates certain areas as working waterfront and marina areas, such as commercial seafood operations, boatyards, marinas, and accessory uses, to clearly acknowledge that these uses exist and the County desires them to continue



Working waterfront - Source: David Girard & Gloucester Parks, Recreation & Tourism



York River Yacht Haven, Gloucester County, VA - Source: Gloucester Planning and Zoning

into the future. Complimentary residential and mixed-use development, potentially through Planned Unit Developments, may be appropriate surrounding and supporting active working waterfronts. A specific zoning or overlay district is recommended to protect existing working waterfront uses and allow for new development in compatible locations that do not negatively impact existing residential development or local waterway quality.

Employment and Light Industrial

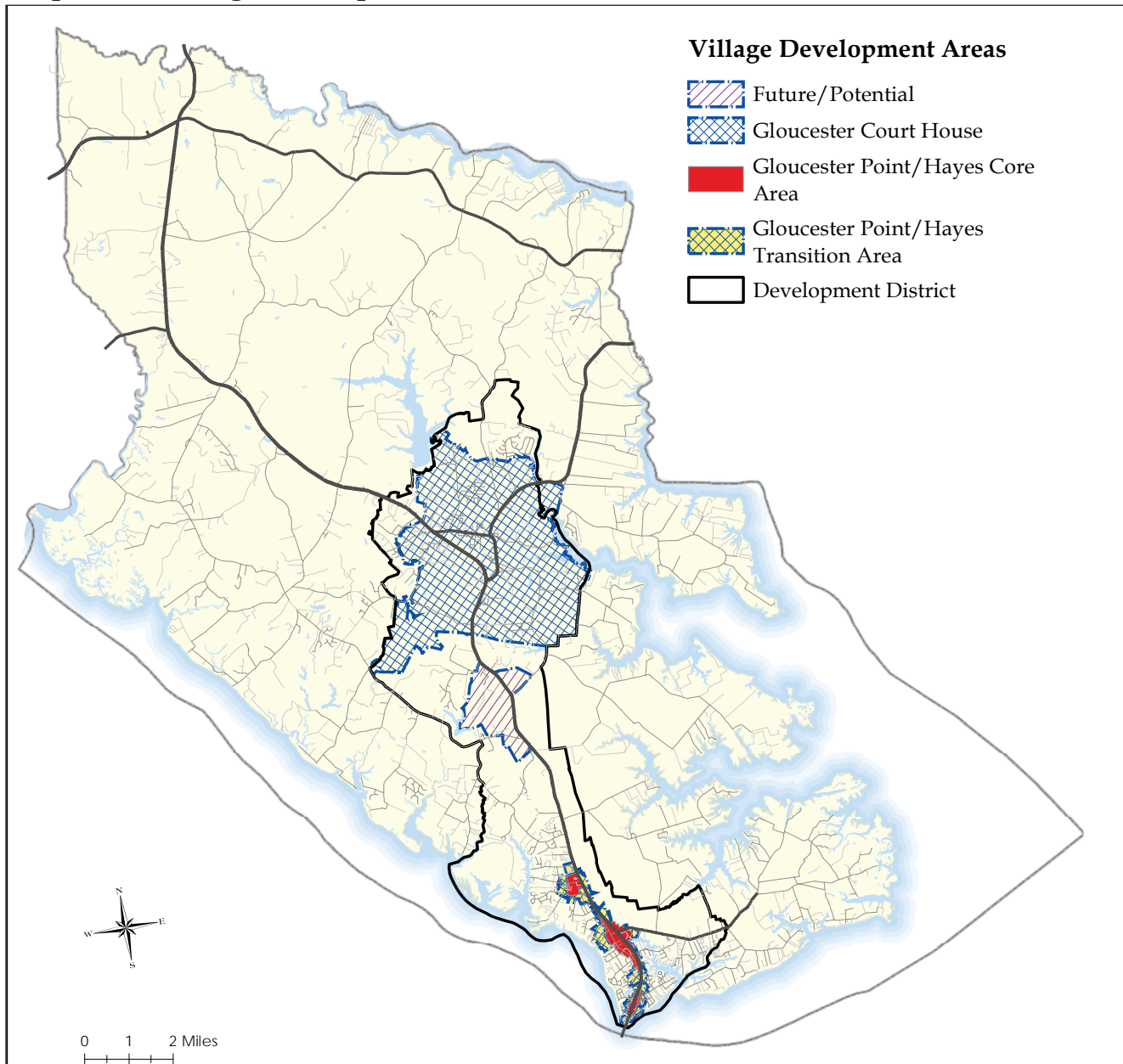
Employment and Light Industrial areas are intended for large-scale industrial or employment facilities, such as manufacturing plants or office and industrial parks that contribute to Gloucester's economic growth and employment opportunities. As these uses require significant acreage and access to major transportation routes, an area has been designated adjacent to and including the County's Business Park on Route 17 between Gloucester Point and the Court House. Landscaping, setbacks, and buffering may be used to mitigate potential conflicts between industrial uses

and surrounding residences. Mixed-use development, where employees have the opportunity to live, work, play, and obtain services within the same proximity, may also be appropriate in this area of the County. However, the capacity of the County to absorb new mixed-use development without adversely impacting the economic viability of existing Village Areas should be considered in any land use decisions for this type of development outside the designated Village Development Areas.

Service Business Centers

Service Business Centers is a floating designation aimed to accommodate various commercial enterprises and services, including light, medium, and heavy manufacturing, land-consumptive commercial activities, and small businesses spaces, which may or may not require public water and/or sewer service. Examples included truck terminals, contractor's office and storage yards, and other service based industries. Most existing commercial development occurs along Route 17 within the Development District, a linear

Map FLU-2: Village Development Areas



Data Source: Gloucester County

Village Development Areas (VDA's) are regions that can support additional commercial and residential development in a pedestrian oriented, village-scale environment. Encouraging growth in VDA's, combined with development standards, can preserve the County's rural character and natural resources while increasing housing and commercial use variety in these historically mixed-use areas. Gloucester has two (2) designated Village Development Areas, **Gloucester Court House** and **Gloucester Point/Hayes**, and has identified another region near the Gloucester Business Park as a potential future VDA. Specific area plans containing development guidance have been produced for both existing VDA's. Village Development Areas are discussed on page 209.

development pattern that effects traffic and visual qualities of the corridor. Concentrated commercial development in a Service Business Center is encouraged for areas off of Route 17 where similar uses can be clustered together to share services and infrastructure improvements without impacting adjacent existing or planned uses.

Mixed-Use Designations

Some regions in Gloucester have historically included a mixture of uses, such as offices, homes, and stores that allows for diverse living and working arrangements and promotes efficient infrastructure use. These areas are generally more intensely developed than other parts of the County and are served by public water and sewer.

Village Development Areas (VDA's)

Village Development Areas (VDA'S), as shown on Map FLU-2, are historically mixed-use regions or newly planned areas that can support commercial and residential development in a pedestrian-oriented, village-scale environment. Form-based codes or design guidelines are recommended to ensure traditional neighborhood design standards that encourage economic vitality. Relatively high residential densities and commercial uses with pedestrian-oriented improvements such as street lights, sidewalks, and crosswalks are appropriate. Currently, parts of Gloucester Court House, Gloucester Point, and Hayes are designated as VDA's within the Future Land Use Plan, but a future VDA may be appropriate adjacent to the existing Business Park or in other areas along Route 17 between the existing VDA's that are designated to promote a pedestrian-oriented, mixed-use built environment. Within each VDA, sub-area planning is recommended to identify suitable mixed-uses and housing types. The guidance provided within the Gloucester/Point Hayes Village Development Area Plan and Gloucester Court House Village Sub-Area Plan should be referenced when considering applications within these VDA's.

Highway Mixed Use

The Route 17 corridor between Gloucester Point and the Court House is a major residential, commercial, and industrial region within Gloucester that provides significant commercial and recreational access to other parts of the County and surrounding region. The Highway Mixed Use designation is recommended in several locations along Route 17 within the Development District, aiming to create identifiable places defined by form instead of use while maintaining highway capacity and efficiency. These areas encourage different types of development along and adjacent to the corridor with access management standards that promote efficient traffic flow and compatible development patterns which do not reduce the existing Route 17 capacity or level of service.



Gloucester Court House Village Area - Source: Gloucester Parks, Recreation & Tourism



Gloucester County working farm - Source: Bruce Nelson Photography

Working Lands and Conservation Designations

Many parts of the County are notable for their environmental characteristics and agrarian economy. Natural resources provide residents many benefits and resource protection helps maintain ecological services, supports the local economy, and promotes Gloucester's quality of life. Most of these areas are designated as working lands where the primary use is continued traditional land-based activities such as farming, forestry, and habitat preservation (hunting and outdoor recreation), but allowing for limited, compatible residential development.

Rural Resources

The Rural Resources designation is intended as an agricultural district to maintain and conserve the character and economy of agricultural and forested

lands in northwest. These areas lack the public facilities necessary to support high-density residential or commercial development, and uses are primarily agriculture, silviculture, and related activities. Limited low-density residential development and supporting businesses are also acceptable. Potential conflicts between agricultural and residential uses can be minimized through larger minimum lot sizes (greater than five acres per house). As portions of this area transitions from agriculture to service-based businesses, non-traditional agriculture and other uses may be suitable if the infrastructure can support them. This region is appropriate for conservation easements, as sending areas for Transfer of Development Rights, and other development incentives that preserve the rural nature and surrounding environment. Limited residential development protects farming rights while allowing minor land subdivisions and larger lot sizes maintains the rural character while recognizing property rights.

Bayside Rural Resources

Bayside Rural Resources is intended to support sustainable agricultural and forestry uses while allowing limited residential development. Characterized by many small inlets from the Chesapeake Bay, this area is susceptible to flooding and storm surges and should remain largely undeveloped or as working lands. Development occurring on large lots can coexist with agricultural lands and ecologically important areas, but residential development should be dependent on site characteristics. Conservation and other preservation easements are supported and encouraged in these areas.

Conservation

Conservation regions contain areas with development constraints due to environmental features, including steep slopes, floodplains, tidal and non-tidal wetlands, and Resource Protection Areas (RPAs). Natural resource-based uses, such as forestry, hunting and outdoor recreation, may be appropriate if site characteristics permit. This area is suitable for conservation easements and other measures that preserve and protect the region's environmental integrity.

Overlay Designations

Overlay designations identify areas where the underlying uses are not changed, but are subject to additional standards due to special circumstances, such as location, environmental characteristics, or cultural and historical importance. These designations allow the County to target specific areas for special protection or programs without limiting the uses permitted.

Highway Corridor Development District

The Highway Corridor Development District (HCDD), intends to encourage growth and development along

Route 17 from Gloucester Point to the Court House, while protecting the corridor's safety and long term capacity. This district aims to ensure the corridor's continued viability as an economic development tool, maintain the corridor's transportation safety by access and visibility management, ensure the corridor's long-term transportation efficiency, and enhance the corridor's visual quality as a County entry point. The HCDD extends 150 feet from the right-of-way on both sides of Route 17 within the Development District as well as onto business and industrial zoned properties along Route 17 outside of the Development District. Areas within the district are subject to additional access management and architectural standards, pedestrian accommodations, and yard setbacks.

Historical and Cultural Preservation Overlay

Gloucester's history is a central part of the community's identity and plays an important role in the local and regional economy. The Historical and Cultural Preservation Overlay designates certain important historical or cultural sites, which includes several parcels throughout the County and a portion of the Court House in and around the Court Circle. This designation can accompany property owners' efforts to protect historical resources and promote the County's historical and cultural sites as economic and educational sources. In designated areas, this overlay could establish architectural review standards for new development or redevelopment that ensures compatible character in and around this district. Many historic resources, especially those included or proposed for inclusion on State and Federal listings can benefit from this overlay and the County should encourage historic property owners to also consider local designation.

Rural and Scenic Corridor Overlay

The Rural and Scenic Corridor Overlay intends to identify and preserve existing scenic and rural streetscapes along County roads that provide views of natural and cultural resources and add to the

local rural character. This designation could apply along the rural sections of Route 17 and Route 3/14 outside of the Development District as well as Route 14 in Adner, Route 198 along the northern end of the County, along Aberdeen Creek Road, and other roads providing access to local and regional places of interest to include access management standards and additional setbacks.

Dragon Run Overlay

The Dragon Run Overlay is a conservation designation intended to preserve the Dragon Run watershed, a regionally significant ecosystem that is sensitive to development impacts. The designation aims to promote the watershed's conservation and protection through conservation easements and other measures that support traditional land uses while encouraging responsible and viable residential and economic development in the surrounding area. The Rural Resources and Rural Residential designations are located within the Dragon Run watershed and both designations seek to preserve natural resources while allowing low density residential development. Traditional land uses such as forestry and farming as well as other uses that protect and enhance the region's environmental and cultural assets are encouraged.

public benefits through improvements furthering the Comprehensive Plan's goals and objectives.

Summary

The Future Land Use map corresponds to the designations mentioned in this chapter, though those not shown are incorporated by text reference and support compatible land use decisions. Together, the map and designations summarize the Plan's chapters, representing potential future land uses written and geographically. This plan intends to protect and improve the local quality of life through preserving the County's resources and rural character as well as providing growth opportunities by encouraging quality development and redevelopment aimed at enhancing, encouraging and promoting community livability, prosperity, and pride in "the land of the life worth living."

Site Specific Designations

Planned Unit Development

Planned Unit Developments are typically developments with a preplanned design unique to the site's conditions that allow for flexible site development characteristics, such as density, setbacks, and landscaping, in exchange for community facilities, infrastructure improvements, natural resource, historic, or cultural feature preservation, or similar public benefits. Planned unit developments are reviewed and approved on an individual basis, designed to be compatible with surrounding areas. Applications are subject to Planning Commission review and Board of Supervisors approval to ensure that potential impacts are addressed by offsetting

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Appendix A

Glossary of Terms

Term	Definition
Access Management	The systematic control of the location, spacing, design, and operation of entrances, median openings/crossovers, traffic signals, and interchanges for the purpose of providing vehicular access to land development in a manner that preserves the safety and efficiency of the systems of state highways.
Accessory Residential Unit	A residence which is associated with a commercial use or structure. An example of this type of use is an apartment above a shop. This definition does not include a farm tenant dwelling.
Accessory Use	A use or structure on the same lot or on a contiguous lot, in the same ownership, and of a nature customarily incidental and subordinate to, the principal structure and operated and maintained for the benefit or convenience of the owners, occupants, employees, customers, or visitors of the zoning lot with the principal use.
Activities Of Daily Living	Daily tasks such as bathing, dressing, toileting, transferring, bowel control, bladder control, and eating/feeding that an individual can perform independently.
Adaptive Reuse	The renovation and reuse of pre-existing structures for new purposes.
Affordability	A measure of the total cost for a good or service relative to an individual or family's ability to pay.
Affordable Housing	Housing that is affordable to households with incomes at or below the area median income, provided that the occupant pays no more than thirty percent (30%) of his gross income for gross housing costs, including utilities.
Agricultural-Based Business	Secondary businesses, such as retail sales, that are accompany a primary agriculture business, such as a farm or winery.
Agritourism Activity	An activities carried out on a farm that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions. An activity is an agritourism activity whether or not the participant paid to participate in the activity.
Alternate Septic Systems	See Alternative On-site Sewage System
Alternative On-site Sewage System	A sewage/wastewater treatment works that is not conventional on-site sewage system and does not result in a point source discharge.
American Community Survey	An ongoing survey, conducted by the U.S. Census Bureau, that samples a percentage of the population every year to develop demographic, social, and economic data.
Aquaculture	The propagation, rearing, enhancement, and harvest of aquatic organisms in controlled or selected environments, conducted in marine, estuarine, brackish, or fresh water.

APPENDIX A

Term	Definition
Aquifer	A geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding groundwater to wells or springs.
Bedroom Community	A residential area, typically a suburb of a major urban center, which includes a large number of commuters among the home-owning population.
Best Management Practice	A practice, or combination of practices, that is determined by a state, local or regional governmental agency to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
Blight	Areas or properties that have become dilapidate or deteriorated or violate minimum health and safety standards, endanger the public's health, safety, or welfare.
Blueway	Marked routes on waterways, such as rivers, lakes, canals and coastlines, for people using nonmotorized boats, kayaks, rafts, or canoes
Bookmobile	An automobile, small truck, or trailer constructed to carry books and serve as a traveling library, as for communities where libraries are not accessible.
Capital Improvement Plan	A guiding document comprised of an annual capital budget and a five-year capital program and adopted by a locality used coordinating community planning, fiscal capacity, and physical development through an implementation schedules.
Census Of Agriculture	A census conducted every five years by the U.S. Department of Agriculture to collect national data on farms and ranches. The most recent Census of Agriculture was conducted in 2012.
Census Tract	A small (usually between 1,200 and 8,000 people), relatively permanent statistical subdivision of a county or equivalent entity updated by local participants prior to each decennial census.
Census-Designated Place	An area delineated to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated under the laws of the state in which they are located.
Chesapeake Bay Preservation Act	Article 2.5 (§ 62.1-44.15:67 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.
Chesapeake Bay Preservation Area	All land in Gloucester County designated by the board of supervisors pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations 9 VAC 10-20-10 et seq. and Section 10.1-2107 of the Code of Virginia. The Chesapeake Bay Preservation Area (CBPA) shall consist of Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). CBPA's are generally considered sensitive to development and other activities due to the prevalence of certain land types that if improperly developed would contribute to the degradation of water quality.
Clean Marina	A marina that practices environmentally sound operating and maintenance procedures, such as regular boat engine inspection, proper waste disposal, and less boat discharge.
Cluster Development	A form of development that permits a reduction in lot area and bulk requirements, provided the remaining land area is devoted to open space, active recreation, preservation of environmentally sensitive areas, or agriculture. Open space is generally to be contiguous.

Term	Definition
Coastal Zone Management Act	An Act of Congress passed in 1972 and overseen by the National Oceanic and Atmospheric Administration that provides for the management of the nation's coastal resources through three national programs: the National Coastal Zone Management Program, the National Estuarine Research Reserve System, and the Coastal and Estuarine Land Conservation Program.
Code Of Virginia	A compilation of Virginia's laws, enacted through legislation of the Virginia General Assembly.
Commonwealth Transportation Board (CTB)	An 18-member board appointed by the governor to establish the administrative policies for Virginia's transportation system, allocate highway funding to specific projects, and locate routes and provide funding for airports, seaports, and public transportation.
Commuter	A person who travels regularly to and from a place, and especially between where they live and where they work.
Complete Streets	Streets that are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
Comprehensive Plan	Any plan or part thereof officially adopted pursuant to Virginia law for the physical development of the County of Gloucester, Virginia, showing the long-range proposals for the general development of the county and including, but not necessarily limited to: a land use plan designating areas for various types of public and private development and uses; a major thoroughfare and transportation plan as may be approved designating a comprehensive system of transportation facilities; and, a community facilities plan designating a comprehensive system of community facilities such as parks and recreational areas, schools, public buildings, community centers, waterworks, sewage disposal, refuse disposal, and the like.
Conditional Use	A use which, because of its unique characteristics or potential impacts on adjacent land uses, are not generally permitted in certain zoning districts as a matter of right, but which may, under the right set of circumstances and conditions, be acceptable in certain specific locations.
Conditional Use Permit	A permit granted by the Board of Supervisors for a conditional use after ensuring that the use can be appropriately accommodated on the specific property, will be in conformance with the Comprehensive Plan, can be constructed and operated in a manner which is compatible with the surrounding land uses and overall character of the community, and that the public interest, safety, and general welfare of the citizens of the County will be protected.
Confining Unit	A hydrogeologic unit of impermeable or distinctly less permeable material bounding one or more aquifers
Conservation Easement	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.
Corridor Of Statewide Significance	An integrated, multimodal network of transportation facilities that connect major centers of activity within and through the Commonwealth and promote the movement of people and goods essential to the economic prosperity of the state.

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Term	Definition
Decennial Census	A mandatory survey conducted by the U.S. Census Bureau that counts the total population every ten (10) years to define electoral district boundaries and develop demographic, social, and economic data.
Density	A unit of measurement; the number of dwelling units per acre.
Department of Rails and Public Transit	The agency that oversees public and merchandise transportation throughout the state, including rail, public transportation, and commuter service programs.
Development District	The area defined by the director of public utilities to be served by public water and sewer in accordance with the department's master water and sewer plan.
Dwelling Unit	A single unit providing complete independent living facilities for one (1) or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation, but not including a tent, cabin, travel trailer, manufactured home, or room in a hotel or motel.
Ecotourism	The practice of touring natural habitats in a manner meant to minimize ecological impact.
Estuarine	Deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.
Exurban	A region or settlement that lies outside a city and usually beyond its suburbs.
Family Income	The sum of the income of all family members 15 years and older living in the household. Families are groups of two or more people (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such people (including related subfamily members) are considered as members of one family.
Farmland Of Statewide Importance	Land that is of statewide or local importance for the production of food, feed, fiber, forage, nursery, oilseed, or other agricultural crops, as determined by the appropriate state agency or local government agency.
Fiscal Capacity	The ability of a local government to generate revenue through taxes, fees, and industrial capacity.
Floodplains Or Flood Prone Areas	A relatively flat or low land area adjoining a river, stream or watercourse which is subject to partial or complete inundation or an area subject to the unusual and rapid accumulation or runoff of surface waters from any source.
Floor Area Ratio	The ratio of the total floor area of a building or buildings on a parcel to the land area of the parcel where the building or buildings are located.
Green Infrastructure	Strategically planned and managed networks of natural lands, working landscapes, and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.
Greenway	A corridor of open land that provides one or more of the following benefits: protection and management of natural and cultural resources; provision of recreational opportunities; and enhancement of the quality of life and the aesthetic appeal of neighborhoods and communities.
Groundwater Management Area	A geographically defined groundwater area in which the State Water Control Board has deemed the levels, supply or quality of groundwater to be adverse to public welfare, health and safety.
Growth Management	The process of using various local planning and development policies, codes, and ordinances to guide the timing, location, and character of land use and development.

Term	Definition
Hampton Roads	The metropolitan statistical area encompassing southeastern Virginia (also known as the Virginia Beach-Norfolk-Newport News, VA-NC MSA), which includes the cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg and the counties of Gloucester, Isle of Wight, James City, Mathews, and York as well as Currituck County and Gates County in North Carolina.
Hampton Roads Planning District	Planning District 23, as designated by the Virginia Department of Housing and Community Development, including the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg, the counties of Gloucester, Isle of Wight, James City, Southampton, Surry, and York, and the town of Smithfield.
Hampton Roads Planning District Commission	The regional planning agency representing seventeen (17) local governments in Hampton Roads, aiming to encourage and facilitate local government cooperation and state-local cooperation in addressing on a regional basis problems of greater than local significance.
Hazard Mitigation	Any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.
Heritage Tourism	The conduct of activities to attract and accommodate visitors to a site or area based on the unique or special aspects of the history, landscape (including trail systems), and culture of the site or area.
High Occupancy Vehicle	A passenger vehicle carrying more than a specified minimum number of passengers, typically at least two (2) or three (3) passengers.
Highway Corridor Development District	An overlay district along the primary highway corridor (US 17) designated by the County to encourage growth and economic development while maintaining safety, efficiency, and visual aesthetics.
Historic Overlay District	An overlay district designated by the County where development must meet additional requirements, including exterior features, general design, texture, material, and color, to ensure compatibility with the existing district's historic character.
Historic Preservation Easement	Easements that protect properties having historic, architectural, or archaeological significance and can be used to preserve important natural land values that comprise the setting of historic buildings.
Hobby Farm	A small farm operated for pleasure or supplemental income rather than for primary income.
Household Income	The sum of the income of all people 15 years and older living in the household. A household includes related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit, is also counted as a household.
Housing Tenure	The distinction between owner-occupied and renter-occupied housing units.
Housing Unit	See Dwelling Unit.
Hydric Soils	Those soils which are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part; in general, hydric soils are flooded, ponded or saturated for usually one week or more during the period when soil temperatures are above biological zero, forty-one (41) degrees Fahrenheit, as defined by "Soil Taxonomy".

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Term	Definition
Impact Fee	A charge or assessment imposed against new development in order to generate revenue to fund or recover the costs of reasonable road improvements benefiting the new development.
Impaired Waters	Waters that have been identified by Virginia pursuant to § 303(d) of the Clean Water Act as not meeting applicable water quality standards. Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.
Inclusionary Zoning	Stipulating that a certain percentage of new housing will be priced within the reach of middle-income buyers or renters.
Intelligent Transportation System	Electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
Intensely Developed Area	Areas designated by the local government pursuant to the Chesapeake Bay Preservation Area Designation and Management Regulations that meet at least one of the following conditions at the time the local program was adopted: more than 50% impervious cover, served by public water and sewer or a constructed stormwater drainage system, or housing density equal to or greater than four dwelling units per acre.
Lacustrine	Wetlands and deepwater habitats with all of the following characteristics: situated in a topographic depression or a dammed river channel; lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30° areal coverage; and total area exceeds 20 acres.
Land Cover	The observed (bio)physical cover on the earth's surface.
Land Use	Specific uses or management-related activities, rather than the vegetation or cover of the land. Land uses may be identified in combination when joint or seasonal use occur and may include land used for support facilities that are an integral part of the use.
Level Of Service	A qualitative measure describing the operational conditions within a vehicular traffic stream, generally in terms of such service measures as speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.
Living Shoreline	A shoreline management practice that provides erosion control and water quality benefits; protects, restores or enhances natural shoreline habitat; and maintains coastal processes through the strategic placement of plants, stone, sand fill, and other structural and organic materials.
Manufactured Home	A structure which is subject to federal regulation, which is transportable in one (1) or more sections; is eight (8) feet or more in width and forty (40) body feet or more in length in traveling mode, or is three hundred twenty (320) or more square feet when erected on-site; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities; and includes the plumbing, heating, air conditioning, and electrical systems contained in the structure. A manufactured home shall not be deemed a single family detached dwelling.
Median Household Income	The total income of all people 15 years and older living in the household where the income falls in the 50th percentile for a specified group or geographical unit.

Term	Definition
Metropolitan Planning Organization	The regional policy body required in urbanized areas with populations over 50,000, and designated by local officials and the governor of the state to carry out the metropolitan transportation planning requirements of federal highway and transit legislation and develop transportation plans and programs for the metropolitan area.
Middle Peninsula Planning District	Planning District 18, as designated by the Virginia Department of Housing and Community Development, including the counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex and the towns of Tappahannock, Urbanna, and West Point.
Middle Peninsula Planning District Commission	The regional planning agency representing nine (9) local governments on the Middle Peninsula, aiming to meet the needs of local and state governments by building regional approaches to issues such as economic development, solid waste management and legislative priorities.
Mobile Home	See Manufactured Home.
Modular Home	Housing that is constructed off-site as prefabricated sections that are then assembled on-site. Also referred to as prefabricated homes.
Multifamily Housing	A building, or portion thereof, containing three (3) or more dwelling units.
Natural Resources Conservation Service	A division of the U.S. Department of Agriculture that provides farmers and ranchers with financial and technical assistance to voluntarily put conservation on the ground.
Neighborhood-Oriented Businesses	Small- and medium-sized offices or retail uses that are located near residential areas and provide services to residents.
No Discharge Zone	An area where a state has received an affirmative determination from the U.S. Environmental Protection Agency that there are adequate holding tank pump-out facilities for the removal of sewage from vessels in accordance with § 312(f)(3) of the Act, and where federal approval has been received allowing a complete prohibition of all treated or untreated discharges of sewage from all vessels.
Nonconforming Use	The otherwise legal use of a building or structure or of a tract of land that does not conform to the use regulations of the Zoning Ordinance for the district in which it is located, either at the effective date of the ordinance or as a result of subsequent amendments to the ordinance.
Nonpoint Source Pollution	Storm-water borne pollutants resulting from land use activities, including, but not limited to sediment, nutrients such as phosphorous and nitrogen, bacteria, viruses, oxygen depletion, hydrocarbons such as fuels and lubricants, toxic metals such as lead, zinc, copper, toxic chemicals, chlorides, and increases in water temperature.
Nutrient Management	The science and art directed to link soil, crop, weather and hydrologic factors with cultural, irrigation, soil and water conservation practices to achieve the goals of optimizing nutrient use efficiency, yields, crop quality, and economic returns, while reducing off-site transport of nutrients that may impact the environment.
Out-commuter	A person who travels regularly from their locality of residence to a locality not within the boundaries of their locality of residence for work.

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Term	Definition
Overlay District	A zoning district which is applied over one or more previously established zoning districts, establishing additional or stricter standards and criteria for covered properties in addition to those of the underlying zoning district
Owner Occupancy	A housing unit where the owner or co-owner lives in the unit.
Palustrine	Nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5%.
Per Capita Income	The income of a unit of government divided by the population of the unit of government.
Persons With Special Needs	Individuals with developmental disabilities, mental retardation, emotional disturbance, sensory or motor impairment, or significant chronic illness who requires special health surveillance or specialized programs, interventions, technologies, or facilities.
Planned Subdivision	A development that is designed with a master plan, as opposed to a collection of neighboring parcels developed individually.
Planned Unit Development	An area of land in which a variety of housing types and/or compatible commercial and industrial facilities is accommodated in a preplanned environment under more flexible standards, such as lot size and setbacks, than those restrictions that would normally apply under this ordinance. The procedure for approval of such development contains requirements in addition to those of the standard subdivision, such as building design principles and landscaping plans.
Point Source Pollution	Pollution of state waters resulting from any discernible, defined or discrete conveyances.
Population Density	The population divided by land the area.
Primary Road	Non-interstate major roads (two-to-six lanes), such as U.S. highways and state routes numbered less than 600, that connect cities and towns with each other and with interstates.
Prime Farmland	Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, nursery, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber.
Proffer	Any money or improvements voluntarily offered by the owner of property subject to rezoning, submitted as part of a rezoning application and accepted by a locality.
Projections	An estimates of a future situation or trend based on a study of present ones.
Purchase Of Agricultural Conservation Easement	Preserving the agricultural use of a property by placing an agricultural conservation easement while purchasing the development rights to allow increased development on another property.
Purchase Of Development Rights	A transaction enabled by local ordinance that allows property owners to sell the developments right of their parcels (thereby conserving them in perpetuity).

Term	Definition
Receiving Area (TDR)	One or more areas identified by an ordinance and designated by the comprehensive plan as an area authorized to receive development rights transferred from a sending area.
Regional Water Supply Plan	A plan developed in accordance with 9VAC25-780 that addresses a locality's existing water source, use, and resources, current conservation practices, drought response and contingency, and projected water demand.
Renter Occupancy	All occupied units which are not owner occupied, whether they are rented for cash rent or occupied without payment of cash rent.
Resource Management Area	That component of the CBPA that is not classified as the resource protection area. Lands of particular sensitivity within RMAs include but are not limited to nontidal wetlands not in RPAs, floodplains, highly erodible soils, highly permeable soils and hydric soils.
Resource Protection Area	That component of a (CBPA) comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters. RPAs shall include tidal wetlands, tidal shores, nontidal wetlands connected by surface flow and contiguous to tidal wetlands or adjacent to water bodies with perennial flow and a 100-foot wide buffer area as defined in this chapter, adjacent to and landward of other RPA components and along both sides of any water body with perennial flow.
Rezoning	To reclassify (a property, neighborhood, etc.) as belonging to a different zone or being subject to different zoning restrictions.
Right-of-way	A strip of land taken or dedicated for use as a public way. It may incorporate the roadway, curbs, lawn strips, sidewalks, lighting, and drainage facilities, and may include special features (required by the topography or treatment) such as grade separation, landscaped areas, and bridges.
Rural Service Center	Areas located outside the Development District, including centers for rural residential development and providers of commercial services, that may have post offices, county stores, and fire departments.
Safe Routes To School	A national program that aims to improve the health and well-being of children by enabling and encouraging them to walk and bike to school through examining conditions around schools, conducting projects and activities that work to improve safety and accessibility, and reducing traffic and air pollution in the vicinity of schools.
Sea Level Rise	The combined effects of global sea level variations and local vertical land movement.
Secondary Road	Local connector and county roads numbered 600 and above (with some exceptions) generally maintained by VDOT.
Secondary Street Acceptance Requirements	The conditions and standards, established by the Commonwealth Transportation Board, that must be met before secondary streets constructed by developers, localities, and entities other than VDOT, will be accepted into the state's secondary street system.
Section 404	Part of the Clean Water Act, this section establishes a program to regulate the discharge of dredged or fill material into waters of the United States and adjacent wetlands.
Section 8	Part of the Housing Act of 1937, this section assists very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market through housing vouchers.

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Term	Definition
Sending Area (TDR)	One or more areas identified by an ordinance and designated by the comprehensive plan as an area from which development rights are authorized to be severed and transferred to a receiving area.
Setback	The minimum distance by which any building or structure must be separated from the right-of-way line or property lines.
Shoreline Stabilization	Shoreline erosion control practices using soft structures (plantings or organic materials), hardened structures, or a combination of the two to restore, protect, or enhance the natural shoreline environment.
Single-Family Housing	Housing that is designed and constructed for individual households as detached structures, as opposed to duplexes (two-family) and multifamily housing.
Soil Survey	A field and other investigation, resulting in a map showing the geographic distribution of different kinds of soils and an accompanying report that describes, classifies, and interprets such soils for use.
Special Area Management Plan	A comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies, standards and criteria to guide public and private uses of lands and waters, and mechanisms for timely implementation in specific geographic areas within the coastal zone.
Special Flood Hazard Area	Land in the community flood plain subject to a one (1) percent or greater chance of flooding in any given year. The area may be designated as Zone A, AE, AO, Coastal A, V, or VE on the official Flood Insurance Rate Map (FIRM) for Gloucester County.
Sprawl	The extension of residential, commercial, and industrial development into areas beyond a city's boundaries that occurs in an unplanned or uncoordinated manner and characterized by low-density development that is dispersed and situated on large lots, geographic separation of essential places such as work, home, school, and shopping, high dependence on automobiles for travel, increased impervious surface area, and habitat fragmentation and degradation.
Storm Surge	An abnormal rise of water generated by a storm, over and above the predicted astronomical tides.
Strip Development	A linear form of development that generally appears along major transportation arteries, usually with many points of access between the roadway and adjacent businesses.
Suburban Development	An area or town located at the edge of an urban city (contained either just within or just outside of the city boundaries) that is typically a residential area and is often dependent upon the nearby city for employment opportunities and other benefits.
Tele Fees (Right-of-way Use Fees)	Fees which are collected from telecommunications companies to recover increased maintenance and construction costs resulting from the private use of VDOT rights-of-way for utilities.
Total Maximum Daily Load (TMDL)	The sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources, natural background loading and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

Term	Definition
Traditional Neighborhood Design	Village-style development that includes a variety of housing types, a mixture of land uses, an active center, a walkable design and often a transit option within a compact neighborhood scale area.
Transfer Of Development Rights (TDR)	The process by which development rights from a sending property are affixed to one or more receiving properties.
Transit Oriented Development	An area of commercial and residential development at moderate to high densities near a station for heavy rail, light rail, commuter rail, or bus rapid transit transportation.
Transportation Demand Management	A combination of measures that reduce vehicle trip generation and improve transportation system efficiency by altering demand, including but not limited to the following: expanded transit service, employer-provided transit benefits, bicycle and pedestrian investments, ridesharing, staggered work hours, telecommuting, and parking management including parking pricing.
Transportation System Management	Integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.
U.S. Census Bureau	Part of the U.S. Department of Commerce. The agency serves as the leading source of quality data about the nation's people and economy through various surveys, such as the decennial U.S. Census, American Community Survey, and the U.S. Economic Survey.
Unemployment Rate	The number of unemployed people actively seeking employment as a percentage of the civilian labor force.
Urban Centers	The heart of an urban area, usually located at the meeting point of the city's transport systems, containing a high percentage of shops and offices.
Village Development Areas	An area designated by a locality that is appropriate for higher density development due to its proximity to transportation facilities, the availability of a public or community water and sewer system, or a developed area and to the extent feasible, to be used for redevelopment or infill development.
Virginia Beach-Norfolk-Newport News, VA-NC MSA	See Hampton Roads.
Virginia Outdoors Plan	The State Comprehensive Outdoor Recreation Plan developed and administered by the Department of Conservation and Recreation.
Waterman	A person who regularly engages in a commercial fishing activity.
Watershed	A defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet. In karst areas, the karst feature to which water drains may be considered the single outlet for the watershed.

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Term	Definition
Watershed Implementation Plan	A plan developed to identify how Chesapeake Bay jurisdictions are putting measures in place by 2025 that are needed to restore the Bay, and by 2017 to achieve at least 60 percent of the necessary nitrogen, phosphorus and sediment reductions compared to 2009.
Watershed Management Plan	A detailed vision and strategy, usually at the small watershed level, to achieve watershed management typically initiated by local governments in conjunction with other local planning efforts. Watershed management planning identifies specific actions to restore habitat and water quality, lands for conservation and development, and ways to reduce nonpoint sources of pollution while prioritizing pollution reduction actions.
Wetlands	Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
Wetlands, Tidal	Coastal salt and brackish marshes, mudflats, mangroves (tropical maritime trees or shrubs) and other swamps subjected to periodic tidal influence.
Wetlands, Nontidal	Those wetlands other than tidal wetlands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the U.S. Environmental Protection Agency pursuant to Section 404 of the Federal Clean Water Act, in 33 C.F.R. 328.3b.
Wetlands, Nonvegetated	Unvegetated lands lying contiguous to mean low water and between mean low water and mean high water, including those unvegetated areas of Back Bay and its tributaries and the North Landing River and its tributaries subject to flooding by normal and wind tides but not hurricane and tropical storm tides.
Wetlands, Vegetated	Lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half (1½) times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing any of the following species: saltmarsh cordgrass, saltmeadow hay, saltgrass, black needlerush, saltwort, sea lavender, marsh elder, groundsel bush, wax myrtle, sea oxeye, arrow arum, pickerelweed, big cordgrass, rice cutgrass, wildrice, bulrush, spikerush, sea rocket, southern wildrice, cattail, three-square, buttonbush, bald cypress, black gum, tupelo, dock, yellow pond lily, marsh fleabane, royal fern, marsh hibiscus, beggar's tick, smartweed, arrowhead, sweet flag, water hemp, reed grass, or switch grass.
Working Lands	Lands used primarily for crop production and grazing.
Working Waterfront	Parcels of property that provide access for water-dependent commercial activities, or provide public access to the navigable waters of the state.
Zoning	The process of classifying land within a locality into areas and districts, such areas and districts being generally referred to as "zones," by legislative action and the prescribing and application in each area and district of regulations concerning building and structure designs, building and structure placement and uses to which land, buildings and structures within such designated areas and districts may be put.

Term	Definition
Zoning Designations	A designated geographic area that is subject to controls over types of land uses, density, and lot requirements. A zoning district will be designated in the zoning ordinance text and delineated on the zoning map.
Zoning Ordinance	Local or municipal laws that establish land usage regulations for properties in a specified area.

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Appendix B

2006 Citizen Survey Description and Results

In preparation the Comprehensive Plan update, a citizen survey was created to gather the community's opinion. Surveys, commonly used for updates, provide the opportunity to determine public views and concerns. There are various types of surveys used to gauge community opinion, ranging from scientifically-controlled surveys to open surveys, sometimes published in newspapers, online, or with utility bills.

An open survey was utilized for this update as it allowed all the work to be completed internally. The questions posed were written by Planning staff and reviewed by the Planning Commission prior to finalization. Surveys provide a "snapshot" of citizen views and, while they can be a valuable tool for a planning body, this group must prepare the Comprehensive Plan.

The survey was published in the BeeHive, which was mailed to County residents in December 2006, as well as an online version available through the County and Planning Department websites. The County collected submissions over a 3 month period and received 368 responses (224 online and 144 by mail), which were compiled in a database to produce a full summary. The following pages contain the full results of the survey. Since not every participant answered every question, the number of times a question was left blank is shown in parentheses. The final question allowed citizens to write-in their responses. Not every participant chose to provide a response. A general summary of write-in responses is provided with Question 41.

2006 Citizen Survey Summary

1. How long have you lived in Gloucester County? (15)

Less than one year	13
1-5 years	94
5-10 years	60
More than 10 years	147
All my life	39

2. In what District of Gloucester County do you live? (29)

Petsworth	81
Ware	73
York	20
Abingdon	95
Gloucester Point	70

3. In your District, do you think the residential growth is: (25)

Too fast	176
Too slow	12
About right	155

APPENDIX B

4. How long do you expect to continue living in Gloucester County? (19)

Less than one year	9
1-5 years	34
5-10 years	47
More than 10 years	259

5. Are you generally satisfied with the location of your home relative to places that you frequent, such as place of work, grocery, etc.? (19)

Yes	323
No	26

6. Do you own or rent your home? (21)

Own (See Data Below)	301
Rent	46
How long have you owned/ rented your home?	
1-5 Years	115
6-10 Years	46
11-15 Years	34
16-20 Years	27
21-25 Years	20
26-30 Years	19
30 Plus Years	26

7. Do you intend to purchase a home within the next 5 years? (31)

Yes	47
No	255
Maybe	65

With respect to the future growth and development of Gloucester County, how important to you are the following issues?

	Very Important (5)	Moderately Important (4)	Important (3)	Minimally Important (2)	Unimportant (1)	No Opinion (0)
Working in the community in which you live (32)	100	47	65	66	37	21
Broadening the county's tax base (39)	71	44	95	60	41	18
Encouraging industrial growth (32)	47	45	43	107	91	3

	Very Important (5)	Moderately Important (4)	Important (3)	Minimally Important (2)	Unimportant (1)	No Opinion (0)
Attracting new business (33)	74	67	78	60	53	.3
Improving housing availability, affordability & cost (33)	87	56	80	51	55	6
Improving roads & highways (29)	136	66	86	37	11	3
Managing growth in the county (28)	259	36	32	5	7	1
Encouraging planned mixed-use development (36)	81	66	92	42	42	9
Concentrating growth where utilities are provided (34)	93	65	86	53	30	7
Preserving agriculture (26)	196	65	60	11	5	5
Preserving forest land (27)	244	53	33	7	2	2
Protecting water quality & water resources (27)	287	37	15	1	1	27
Preserving the county's rural character (28)	222	61	38	13	4	2
Preserving historic sites and structures (28)	245	53	27	11	2	2
Preserving natural resources and open space (28)	255	53	25	4	2	1
Preserving wildlife habitat (26)	254	45	31	8	2	2
Preserving archeological sites (62)	196	51	40	13	3	3
Protecting scenic views and vistas (30)	223	58	45	8	1	3

APPENDIX B

	Very Important (5)	Moderately Important (4)	Important (3)	Minimally Important (2)	Unimportant (1)	No Opinion (0)
Improving the appearance of Route 17 (31)	154	78	65	23	16	1
Providing public access to the water (34)	115	67	76	46	26	4
Sidewalks in certain areas (31)	78	56	84	73	38	8
Bike trails and/or walking trails (29)	129	62	71	49	20	8

The survey printed in the BeeHive did not include numbers for respondents to circle, however, it did provide the row and most respondents indicated an answer within the row. The online survey did not contain the same error.

8. Which do you feel is more important? (20)

Preserving rural areas such as farms and forest land	192
Encouraging development in our County	14
Both are equally important	142

9. Do you feel there is an adequate amount of affordable housing in Gloucester County? (19)

Yes	158
No	131
No opinion	60

10. What types of new housing do you think are needed in Gloucester County?

Single-family homes	131
Townhouses/Condominiums	42
Apartments	37
A mix of single-family, townhouses/condominiums & apartments	107
Senior living	107
None	91

11. If you think multi-family housing is needed in the County, where in the County should it be located?

Gloucester Courthouse	70
Gloucester Point	78
Hayes	55
White Marsh	57

Northern Gloucester	69
Other* (See data below)	39

*Spread throughout (8), Areas with public water and sewer (3), no preference (3), waterfront (1), Rt14/Ware Neck (1), Bena (1).

12. What types of growth are needed in Gloucester County?

Commercial (retail/businesses)	155
Manufacturing, Processing, Distributing	106
Residential	74
No preference	23
None	115

13. Do you think residential and business growth in Gloucester County should be directed to certain areas of the county so that other areas of the county can remain rural? (24)

Yes	294
No	30
No opinion	20

14. Are you concerned about Route 17 access and safety? (23)

Yes	274
No	60
No opinion	11

15. Would you prefer growth on Route 17 to develop as: (51)

A commercial strip corridor	78
A residential area with buffers	43
Some of A & B	196

16. If there was an alternative route to Route 17 between the Courthouse and the Point would you foresee using it? (33)

Yes	234
No	101

17. Do you work in Gloucester County? (20)

Yes	132
No	130
Retired	86

18. If no, how far do you travel to work one way?

Less than 25 miles	86
25-50 miles	69
50-75 miles	12
Over 75 miles	7

APPENDIX B

19. What city/town/county is your place of work?

Newport News	47
Hampton	22
Williamsburg	15
York County	14
Norfolk	7
James City County	4
Middlesex	4
Mathews	3
Richmond	3
Poquoson	2
Saluda	2

Each with one: Alexandria, Ashland, Fairfax, King & Queen, Naxera, Northern Virginia, Stafford, Maryland, West Point

20. What is the main reason you work outside of Gloucester County?

More money	34
Lack of opportunities here/ comparable work not available	48
Already had job when moved here	14

21. What type of employment opportunities would you like to see created in Gloucester County?

Commercial/Retail/Wholesale	130
Manufacturing, Processing, Distributing	114
Farm related/ Agri-business	109
Construction	39
Technical	182
Other	44
None	48

22. Where do you think industrial and/or manufacturing type uses should be located in the County?

Northern County	76
Current/Designated Business Park	59
Nowhere	33
Along Route 17	29

23. Should the County offer incentives to attract industry? (32)

Yes	107
No	177
No opinion	52

24. Do you think the County should start designating certain roads as Greenways to protect the scenic views and rural character of the area through increased setbacks and/or buffers? (23)

Yes	287
No	31
No opinion	27

25. Would you like to see marina facilities expanded to incorporate mixed-use development with commercial, retail, and residential areas where public utilities exist? (31)

Yes	152
No	103
No opinion	82

26. Should the County strive to limit/protect development in flood-prone areas through zoning and land use regulations? (27)

Yes	297
No	26
No opinion	18

27. If public sewer was available at your home, would you be interested in that service? (28)

Yes	180
No	130
No opinion	30

28. If public water was available at your home, would you be interested in that service? (35)

Yes	176
No	120
No opinion	37

29. Do you think sidewalks should be provided or required in more urban areas of the County? (26)

Yes	186
No	111
No opinion	45

30. Would you use sidewalks if they were available in your area of the County? (25)

Yes	176
No	12
Too rural of an area	155

31. Should Gloucester County regulate the commercial development in the Courthouse area in order to protect the architectural and historic character? (25)

Yes	291
No	27
No opinion	25

APPENDIX B

32. Do you think the County should create special tax districts for schools, water/sewer services, sidewalks, transportation, etc. where needed? (34)

Yes	135
No	94
No opinion	105

33. Would you like to see bike routes incorporated into existing public roads in the County? (26)

Yes	210
No	83
No opinion	49

34. Would you like to see off-road trails provided as recreational amenities in the County? (28)

Yes	225
No	61
No opinion	54

35. Please check all of the uses you would like to see incorporated in future trails in the county.

Biking	249
Horses	127
Pedestrian	279
Strollers	147

36. Would you like to see these trails link commercial and residential areas, such as Gloucester Courthouse and/or Gloucester Point, where available? (29)

Yes	215
No	52
No opinion	72

37. Would you like to see Gloucester Point developed in a village environment that takes advantage of the existing physical and natural environment to encourage tourism and improve quality of life? (29)

Yes	224
No	67
No opinion	48

Questions 38-40 gave citizens responding to the survey the opportunity to write in responses. Not everyone that completed the survey chose to fill in any or all of these. Below, each question is given with the number of people that responded to it and a summary of the main points of each.

38. What do you see as Gloucester County's greatest problem now or in the future?

Too much residential growth/ development	125
Route 17	98
Appearance	19

Traffic	62
Only route	17
Overcrowded High School	27
Total Responses	329

Other answers with multiple responses:

Empty buildings such as Wal-Mart and Winn-Dixie not being used, No affordable housing, growth without proper infrastructure, too many homes on septic systems, losing rural character

39. What do you see as three of the most desirable characteristics of Gloucester County?

Rural	175
Country-like/Small Town	45
Open/Green Space	32
Water (front, access, proximity)	107
Friendly People	60
Historic	37
Low crime/Safe	36
Schools	27
Parks and Recreation	25
Low Taxes/Cost of Living	23
Less Traffic/Congestion	21
Total Responses	315

Other answers with multiple responses:

Beautiful, Scenic, Quiet, the Courthouse Area, Affordable Housing, Sense of Community

40. What do you see as the three most undesirable characteristics of Gloucester County?

Route 17	167
Appearance	47
Traffic	66
Only route	23
Excessive Residential Growth and Development	90
Secondary Road Conditions	41
Overcrowded Schools	37
Too Much Retail/Chains	30
Lack of Shopping Choices	29
Abandoned Buildings	27
Toll on Coleman Bridge	15
Total Responses	318

Other answers with multiple responses:

Not enough job opportunities, taxes too high for services citizens receive, lack of infrastructure, lack of affordable housing, too many septic systems/issues

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Question 41 gave citizen responders the opportunity to provide any additional comments. Over 185 citizens chose to take advantage of this space. Below are a few of their comments:

“Gloucester is a great place to live. I just wish they would spend more tax money improving the schools and roadways.”

“Thanks for the survey. This will be difficult with many wanting more services, yet unwilling to change and pay more in taxes. Let’s keep our small town appeal and not try and compete head to head with York County or James City County. That is why Gloucester is a special place to live, enjoy and grow! We love it here!”

“I do not support removing the toll from the Coleman Bridge. I like the idea of paying for what you use.”

“...Gloucester is a beautiful place with BEAUTIFUL trees and wild life, and I truly pray that we will choose to keep it that way.”

“I am concerned with the rapid uncontrolled growth. I am not alone when I say I moved to Gloucester b/c of the rural small town feel. I hate that it’s beginning to look like Newport News.”

“We need higher paying jobs so that citizens do not have to commute out of the county to work to be able to afford to live here.”

“Control the growth on Rt 17 before it’s too late. It may already be too late.”

“County income not keeping pace with the call for services.”

“Especially concerned over the fact that there is only one high school for the whole county.”

“Traffic congestion on the corner of Main Street and Rt. 14.”

“We saw a huge increase in taxes, but no new services offered to us to account for that huge increase!”

“Rt 17 does not provide any support for Pedestrian traffic or Bicycle Traffic. It would be nice if a buffer, or sidewalk, or Bike Trail were provided for Public Use.”

“Although I am against growth, I do think we need another grocery store.”

“I have seen a lot of change in the past 30 years. Some change has been welcome and other things have not been so good. My family moved to Gloucester because of the schools and now I hear more families complain about the high school. I feel that it is a real problem and it needs to be addressed before more homes are built. Also there needs to be affordable housing for all people at all income levels. The price of housing is so high younger families and older people are being priced out of being able to afford a house. Something needs to be done so all can afford a place to live.”

“I would like to see more cultural activities such as concerts and plays brought to the county.”

“Curbside pick-up of debris/heavy objects (not all of us own trucks).”

“The addition of more buildings and development is ludicrous considering that the old Wal-Mart shopping center and many like it are still empty.”

Appendix C

October 2007 Joint Meeting with Board of Supervisors, Planning Commission, and Steering Committee

On Tuesday, October 16, 2007, a Joint Meeting was held between the Board of Supervisors, Planning Commission, and Steering Committee regarding land use and planning. Below is a copy of the agenda and meeting attendees.

Gloucester County Board of Supervisors
Land Use and Planning Work Session
Tuesday, October 16, 2007, 4 P.M.
Gloucester Main Street Library Community Room

- I. Call to Order
- II. Roll Call
- III. Invocation and Pledge of Allegiance
- IV. Introduction of the Planning Commission and the Comprehensive Plan Steering Committee Members
- V. Consideration of a Grant Opportunity for Woodville Park
- VI. A Review of Land Use Transportation Legislation Adopted by the General Assembly
- VII. Review of the Comprehensive Plan Citizen Survey Results
- VIII. Comprehensive Plan Review Update
 - A. Review of Draft Land Use Chapter
 - B. Discussion of Significant Issues to be addressed during the Comprehensive Plan Update
 - 1. Size and Density of the Development District
 - 2. Size and Extent of the Suburban Countryside District
 - 3. Route 17 Corridor- Existing Development Patterns, Current Zoning and Comprehensive Plan's Future Land Use Recommendations
- IX. Affordable Housing Study Update
- X. Utilities Discussion
- XI. Conclusions and Direction to the Committee and Commission from the Board
- XII. Recess
- XIII. Adoption of a Resolution for Abingdon Women's Club
- XIV. VACO Voting Delegate
- XV. Adjourn

Individuals Present at the October 2007 Joint Meeting

Board of Supervisors

Charles R. Allen, Jr.
Teresa L. Altemus
Burton M. Bland
Michelle R. Ressler

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Christian D. Rilee
Louise D. Theberge
Planning Commission
Col. Thomas Arnold
Dr. Keith Belvin
Henry McVey
Kenneth Richardson
William Rodgers
Mark Strawn
Louise Theberge
Lawrence Wilkinson
Michael Winebarger
Dr. Eric Weisel

Steering Committee

David Birdsall, Jr.
Jeff Breaks
Pat Cooney
Warren Deal
Scott Harwood
Jack Musick
Philip Olekszyk
George Zahn
Christopher Corr

Further information regarding the Land Use and Planning Work Session on October 16th, 2007 may be found at the following links, in portable document format:

Work Session Packet:

<http://www.gloucesterva.info/Portals/0/board/documents/OCT162007EPACKET.pdf>

Work Session Minutes:

<http://www.gloucesterva.info/Portals/0/board/documents/October162007.pdf>

Appendix D

February 2008 Joint Meeting with Board of Supervisors and Planning Commission

On Tuesday, February 19, 2008, a Joint Meeting was held between the Board of Supervisors and Planning Commission. Below is a copy of the agenda, the meeting attendees, and an excerpt from the Joint Meeting Packet regarding topics for discussion.

Gloucester County Board of Supervisors

Agenda

Tuesday, February 19, 2008

6:30 P.M.

Gloucester Main Street Library Community Room

- I. Call To Order
- II. Roll Call
- III. Invocation and Pledge of Allegiance
- IV. Approval of Minutes – January 15, 2008 & January 16, 2008
- V. National Fish & Wildlife Foundation Chesapeake Bay Stewardship Fund Grant Application
- VI. Gloucester Affordable Housing Needs Assessment Presentation
- VII. Brief Overview of Comprehensive Plan Steering Committee Update Process Followed by Discussion
- VIII. Senate Bill 768- Impact Fees
- IX. Supervisors Announcements
- X. Closed Meeting...pages 137-139
- XI. Adjourn

Steering Committee Topics for Discussion Joint Meeting – February 19, 2008

1. Rural Character
 - A. Setbacks to preserve character of different roads and areas
 - B. Preserve agriculture, forestry, and aquaculture as viable traditional industries in the County
 - C. Recognize suburban versus rural areas of county
 - D. Designate Greenways
 - E. Plan to protect open space through land bank or other funding sources
2. Route 17
 - A. Strip commercial development and zoning
 - B. Existing development/redevelopment - attractive commercial development - create a “vision” for Route 17 - Village Nodes
 - C. Increased setbacks to improve aesthetics
 - D. Revitalization along Route 17 – abandoned buildings, signs
3. Transportation

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- A. Land use as it relates to transportation
- B. Alternative Routes
- C. Connectivity
- D. Create alternative employment and commuting options in the County to reduce number of vehicles (wireless, telecommuting)
- E. State mandates for UDA's, access and connectivity
- F. Bicycle and pedestrian facilities - streets to serve all users
- G. Greater Access Management
- 4. SC-1 residentially zoned land
 - A. By right zoning and Comp Plan future land use plan - is there too much?
 - B. Ability of the County to provide for services related to this residential land if it gets developed (schools, roads, fire and rescue, utilities, impacts to the environment)
- 5. Economic Development
 - A. Courthouse - Historic, EDA initiatives
 - B. Light Industrial, contractors - alternative business park for contractors and other uses
 - C. Create wireless options in the County to allow for high tech businesses and other wireless dependent businesses to locate in the County
- 6. Affordable Housing (final draft of the housing study will be presented and is already on the agenda for discussion)
 - A. Availability
 - B. Incentives for developers to provide more
- 7. Quality of life assets (See Steering Committee comments attached)
 - A. Parks and Recreation
 - B. Trails and Greenways
 - C. Educational Opportunities (RCC, Vocational Training)
- 8. Location of Multi-family housing and industrial uses
- 9. Historic Resources

Individuals Present at the February 2008 Joint Meeting

Board of Supervisors

Teresa L. Altemus
Charles R. Allen, Jr.
Robert A. Crewe
Michelle R. Ressler
Christian D. Rilee
Louise D. Theberge
Gregory Woodard

Planning Commission

Col. Thomas Arnold
Phillip Bazzani
Dr. Keith Belvin
Henry McVey
Kenneth Richardson
William Rodgers
Mark Strawn

Michael Winebarger

Steering Committee

David Birdsall

Jeff Breaks

Christopher Corr

Warren Deal

Clara Hines

Jack Musick

Sue Perrin

Wesley Wilson

George Zahn

Further information regarding the February 2008 Joint Meeting may be found at the following links, in portable document format:

Work Session Packet:

<http://www.gloucesterva.info/Portals/0/board/documents/February192008E-packetSecure.pdf>

Work Session Minutes:

<http://www.gloucesterva.info/Portals/0/board/documents/February192008.pdf>

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Appendix E

March 2008 Community Outreach Public Meeting, Page Middle School, 7:00PM, Thursday, March 20, 2008

Agenda

- I. Welcome
- II. Introductions: Planning Staff, Members of the Citizen's Steering Committee, Planning Commission, and Board of Supervisors
- III. Comp Plan 101: What is a Comprehensive Plan?
- IV. Existing Conditions: Status of Our Community, Current Planning, Trends, & Issues
- V. Survey Summary: Summary of the results from the 2007 Citizen Survey
- VI. Discussion/Group break out
- VII. Conclusion: What is the next step in the process?

Planning Department Staff provided background information through two (2) presentations ("Comp Plan 101" and "Existing Conditions"), summarizing the comprehensive planning process and the committee's work to date. Staff supplied the results of the 2007 Citizen Survey and presented information on the county's website and Planning Newsgroup. The steering committee received comments and questions from the audience, which included a suggestion that the survey be mailed to residents and a comment regarding neighboring locality growth and its effect on Gloucester. A following conversation considered growth in Northern Gloucester and neighboring localities and the resulting traffic impacts on Route 17. Additionally, development density was discussed, including residents' build-out and growth preferences, development density, infrastructure improvement responsibility, and other development impacts on the County.

Following these discussions, the Comprehensive Plan update was presented with staff providing Goals and Objectives examples and informing the committee of future roadway improvements along Route 17 and their effects on the Comprehensive Plan. Staff also covered transportation options highlighted in prior meetings with a citizen requesting specifics within the transportation chapter. Ensuing conversation on transportation included the previous Comprehensive Plan's issues and a secondary (alternative) road network to Route 17. The available commercial property and existing property owner hardships along Route 17 was reviewed, with the audience asking about commercial zoning outside of the Court House. A suggestion for utilizing Rappahannock Community College and Gloucester High School to train high-tech workers who work and live (especially in workforce housing) in Gloucester was made. Following multiple suggestions on housing choices, Mr. Scudder and Mr. Frank Bryan, Executive Director of Habitat of Humanity, discussed multi-family and affordable housing options that maintain the County's rural character.

Conversation continued regarding whether local employers provide salaries that allow employees to live in Gloucester. Warren Deal stated that Gloucester has numerous affordable housing options, but also expressed concerns about the amount currently available. Keith Belvin suggested phased development that offers similar planning opportunities for future generations. Following a comment from an audience member, a discussion ensued regarding the water table, ground water supply, state requirements for a water supply plan, and public water and sewer extension. Christopher Corr examined the next steps in the Comprehensive Plan process and expressed his desire that the next public meeting occur in June or July.

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Appendix F

2010 June Meeting Series: Description and Survey Results

In June 2010, the Gloucester County Planning Department held three (3) open-house meetings, inviting residents to provide input on the community's future. Meetings were held from 5 PM to 8 PM on June 15 at Achilles Elementary School, June 22 at the Piankatank Community League, and June 24 at the Main Street Library's Community Room. The community survey and responses are shown on the following pages.



Comprehensive Plan Update 2010 Public Meeting Survey

Thank you for coming out tonight! We would appreciate if you could take a few minutes as you walk around this evening to answer the following questions based on your individual thoughts and feelings about Gloucester County and its future.

Please use the following scale for answering the questions below:

1-Strongly Disagree 2- Disagree 3- Neutral 4- Agree 5-Strongly Agree

Environment

1. What do you see currently as the largest environmental issue(s) facing Gloucester?

2. I am concerned with future development in Gloucester's flood prone areas.

1 2 3 4 5

3. More public water access is needed in Gloucester.

1 2 3 4 5

Green Infrastructure

4. Open spaces are valuable to Gloucester's quality of life.

1 2 3 4 5

5. New residential and mixed use developments should include a percentage of open space.

1 2 3 4 5

Housing

6. People of all income levels can find housing in Gloucester.

1 2 3 4 5

7. The existing housing stock is sufficient to meet the needs of our community.

1 2 3 4 5

8. I feel Gloucester needs more of the following housing type(s): (Please check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Apartments | <input type="checkbox"/> Duplexes |
| <input type="checkbox"/> Condos | <input type="checkbox"/> Single Family Homes |
| <input type="checkbox"/> Town Houses | <input type="checkbox"/> Manufactured Homes |
| <input type="checkbox"/> Senior Housing | <input type="checkbox"/> Other _____ |

9. Affordable workforce housing should be a requirement for new residential developments.

1 2 3 4 5

10. For Gloucester, in what price range do you consider housing to be affordable?

- | | | |
|--|--|--|
| <input type="checkbox"/> \$75,000-\$100,000 | <input type="checkbox"/> \$150,000-\$175,000 | <input type="checkbox"/> \$225,000-\$250,000 |
| <input type="checkbox"/> \$100,000-\$125,000 | <input type="checkbox"/> \$175,000-\$200,000 | <input type="checkbox"/> \$250,000-\$275,000 |
| <input type="checkbox"/> \$125,000-\$150,000 | <input type="checkbox"/> \$200,000-\$225,000 | <input type="checkbox"/> Above \$275,000 |

Urban Development Areas

11. There should be more opportunities to walk or bike to shopping or entertainment in Gloucester.

1 2 3 4 5

12. Future growth should be more compact in certain areas of the county, allowing others to remain rural.

1 2 3 4 5

13. Future growth in Gloucester should be concentrated in the following area(s) of the county:

Community Facilities

14. I feel I am served by an adequate amount of community facilities.

1 2 3 4 5

15. For each of the following community facilities/infrastructure items, place a check mark in the box that best applies:

Facility	Need More	Enough	Too Many
Schools (K-12)			
Schools(Vocational/ Higher Education)			
Libraries			
Parks			
Recreation Facilities			
Gathering Spaces			
Water Lines			
Sewer Lines			

16. Which items from question 15, if any, do you support expenditure of public funds to expand upon?

Transportation

17. I commute outside of Gloucester for work.

☐ Yes ☐ No (If no, skip to question 19)

18. As a commuter, I am likely to use transit options such as the Express Bus, if and when they become available.

1 2 3 4 5

19. I feel the county should invest in alternative routes to Route 17 for local traffic movement.

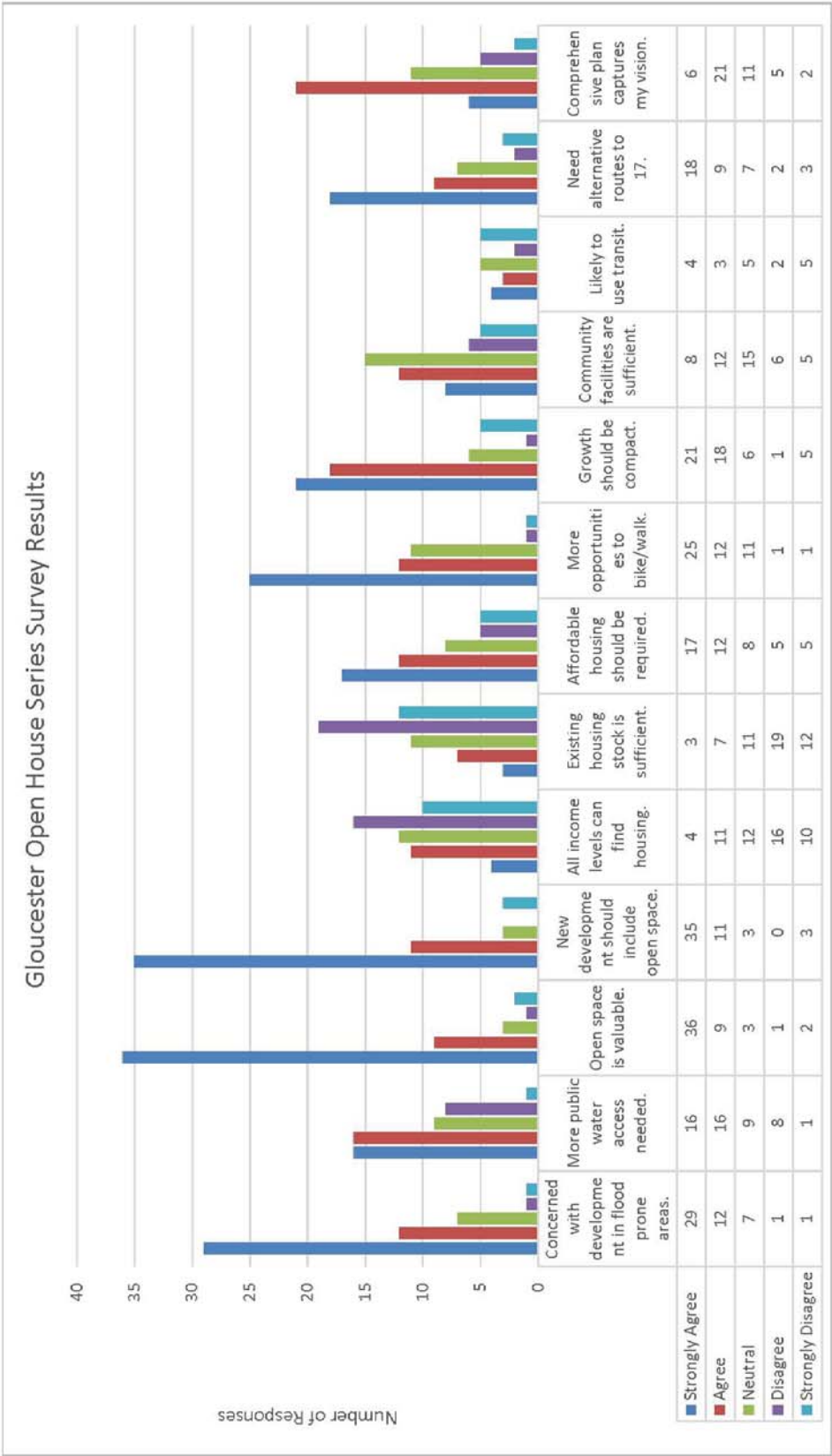
1 2 3 4 5

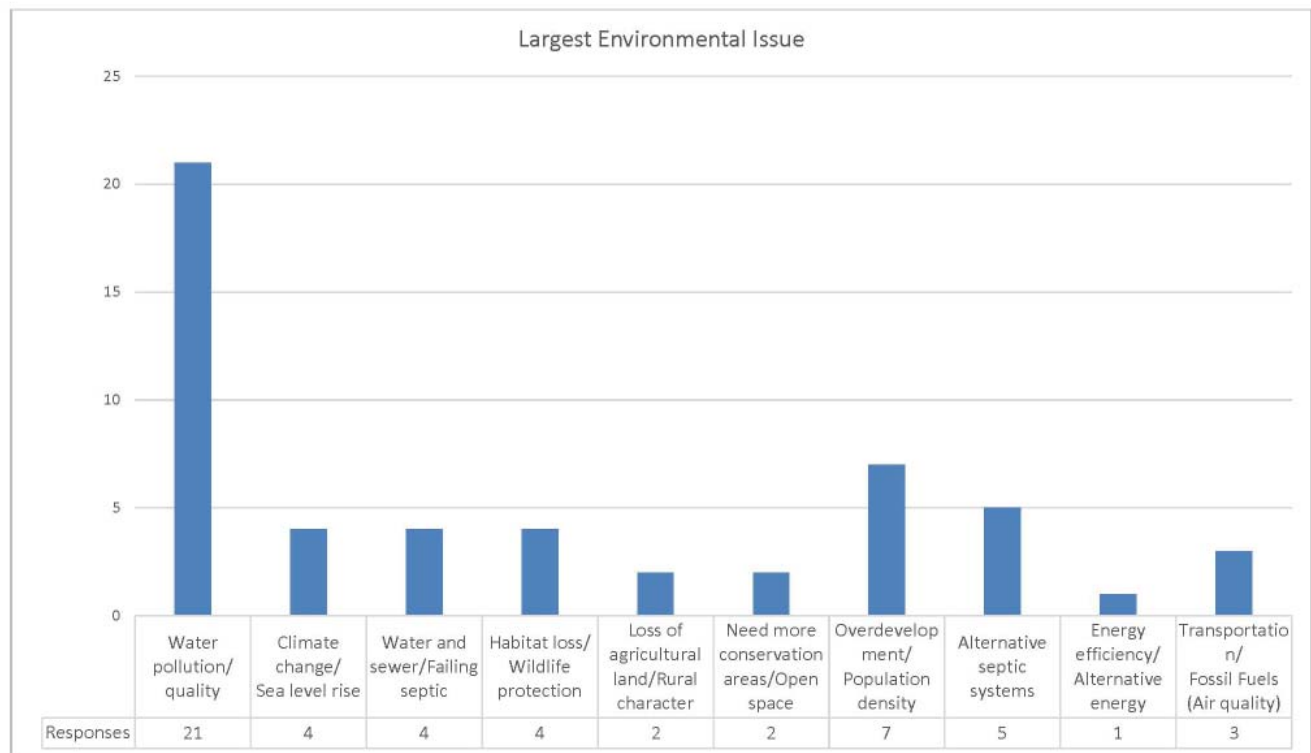
Future Land Use

20. Based on the information I have seen this evening, I feel the revised Comprehensive Plan will capture my vision for Gloucester in the next 20 years.

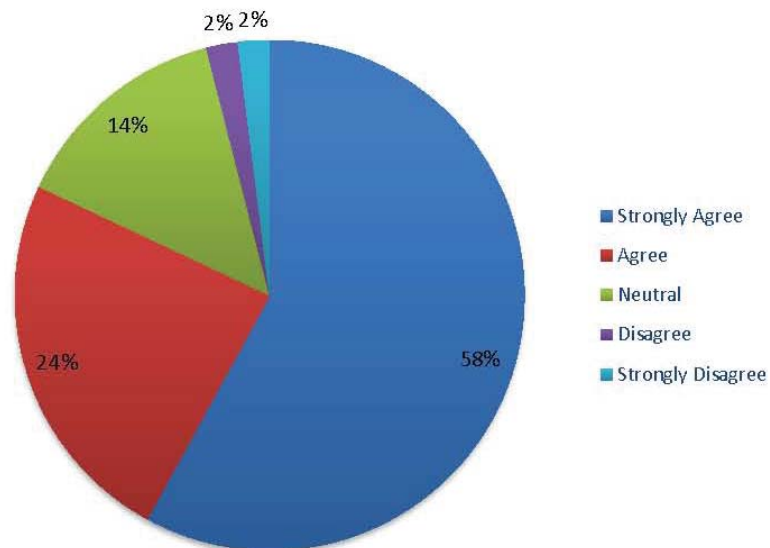
1 2 3 4 5

21. What's missing to complete *your* vision? _____

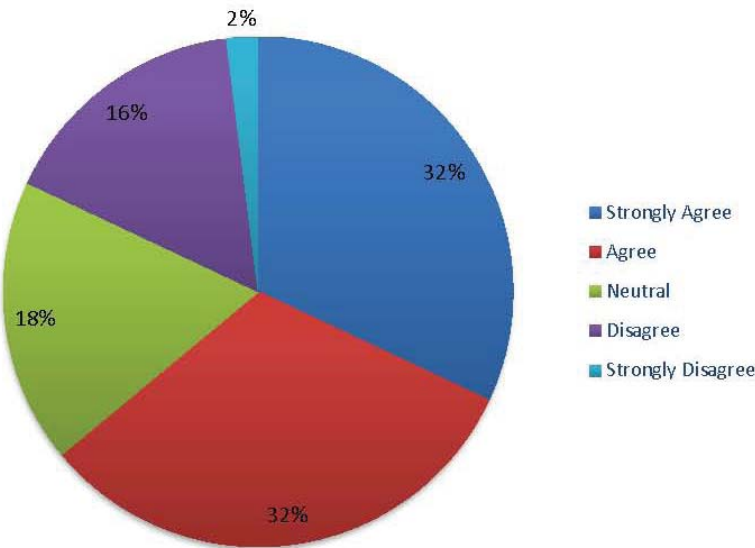




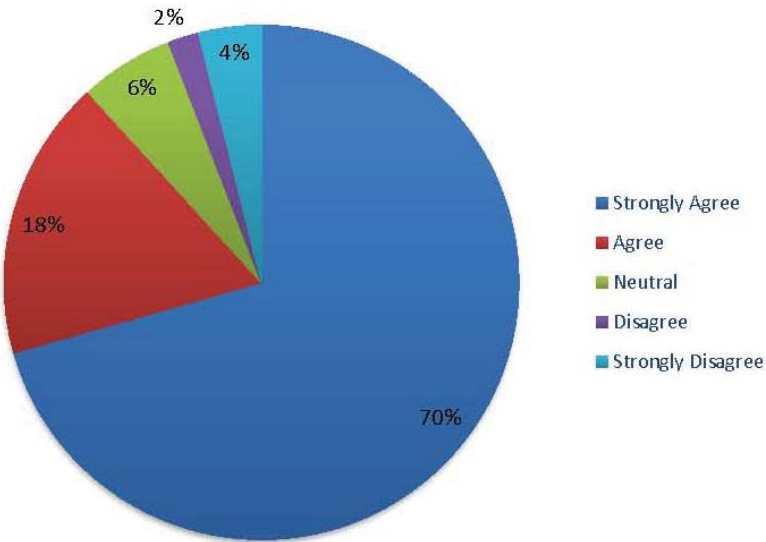
Concerned with development in flood prone areas.



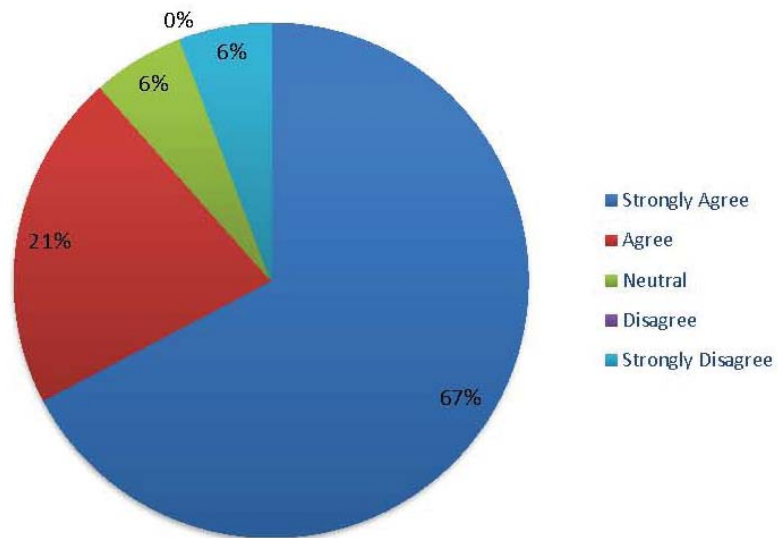
More public water access needed.



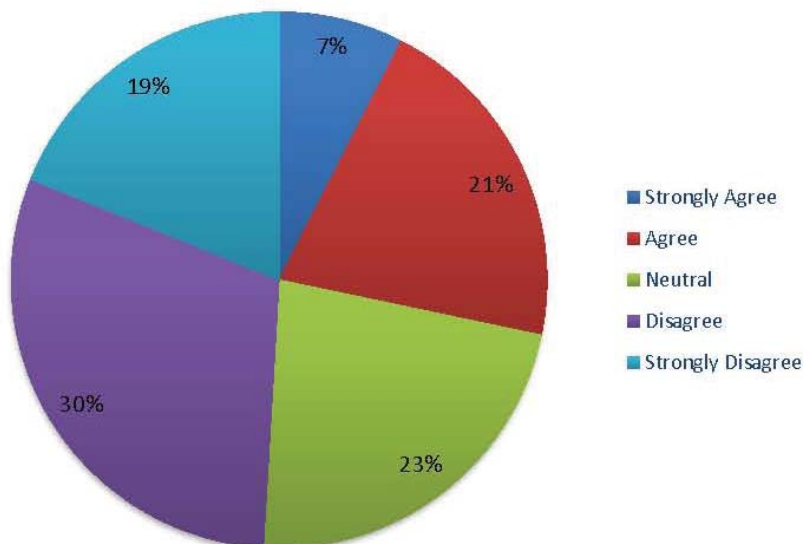
Open space is valuable.



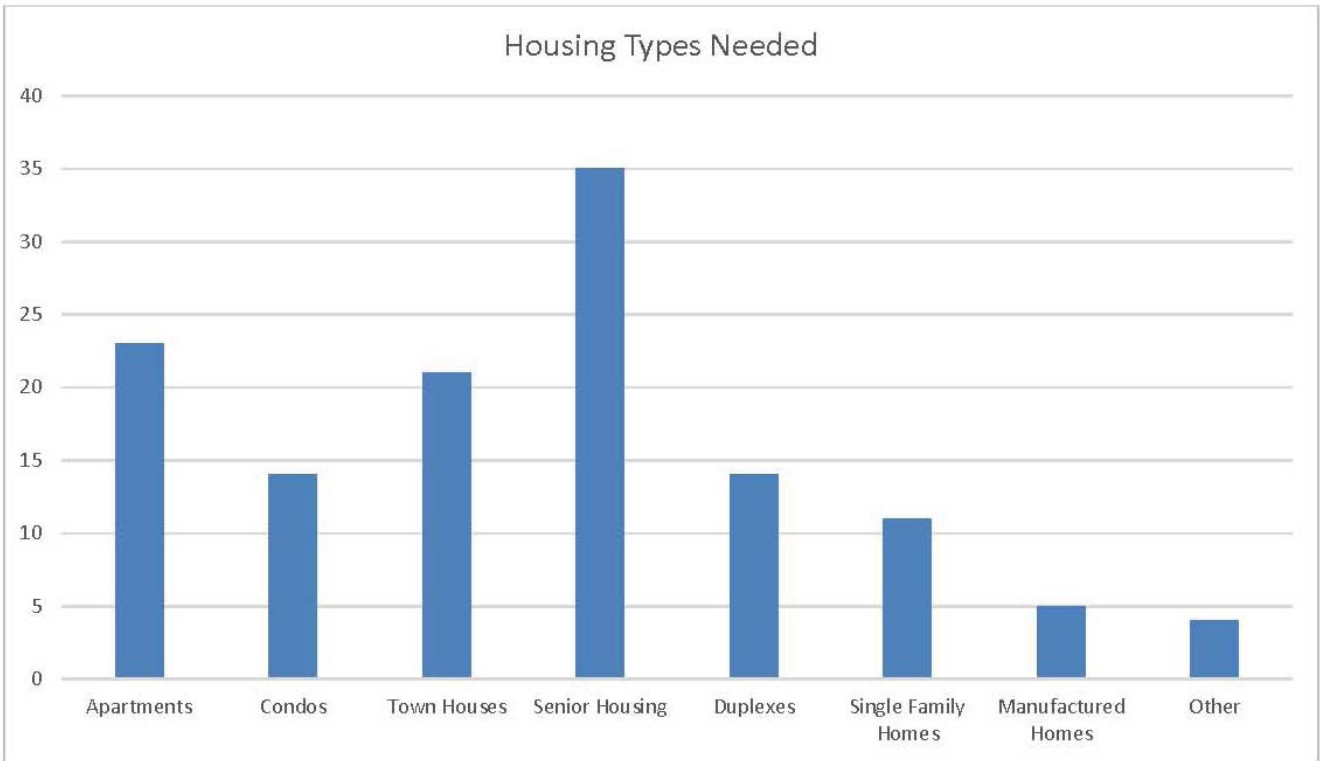
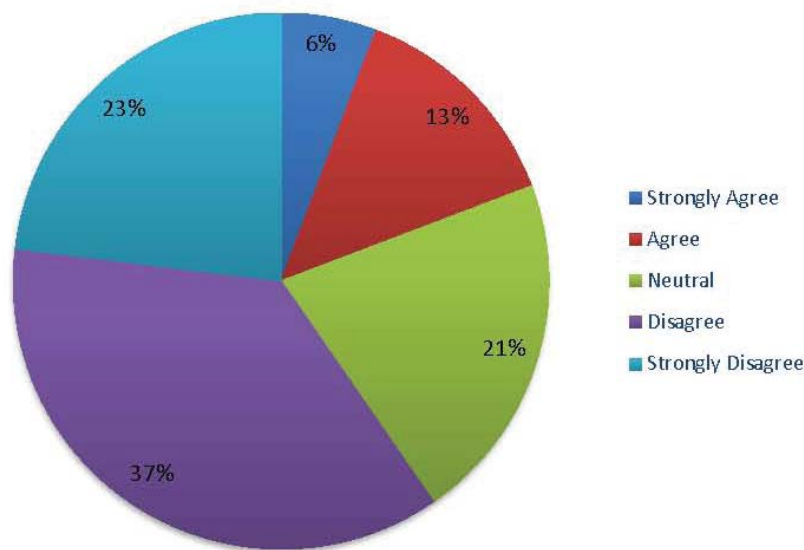
New development should include open space.

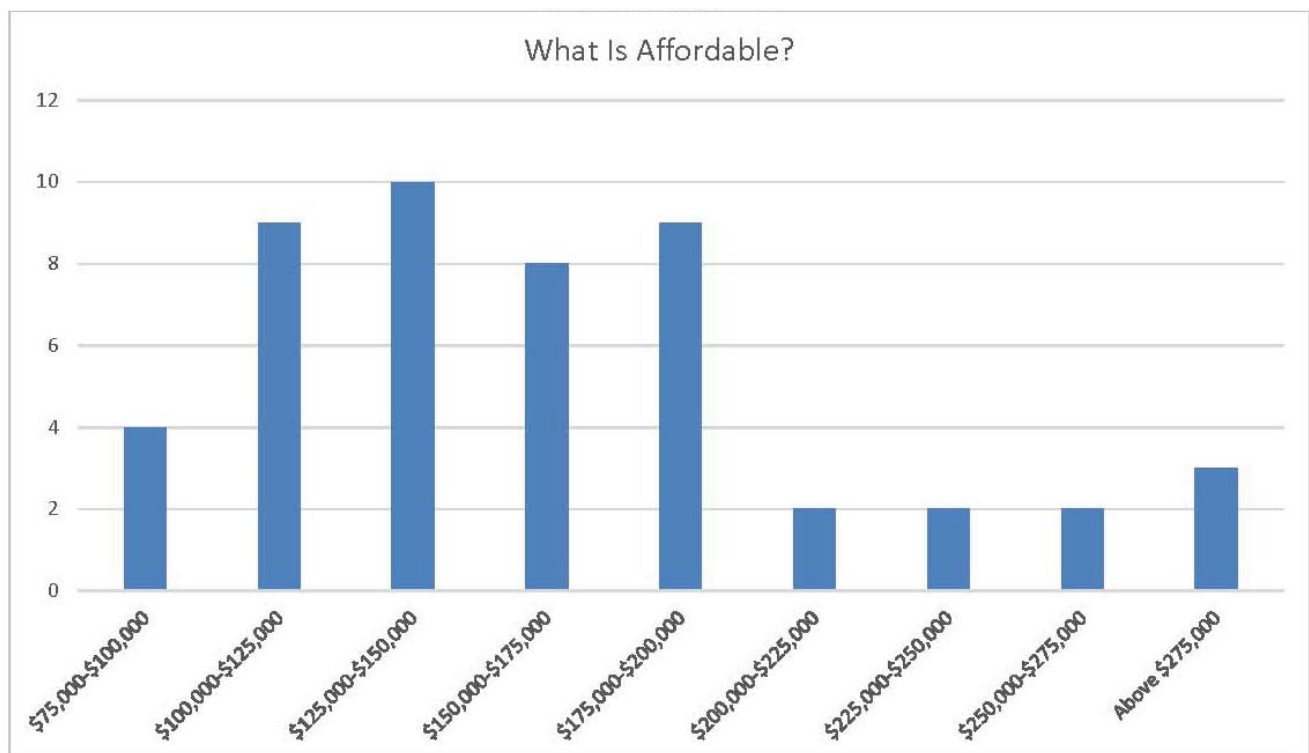
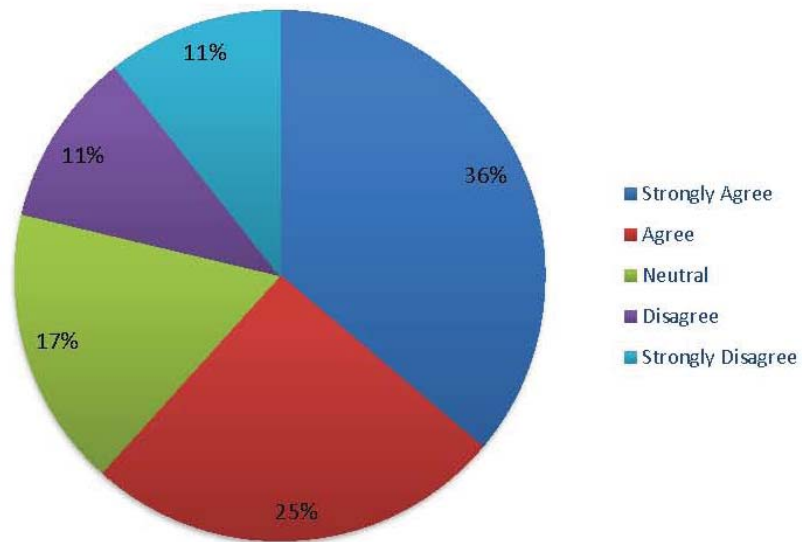


All income levels can find housing.

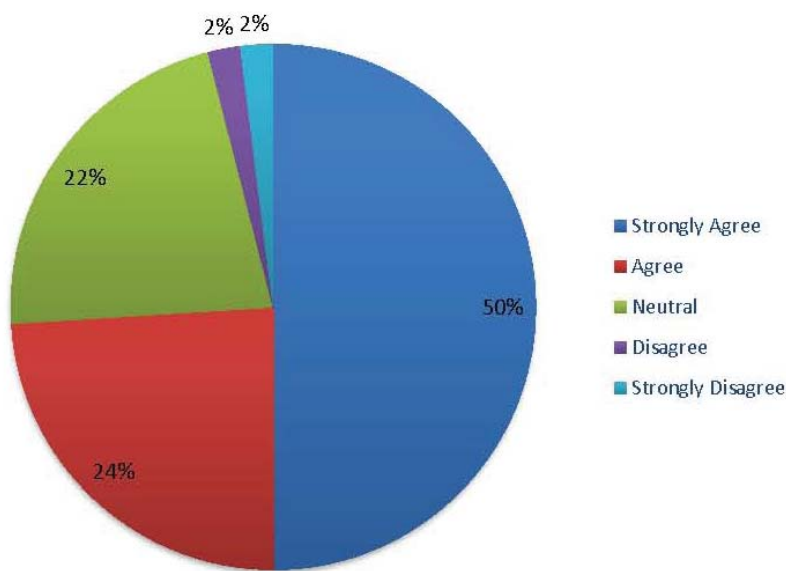


Existing housing stock is sufficient.

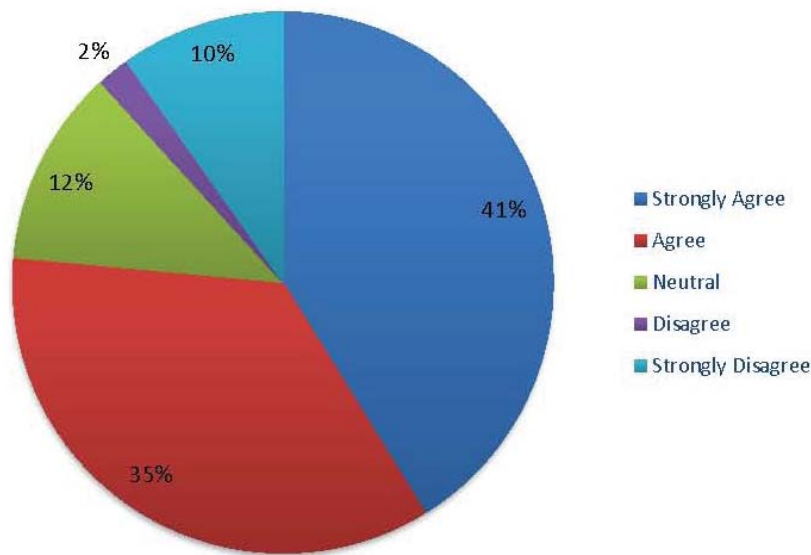


Affordable housing should be required.

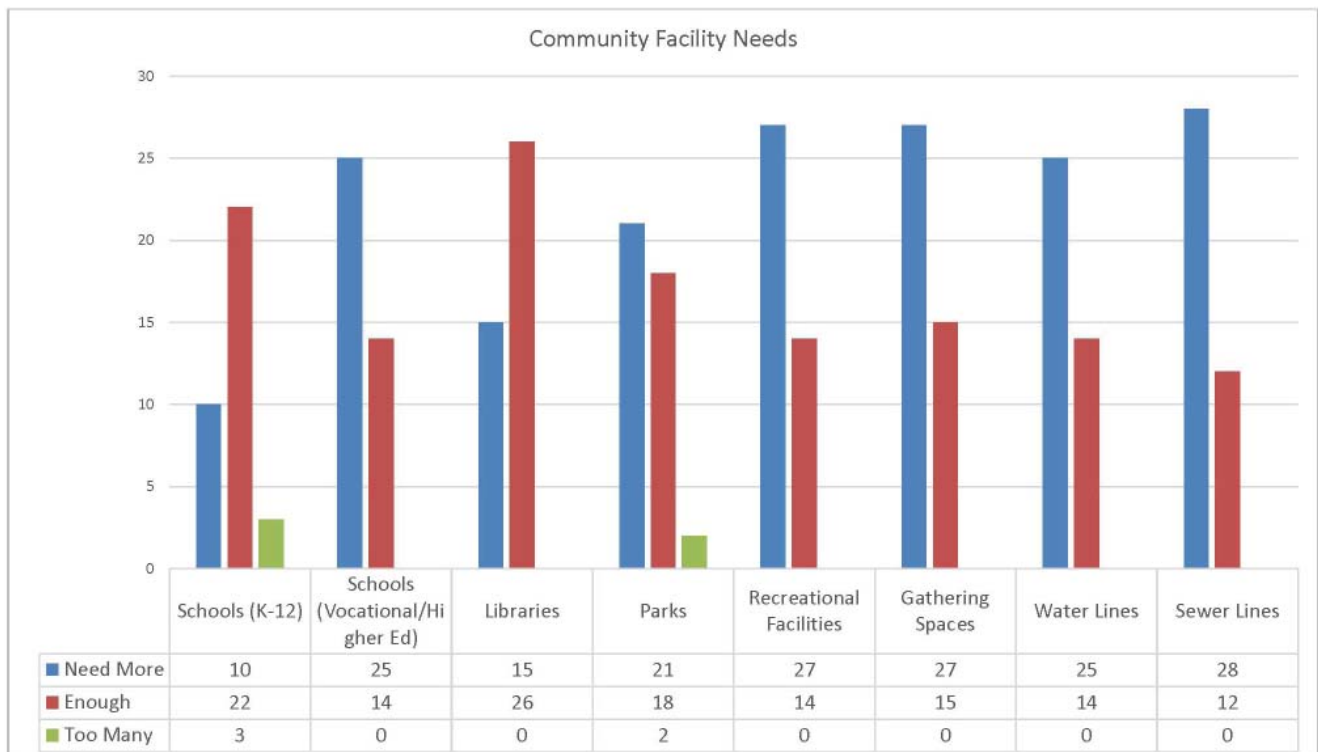
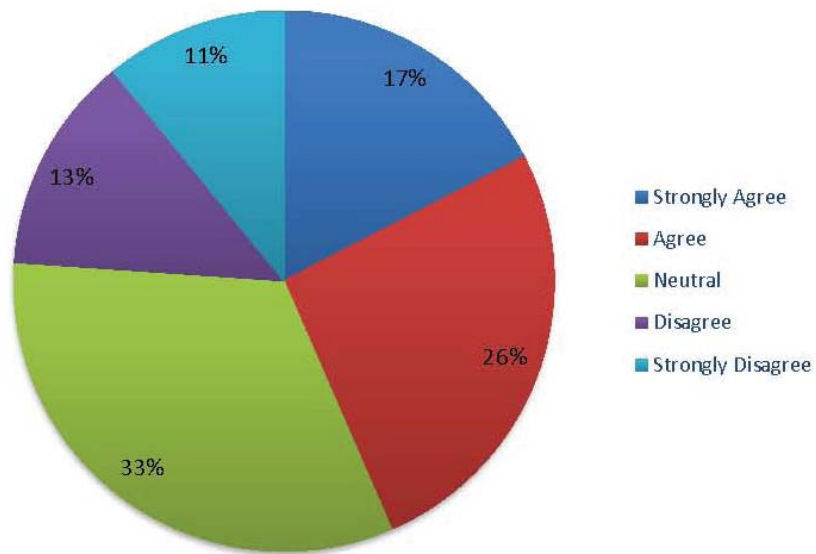
More opportunities to bike/walk.



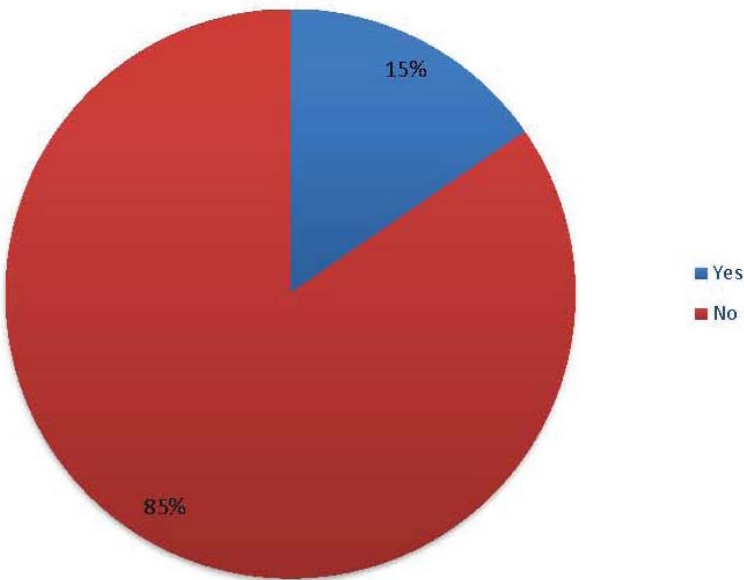
Growth should be compact.



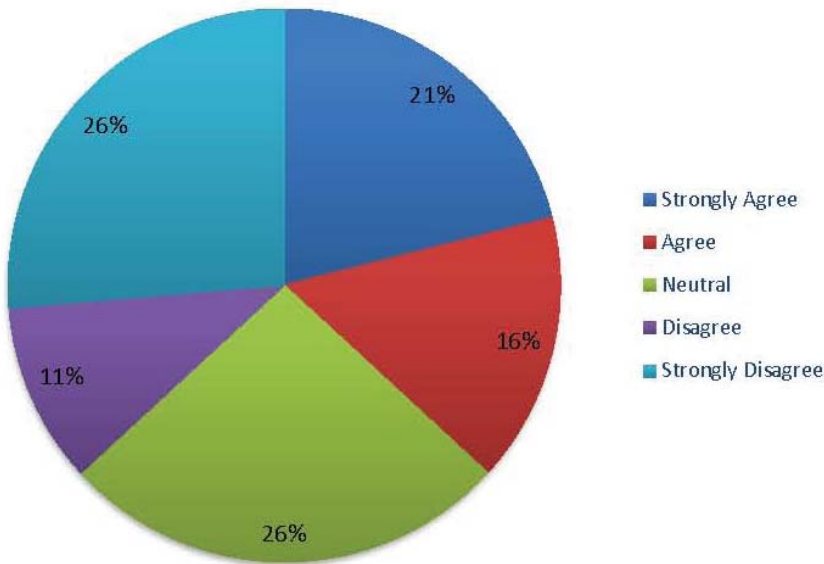
Community facilities are sufficient.

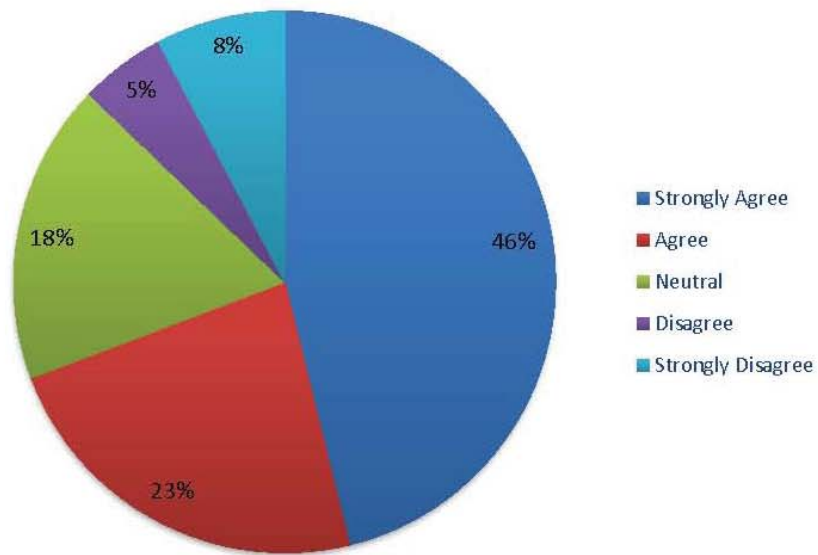
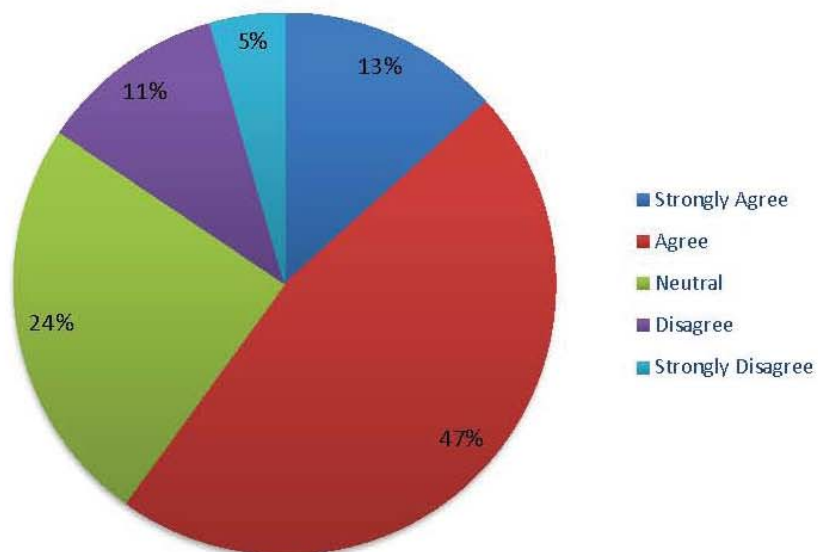


Commute outside Gloucester for work.



Likely to use transit.



Need alternative routes to 17.**Comprehensive plan captures my vision.**

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Appendix G

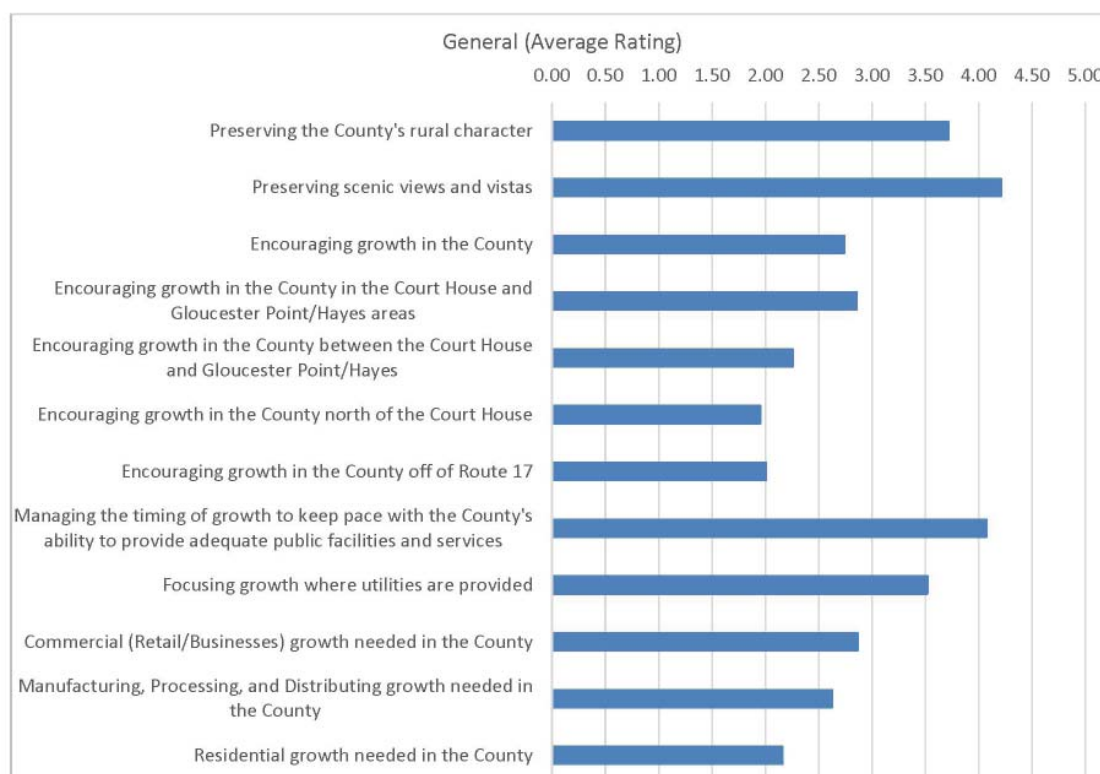
2015 Comprehensive Plan Survey

In October 2015, the Department of Planning and Zoning conducted a Comprehensive Plan Survey at the direction of the Planning Commission. This survey was performed on the County's SpeakUp Gloucester website, aimed to determine any changes in public opinion since the 2006 and 2010 surveys, and was used to advise the Planning Commission prior to finalization of the Comprehensive Plan.

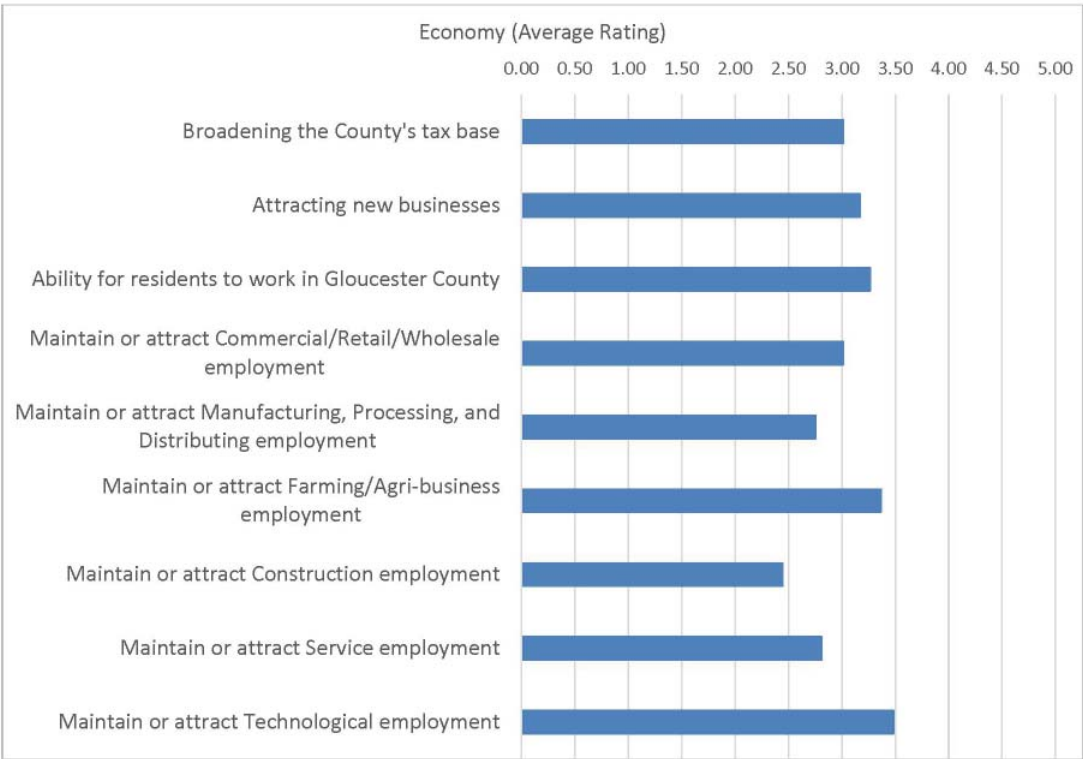
The survey contained 52 topics covering a variety of categories, including General, Economy, Housing, Natural Resources, Cultural Resources, Transportation, and Community Facilities. Participants were asked to rank each topic by their level of importance according to the following scale:

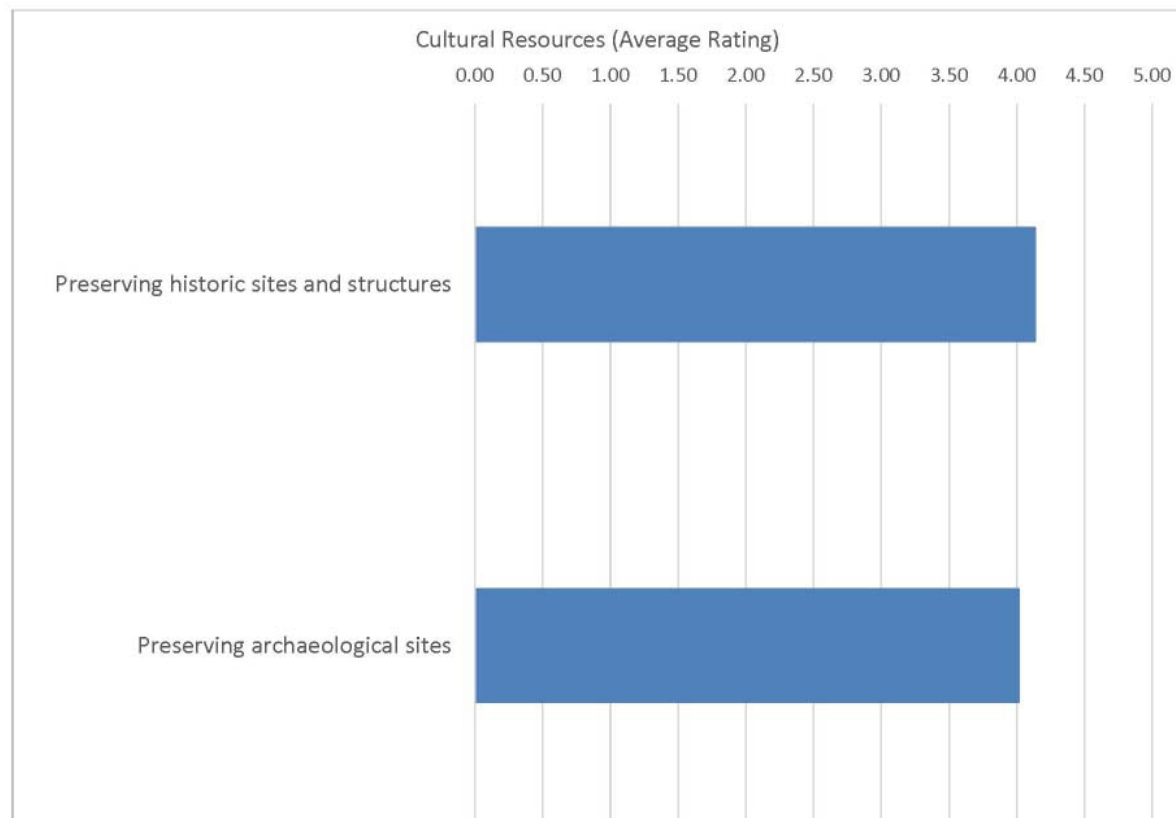
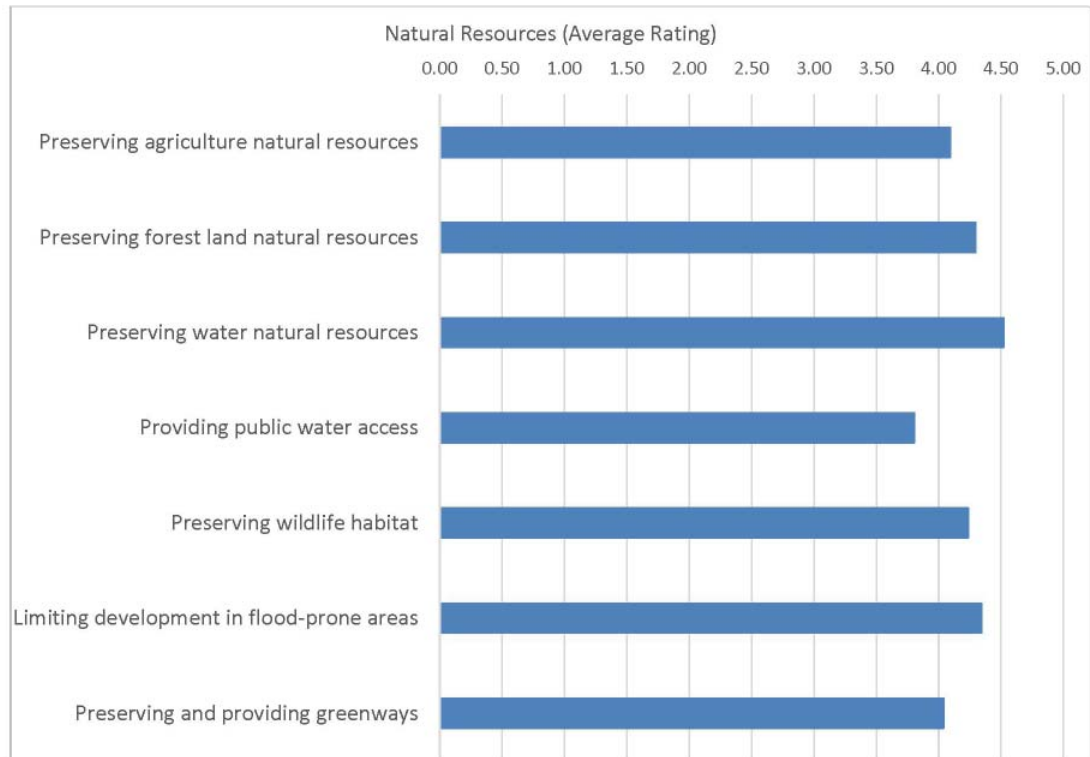
1. Not Important
2. Somewhat Important
3. Important
4. Very Important
5. Extremely Important

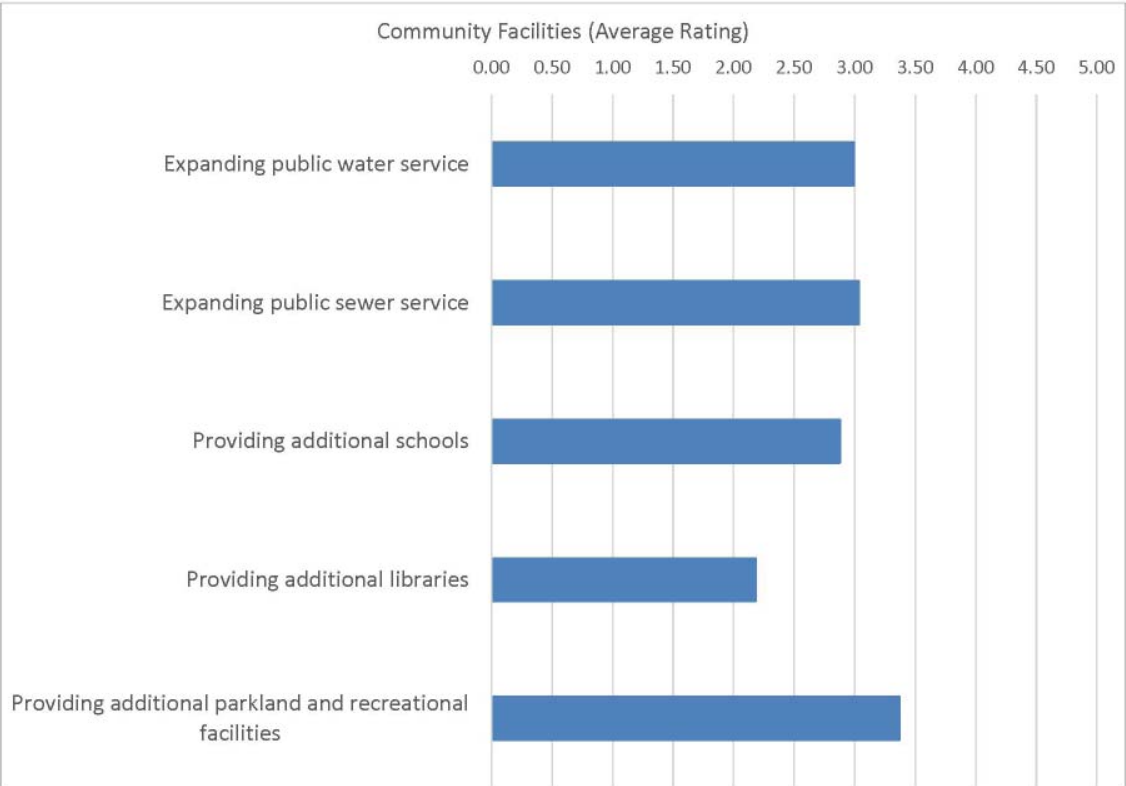
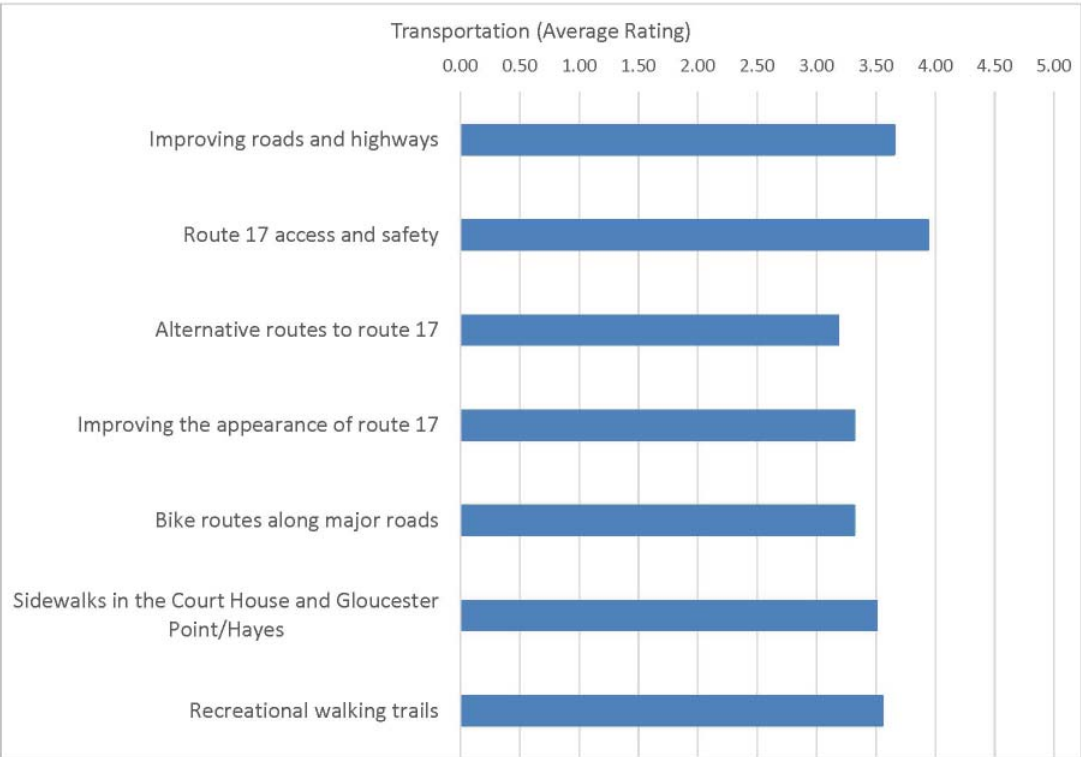
Conducted over a one (1) month time period, 149 citizens participated in this survey and the results confirmed that current public opinion on important planning issues was consistent with the feedback received in the previous surveys. The average ranking for each topic is provided on the following pages.



APPENDIX G





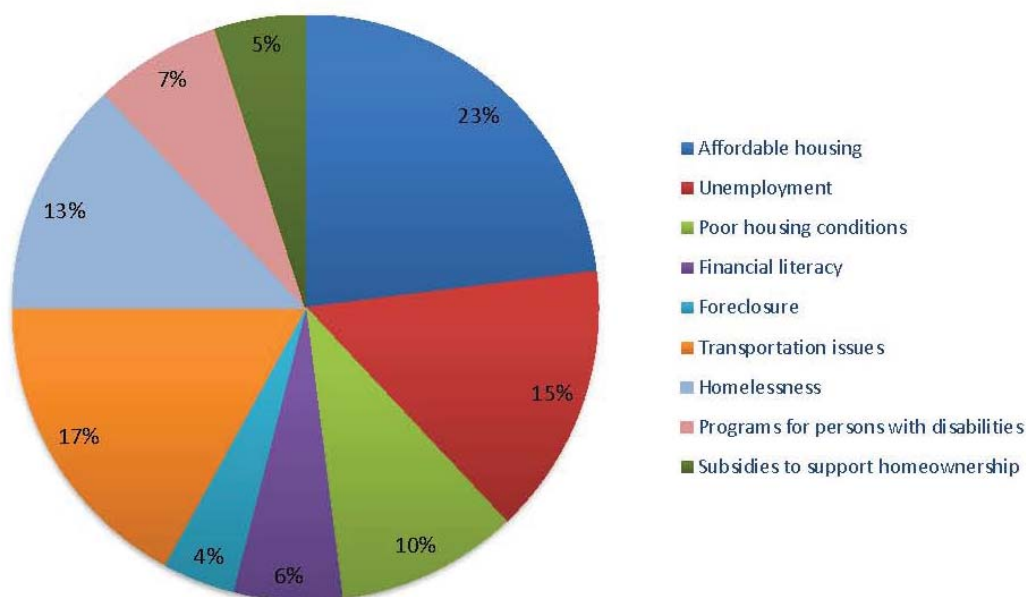


Appendix H

2007 Affordable Housing Needs Assessment

The 2007 Affordable Housing Needs Assessment identified affordable housing as the County's most critical housing issue. Other housing concerns include transportation, unemployment, homelessness, poor housing conditions, programs for the disabled, financial literacy, homeownership support, and foreclosure.

Critical issues facing Gloucester County's housing



The survey also asked respondents to identify the services and housing types missing or most needed in Gloucester. Every respondent selected affordable rental housing as the highest concern followed by affordable housing ownership (62.5%), low-income services (62.5%), disabled services (56.3%), and senior services (37.5%). Single-family, two-family, multifamily, and accessory dwelling units were recognized as affordable housing options. The survey found the need for housing rehabilitation and redevelopment programs as well as services for the elderly, homeless, and special needs populations. Respondents were not in favor of mobile home park development or expansion.

The top priority services or initiatives in the next 20 years was encouraging builders, developers, and property owners to provide rental and homeownership options, followed by providing safer alternative transportation, developing existing vacant and underused properties, improving the County's visual appeal, developing and passing a property maintenance code, and providing property improvement assistance. Respondents also desire a central referral line for County services and programs.

Gloucester County Provider Survey

1. Gloucester County Service Provider:

This survey is being conducted to gather information for the updating of the Gloucester County Comprehensive Plan, specifically the chapter on housing and housing needs. The Comprehensive Plan is a document that helps guide the County as it faces the challenges of planning for public and private development in Gloucester County. While the County has done several other surveys regarding the general direction for the Comprehensive Plan, we are seeking more guidance regarding housing needs within our community. We are hoping that people in the various agencies and non-profit groups which provide services to individuals that we may not have reached through our previous efforts may be able to provide additional insight regarding some of the housing issues facing our community.

As a resource provider serving the needs of Gloucester County citizens, we welcome your opinions on the housing needs in Gloucester and the role of the County regarding these needs. We ask that you please take a few moments to complete this survey to the best of your knowledge and ability. Your responses will help us to identify needs in the community and formulate recommendations for how those needs can effectively be addressed. Thank you.

**What best describes your organization or role as it relates to Gloucester County?
(Check all that apply)**

- ☐ Gloucester County Resident
- ☐ Volunteer
- ☐ Advocate
- ☐ Non-Profit
- ☐ Non-Profit/Housing
- ☐ Local Government
- ☐ State Government
- ☐ Private
- ☐ Financial Institution
- ☐ Faith Based

2. What area does your organization serve? (Check all that apply)

- ☐ Gloucester County
- ☐ Mathews County

- ☐ Middlesex County
- ☐ Lancaster County
- ☐ Northumberland County
- ☐ Other (please specify)

3. What is the primary function of your organization?

- ☐ Planning and Community Development
- ☐ Lending or Real Estate Services
- ☐ Affordable housing development or operation
- ☐ Foreclosure/Default Counseling
- ☐ Financial and Credit Counseling
- ☐ Advocate for Persons with Disabilities
- ☐ Senior Housing Developer or Service Provider
- ☐ Homeless Service and/or Shelter Provider
- ☐ Home improvement or weatherization
- ☐ Housing-related services
- ☐ Emergency assistance (food, shelter, clothing)
- ☐ Supportive services (non-emergency assistance)
- ☐ Other (please specify)



Next

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Gloucester County Provider Survey

4. What would you say is the most critical issue in housing facing Gloucester County?

	Very Critical	Critical	Exists but not a critical issue	Not an issue	No Opinion
Foreclosure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Affordable Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subsidies to support homeownership (down payment, closing cost assistance, tax credits)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunities and programs for persons with disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Literacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job layoffs and unemployment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Homelessness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor Housing Conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

5. Which services and housing, if any, do you believe are missing or most needed in Gloucester County? (Check all that apply)

- ☐ Affordable housing to buy
- ☐ Affordable housing to rent
- ☐ Services for low income residents
- ☐ Services for person with disabilities
- ☐ Senior services
- ☐ None
- ☐ Other (please specify)

29%

Prev

Next

Gloucester County Provider Survey

6. Within the area of housing, please give us your opinion of the necessity of the following in Gloucester County:

	Needed	Not Needed	No Opinion
Development of more housing options, specifically in the rental market (Apartments, Duplexes, Condos, Townhomes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Permitting accessory (garage) apartments or cottages to be available for rent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construction of new, affordable homeownership opportunities (Single family, Duplexes, Condos, Townhomes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private Rehabilitation/Redevelopment of existing rental properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Programs to address rehabilitation of existing single family homes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Programs to address or encourage rehabilitation of existing multi-family rental properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintain existing mobile home parks as affordable housing options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allow for the development or expansion mobile home parks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of housing for the elderly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of housing options for the homeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of special needs housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Gloucester County Provider Survey

7. Which of the following services or initiatives should be a priority for Gloucester County to support over the next 20 years?

	High Priority	Low Priority	Not Necessary	No Opinion
Providing property owners with advice and assistance to improve their properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing and passing a property maintenance code to allow the County to require property owners to maintain their properties to standards above mere health, welfare and safety considerations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging builders, developers and property owners to provide to a range of housing options for both rental and home ownership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging development of existing vacant or under used properties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making Gloucester County a more attractive place to live	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing a safer environment for non-drivers to get from their homes to services and stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Gloucester County Provider Survey

8. Please answer the following:

	Yes	No	Not Sure
As a resident or a provider, do you know whom to contact when you're in need of assistance with community services or housing issues?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do your clients know whom to contact when they're in need of assistance with community services or housing issues?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would a central referral line for county services and programs be helpful in meeting the needs of the community? Is there sufficient housing available for retired persons and the elderly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is there sufficient housing available for persons with disabilities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are there adequate shelters and support service available for the homeless populations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are homes in your neighborhood or the neighborhoods you serve well maintained and attractive?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are housing options available for all			

members of the community, including low and moderate income families, younger couples, and singles?

☐

☐

☐

Are housing rehabilitation programs needed?

☐

☐

☐

Is the availability of public water and sewer a hindrance to developing new housing in the community?

☐

☐

☐

Are you aware of any zoning or land use laws in Gloucester County that create barriers to housing choices?

☐

☐

☐

71%

Prev

Next

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Gloucester County Provider Survey

9. Gloucester County Residents Only!

As it relates to increasing housing services in Gloucester County, how should these services be funded?

- ☐ Through increased taxes
- ☐ By diverting funds from other County programs
- ☐ No funding; establishing County-administered housing programs is not worth a tax increase or a reduction in other services
- ☐ Housing programs and services are not needed in Gloucester County
- ☐ Housing programs and services are not a County function

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Gloucester County Provider Survey

10. When answering the questions on this survey, which of the following did you most often rely on:

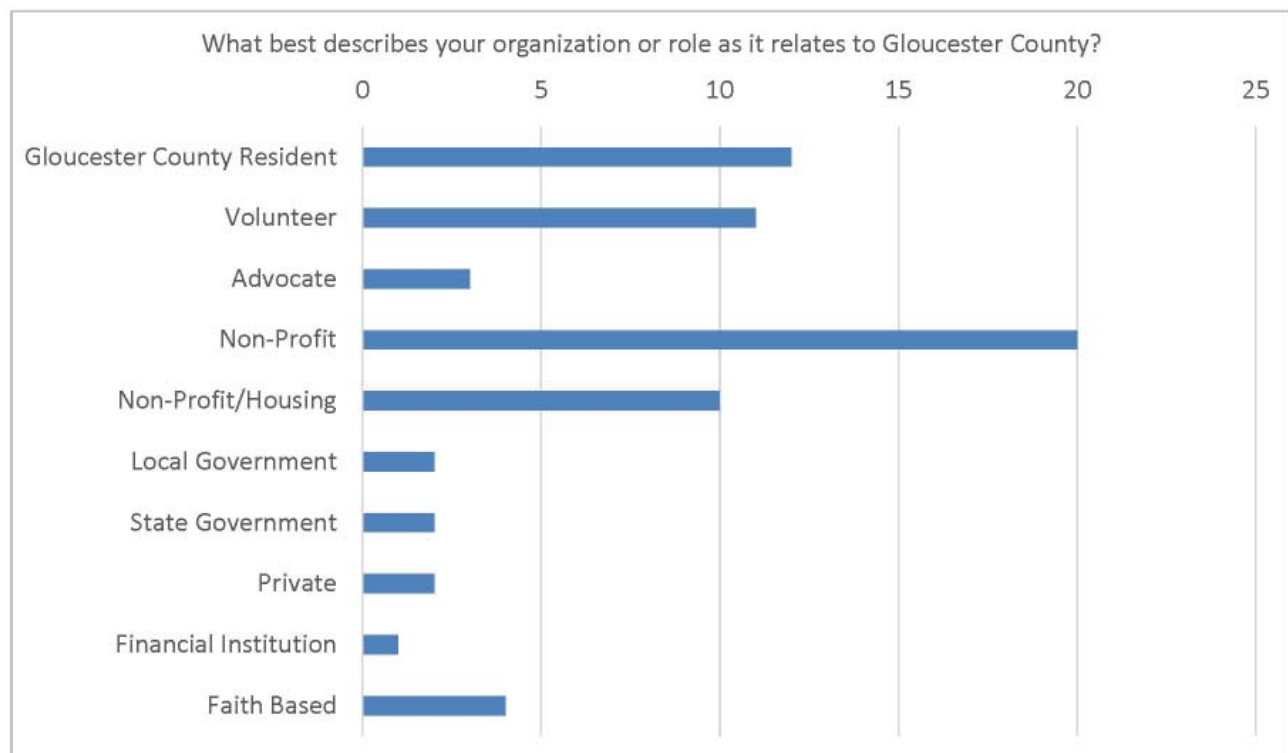
- ☐ Statistical data
- ☐ Personal experience
- ☐ Anecdotal information
- ☐ Media
- ☐ Personal impression
- ☐ Other

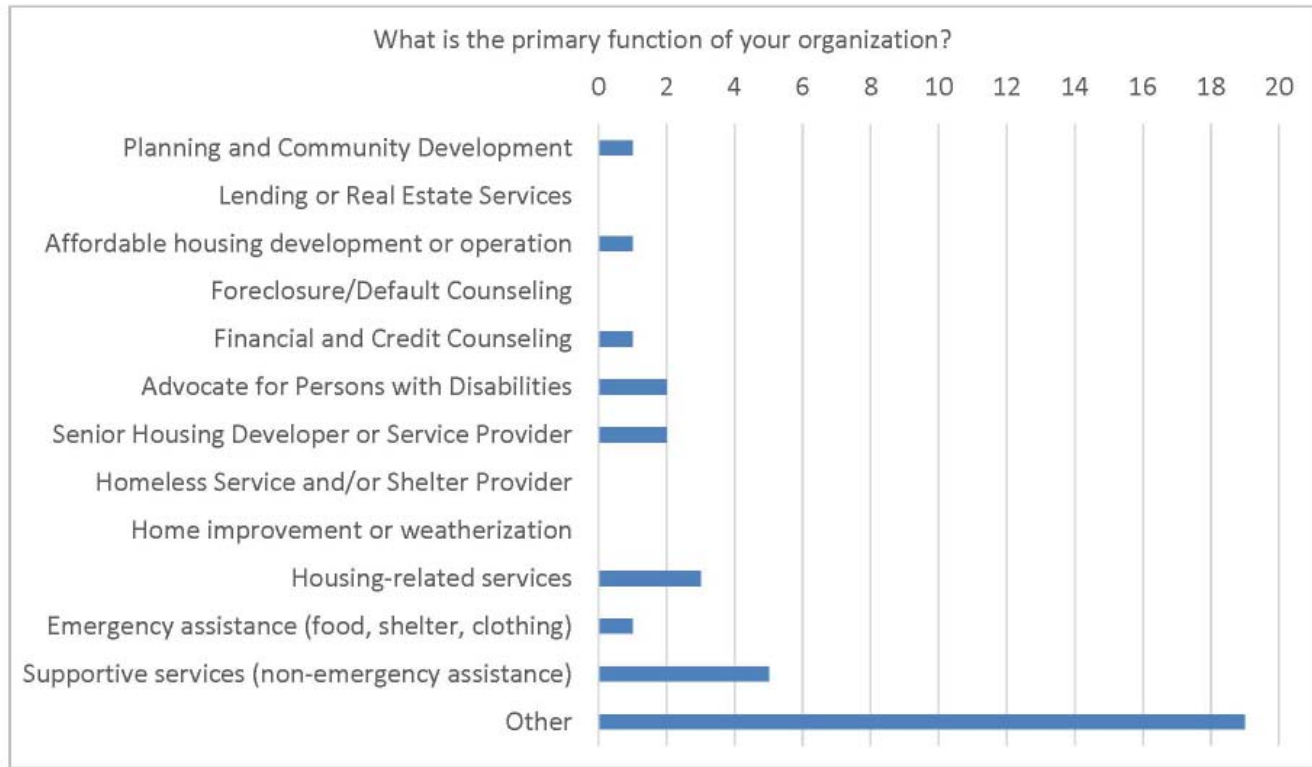
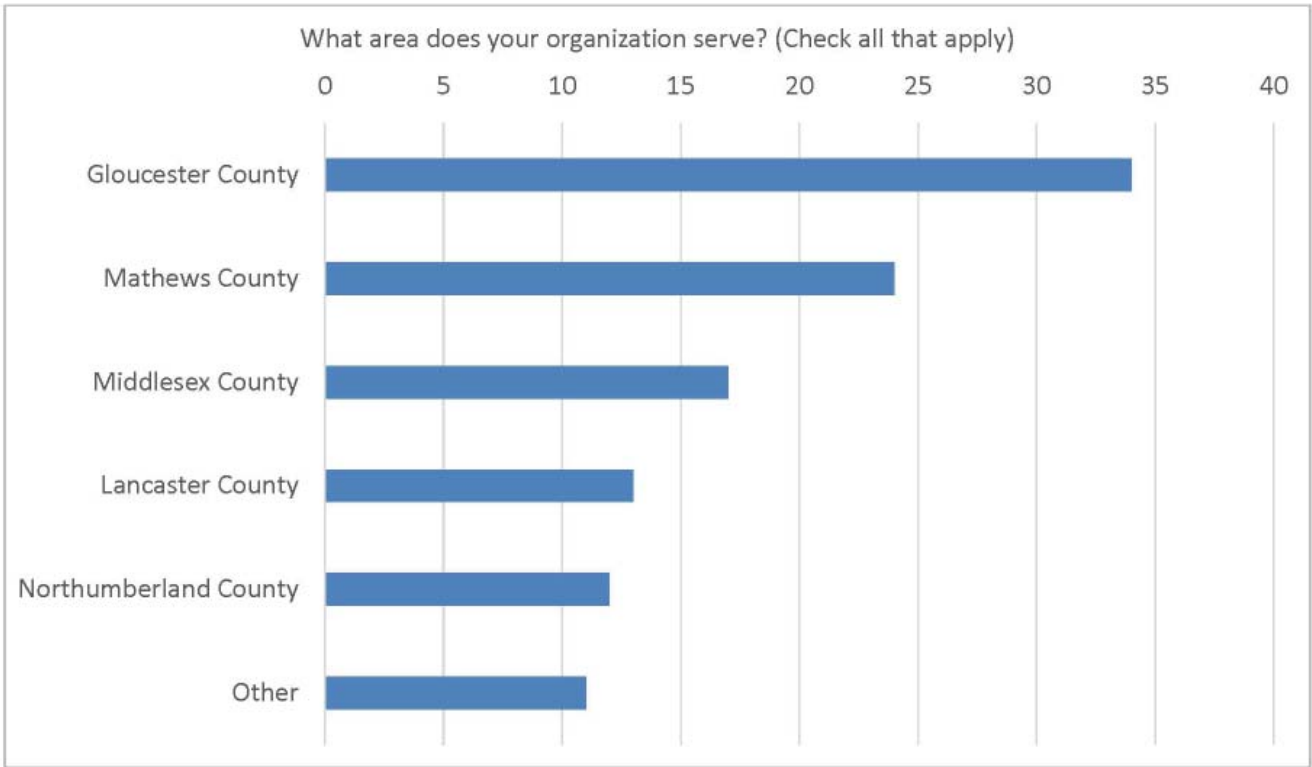


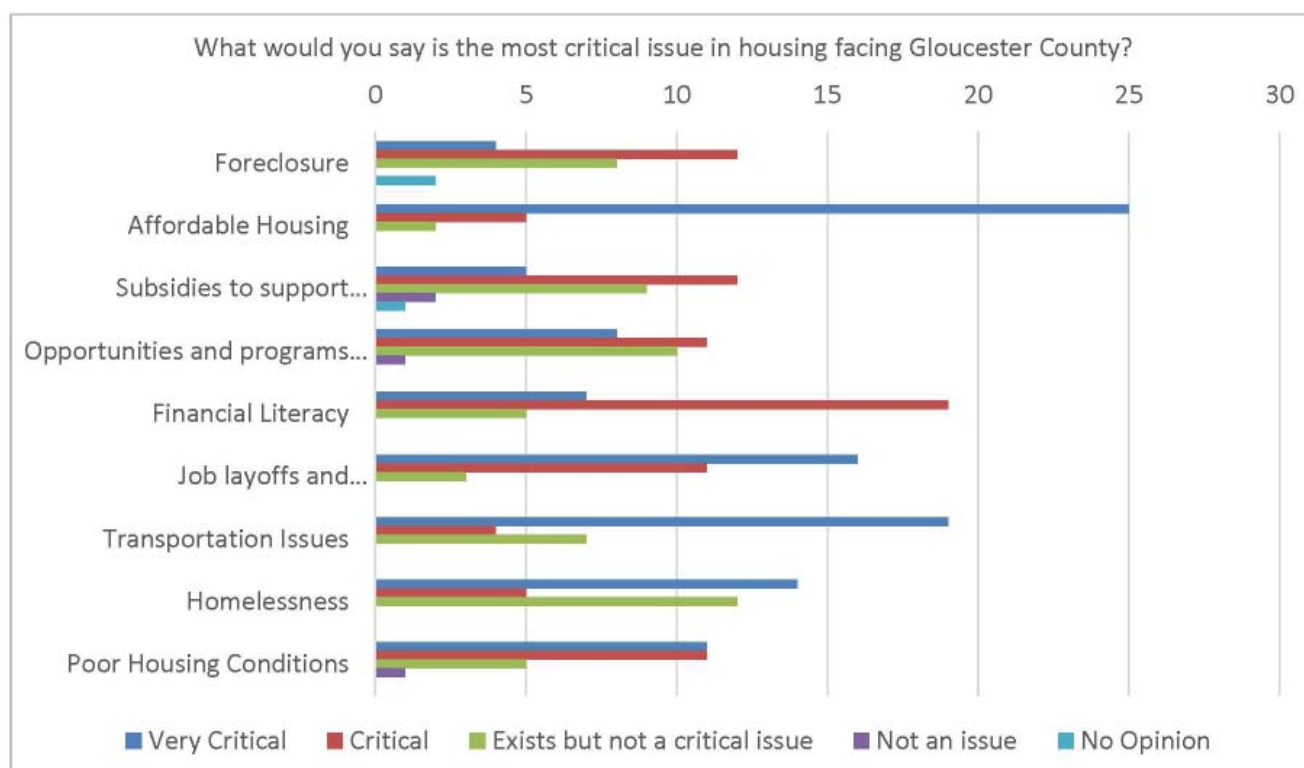
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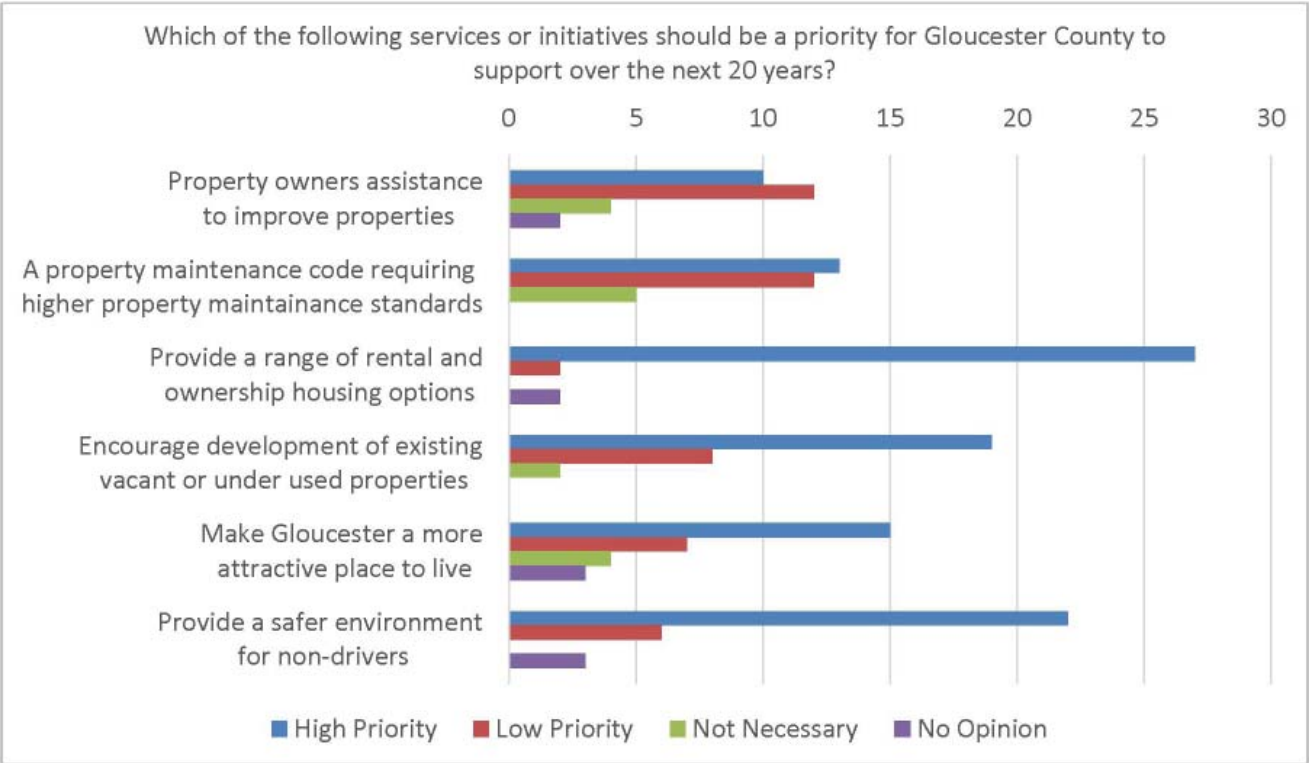
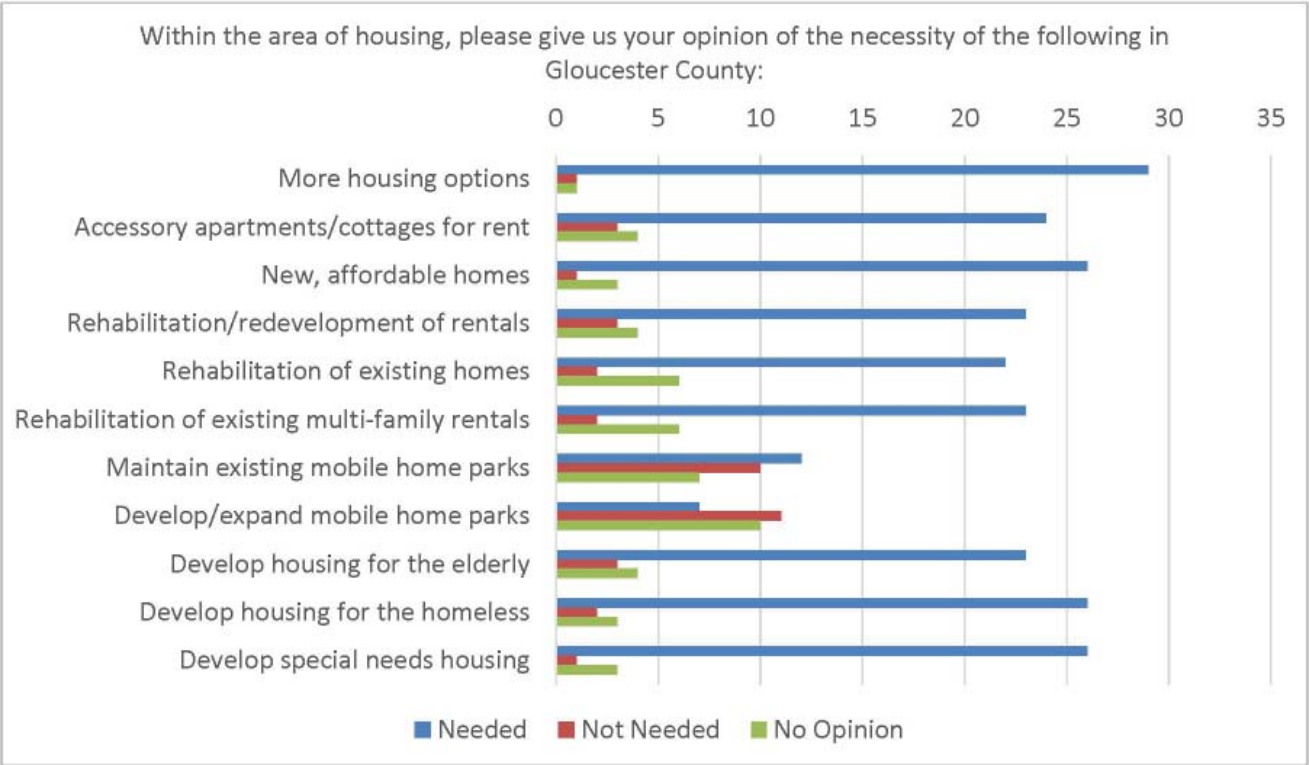
Done

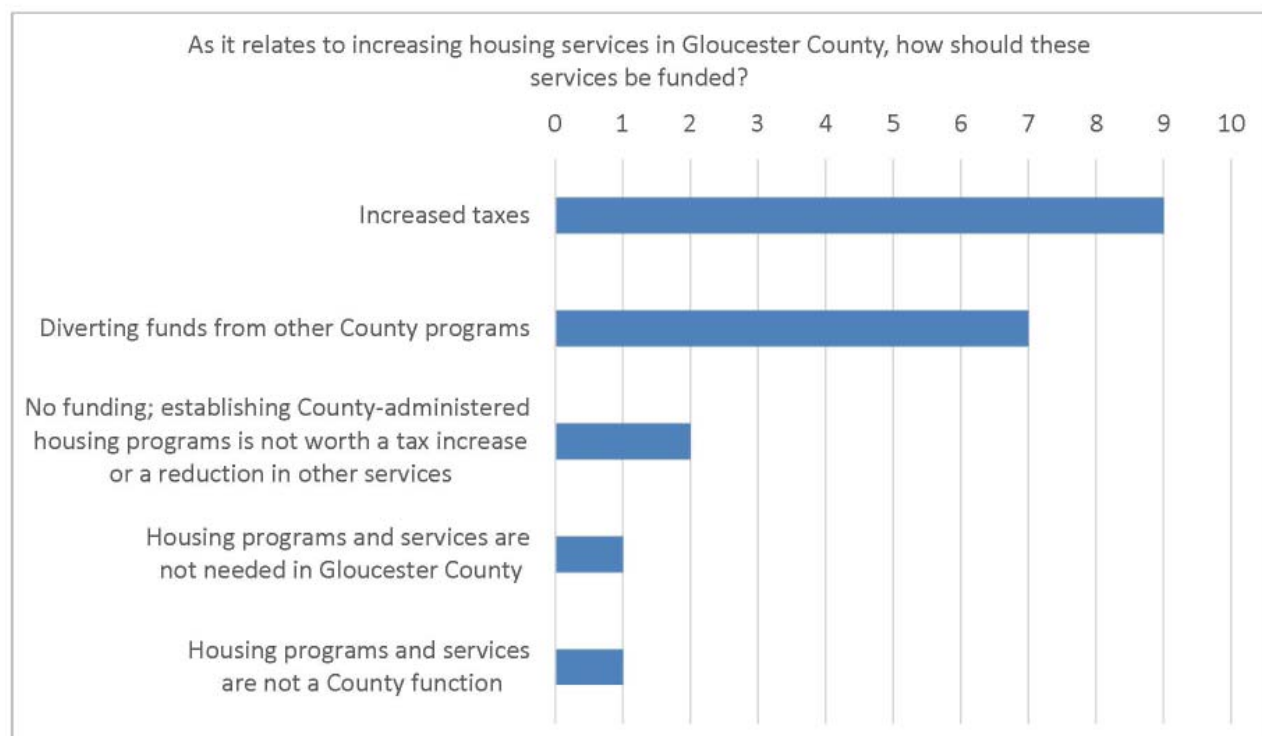
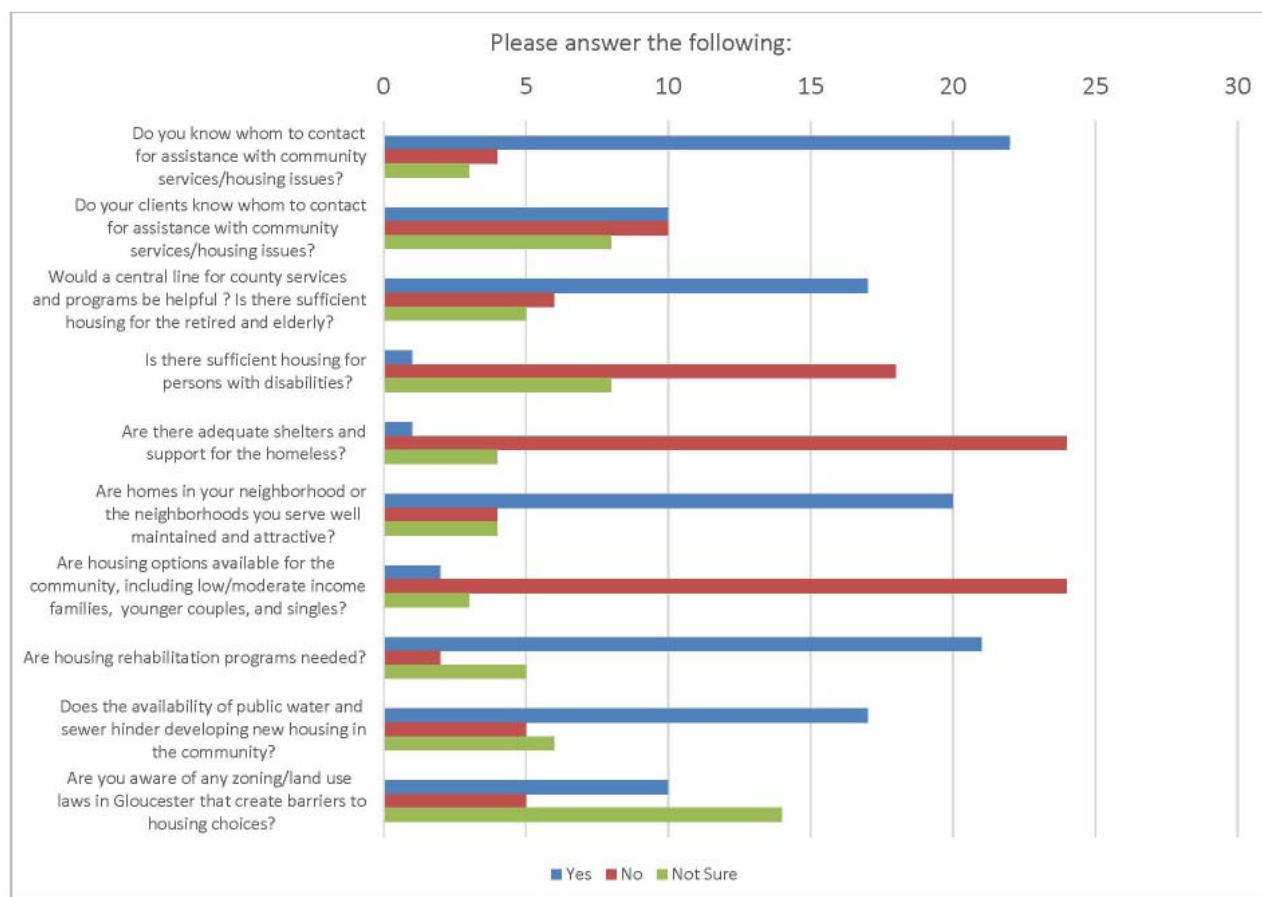
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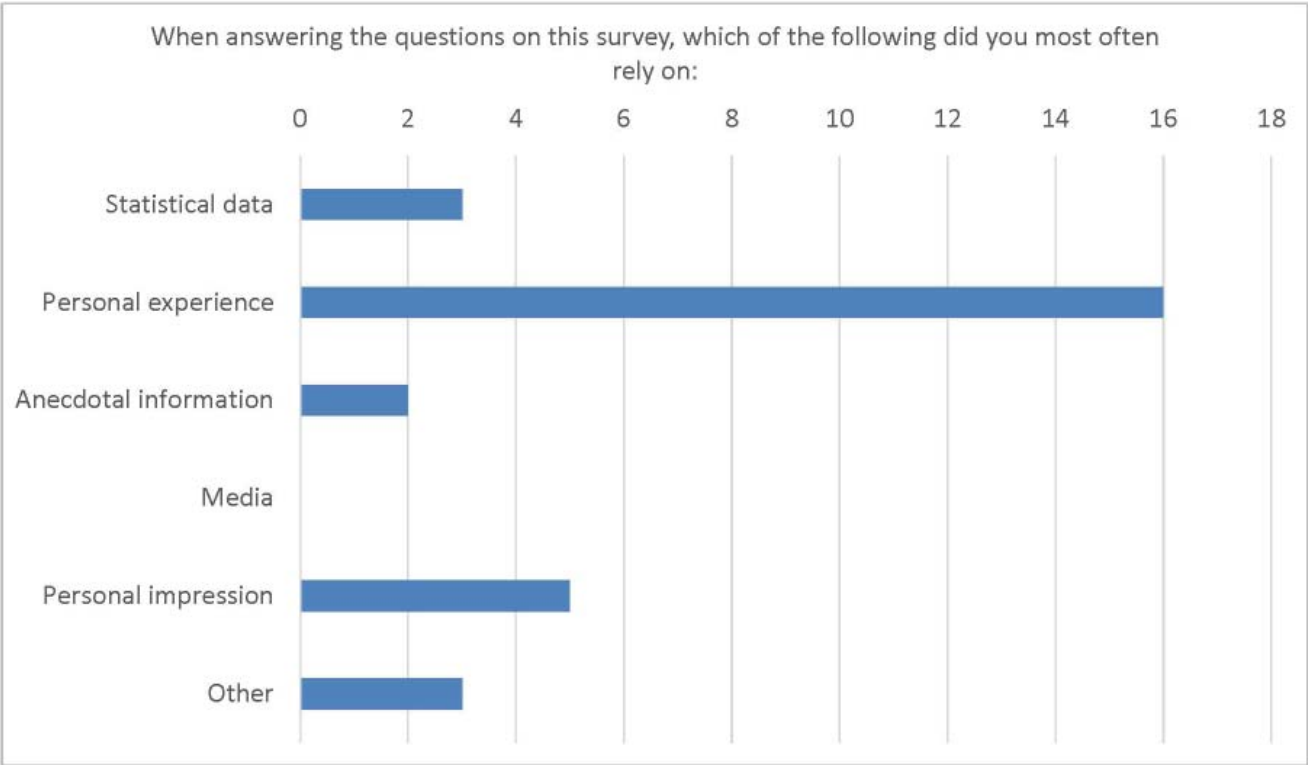












Appendix I

2007 Affordable Housing Needs Assessment Recommendations

Report Recommendations	
1. Implement Recommendations of the Report	
2. Change Public Perception	
3. Improve the Quality of the Housing Stock	
• Reinforce neighborhood sustainability through an expanded code enforcement program	
• Implement a Rehab/Infill Strategy	
4. Revise Land Use Policies	
• Increase the amount of land zoned for multi-family housing	
• Treat garage apartments and cottage-type dwelling units as permitted uses within residential districts	
• Adopt quality design and development standards for new multi-family housing	
• Treat non-profit organizations that specialize in workforce and affordable housing as a special class of developer	
• Streamline the review and approval process	
• Establish on-going dialogue between County Planning officials and developers	
• Increase standards for residential growth outside of the Development District	
• Adopt local legislation aimed at increasing the supply of workforce and affordable housing	
5. Establish an Affordable Housing Trust Fund	
• Implement a three-tiered approach towards an overall trust fund strategy	
• Financial leveraging strategy	
• Management strategy	
• Implementation strategy	

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Appendix J

2022 Public Service Corporations and Public Utilities

Virginia State Code details uses defined as “public service corporations” and “public utilities” in Sections 56-1 and 56-265.1, respectively. Generally, these uses include utilities supplying electric power, natural gas, geothermal power, telephone services, water service, sewer service, and common carriers that transport passengers or property, which can be owned or operated by a public, private, or nonprofit entity. Furthermore, state code details numerous instances where these uses are exempt from being defined as a “public service corporation” or “public utility”, as specified in the aforementioned state code sections.

Furthermore, Section 15.2-2232 of the Code of Virginia requires the Planning Commission to review public service corporations and public utilities for being “substantially in accord with the adopted comprehensive plan.” When the Commission performs this review, they are to consider the “general or approximate location, character and extent” of the feature under review. Similar to the state code sections defining these uses, Section 15.2-2232 details certain exceptions, establishing circumstances where a use shall automatically be deemed to be “substantially in accord with the comprehensive plan”, primarily for by right telecommunications facilities and select solar energy facilities, and, therefore, these uses do not require review by the Planning Commission.

History and Background

Solar Energy Facilities

In 2015, in response to statewide initiatives announced by Virginia’s governor, staff from the Department of Planning and Zoning began receiving an increase in inquiries regarding the ability to develop solar facilities within the County. As a result, the Planning Commission and Board of Supervisors directed staff to study permitting solar development within the County and the Board subsequently amended the County Code to permit solar facilities within the County, including utility-scale solar energy facilities by right in the RC-1 (Rural Countryside) district and by Conditional Use Permit (CUP) in all other districts, along with adopting supplemental regulations for solar uses at various scales. Based on experiences from solar development within the County and in other localities around the state, the Board revisited these regulations in 2017 to revise the requirements regarding decommissioning plans and their associated sureties and in 2020 to require a CUP for utility-scale solar energy facilities in all zoning districts, including the RC-1 district, along



Gloucester Solar Electric Power Plant - Located off Rte. 14, the first Board approved utility-scale solar energy facility within the County.

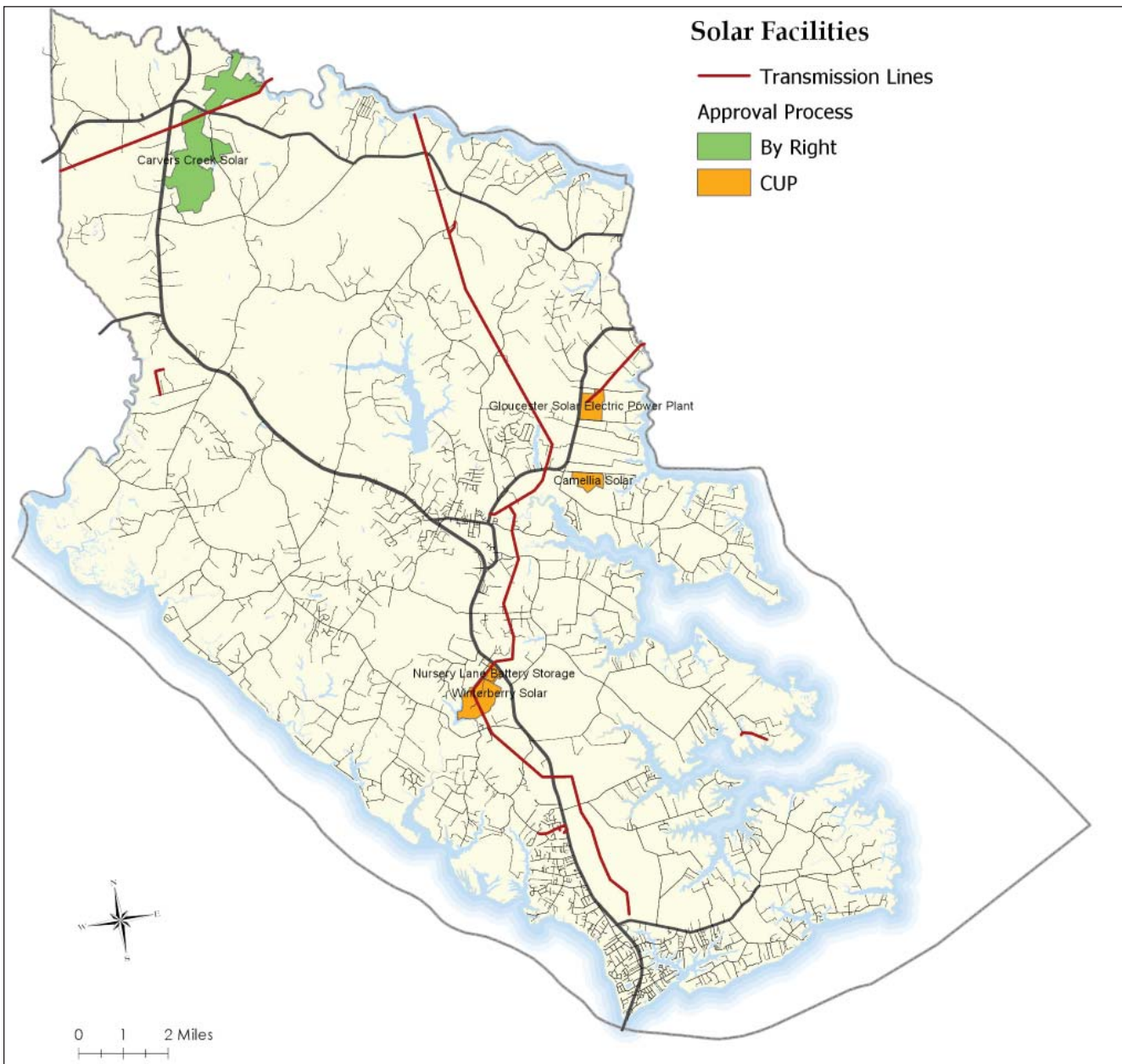


Aerial during construction of Gloucester Solar Electric Power Plant - Located off Rte. 14, the first Board approved utility-scale solar energy facility within the County. Source: SUKUT Construction.

with further revisions to the supplemental regulations for these uses. In 2021, after community opposition to the growing number of utility-scale solar energy facilities in the County, the Board adopted further revisions to these regulations, aligning the scales of solar development with state code and industry practices, limiting the location of solar energy facilities exceeding 25 kilowatts (kW) of electrical power, limiting the percentage of land area within the SC-1 (Suburban Countryside) and RC-1 districts that can be developed by solar facilities to two percent total land area, and further revising the supplemental regulations for these uses at all scales.

Since the Board adopted a solar ordinance in 2015, a number of applications have been reviewed by the Planning Commission and subsequently approved by the Board of Supervisors. In 2017, the Board approved the first utility-scale solar energy facility within the County, the Gloucester Solar Electric Power Plant, through the CUP process. In 2020, two additional utility-scale solar energy facilities were approved by the Board through the CUP process, the Winterberry Solar and Cow Creek Solar Facilities. In addition, the Carver's Creek Solar Facility, another utility-scale solar energy facility, was permitted as a by right use at the time of preliminary site plan approval in 2020 and, therefore, did not require review by the Planning Commission or Board of Supervisors. In 2021, the Camilla Solar Facility was also approved by the Board through the CUP process. For projects approved through the CUP process, customized conditions of approval were established for each project at the time of CUP approval. These conditions of approval, in addition to the applicable supplementary regulations for utility-scale solar energy facilities that existed at the time of CUP approval, have determined the development standards for

Map AJ-1: Solar & Battery Storage Facility Approvals

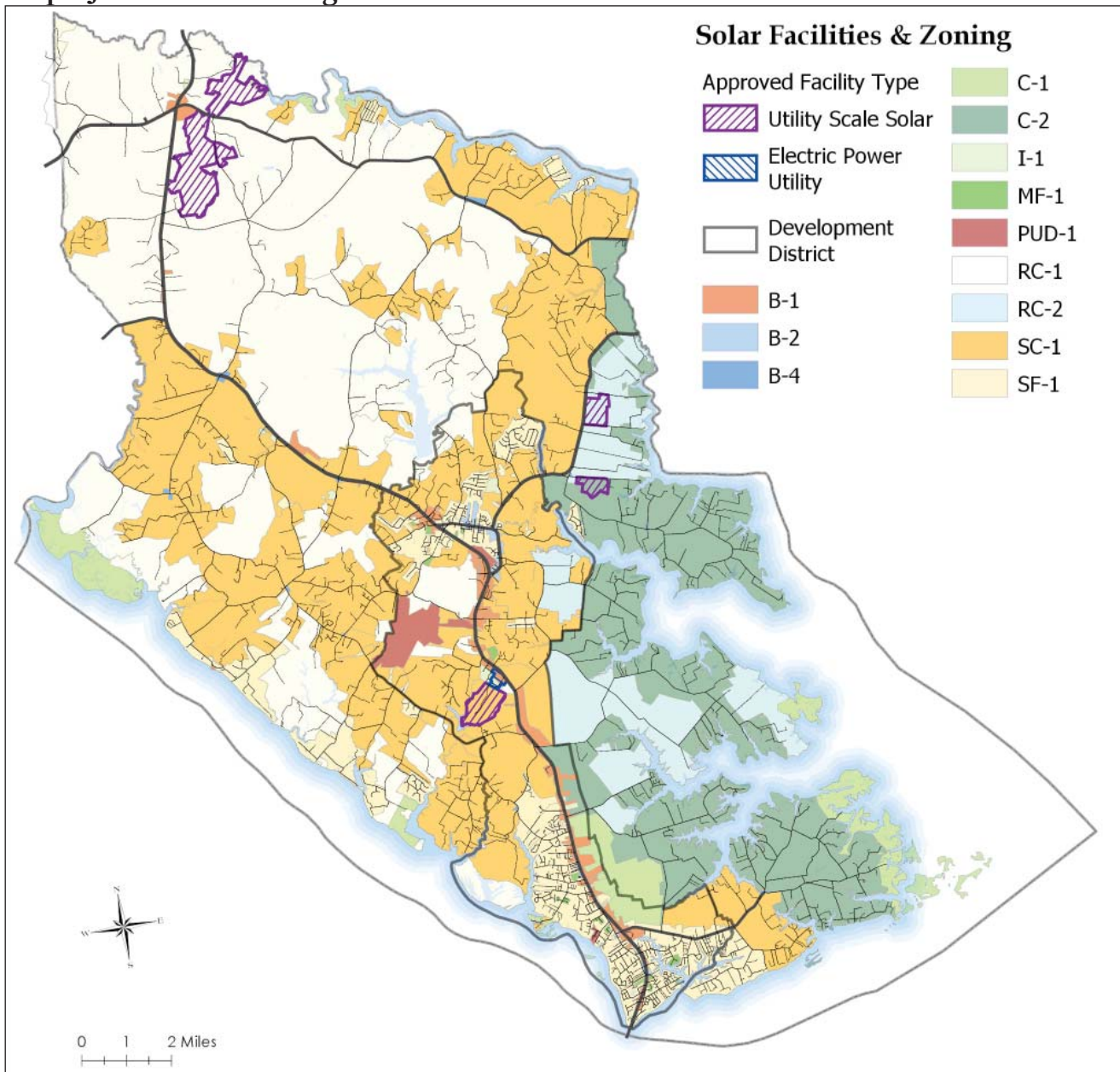


Data Sources: Gloucester County

Four solar facilities and one battery storage facility (classified as an electric power utility) have been approved for development or developed in Gloucester County since these uses were first added to the Zoning Ordinance in 2015 (for solar energy facilities) and 2021 (for electric power utilities). Gloucester Solar Electric Power Plant, Winterberry Solar, and Camellia Solar have been permitted through the Conditional Use Permit (CUP) process while Carvers Creek Solar was permitted as a by-right use. Nursery Lane Battery Storage (an electric power utility) has also been permitted through the CUP process.

Solar facilities are discussed on pages 283-287.

Map AJ-2: Solar & Zoning



Data Source: Gloucester County Planning and Zoning Department

Utility-scale solar facilities were originally permitted by-right in the RC-1 district and by Conditional Use Permit (CUP) in all other districts. However, after community feedback and numerous revisions to the solar ordinance, these facilities (utility-scale and community-scale solar energy facilities) are currently permitted by CUP only in the RC-1 and SC-1 districts with a maximum allowable land area of 2% of total acreage in each of these districts to be utilized by these uses. In addition, electric power utilities are permitted by CUP in all districts.

Solar facilities and zoning are discussed on pages 283-287.

each individual solar energy facility approved through the CUP process within the County to date. Although Carver's Creek Solar Facility did not have additional CUP conditions associated with the project, subsequent final site plan submittals were required to meet the applicable supplementary regulations for utility-scale solar energy facilities that existed at the time of preliminary site plan approval.

Additional small-scale, private solar energy facilities, permitted by right in all zoning districts, have been established within the County as well. These facilities, producing 25 kW or less of electrical power, are typically established as accessory, roof-mounted residential structures or adjacent structures to residences and often solely serve the uses on the lot they are located. As a result, the Board of Supervisors and Planning Commission have not expressed concern regarding these small-scale solar energy facilities and are generally supportive of them. Although the Zoning Ordinance been amended multiple times to address larger facilities, including, but not limited to, utility-scale solar energy facilities, concerns remain for these uses and potential impacts generated by larger facilities in the districts where they are permitted. These concerns are not as focused towards the development standards for these uses, but rather, the guidance from the Comprehensive Plan to be utilized by the Planning Commission and Board of Supervisors when evaluating applications for these uses on a case-by-case basis, especially evaluation of utility-scale solar energy facilities.

Other Utilities

In 2020, due to an inquiry to locate a battery energy storage facility within the County, the Board of Supervisors directed staff to study how to update the Zoning Ordinance to appropriately regulate battery energy storage facilities and other public utilities not previously contemplated as potential uses in the County. In addition, since the Zoning Ordinance classified all utilities (other than solar energy facilities) as "uses required for the provision and maintenance of public utilities", which were not defined in the ordinance and were permitted by right in all districts, all utility uses were included within staff's considerations. In 2021, the Board amended the Zoning Ordinance, defining and regulating electric power utilities and nuclear power utilities as well as clarifying what specific utility uses fall under the definition of "uses required for the provision and maintenance of public utilities".



Example of a battery energy storage facility like that approved by Conditional Use Permit on Nursery Lane adjacent to the Winterberry Solar Facility in 2021.

APPENDIX J

Since the establishment of the “electric power utility” use in the Zoning Ordinance in 2020, the Board has approved one application for this type of use through the CUP process, the Roadview Battery Storage Facility, approved in 2021, which was proposed to be located adjacent to the Winterberry Solar Facility. Similar to the CUP applications approved for solar energy facilities, a unique set of conditions of approval were established for this application, which establish the development standards for this project.

Although the County has addressed how to regulate other utility uses in the Zoning Ordinance, in a similar fashion as solar energy facilities, concern continues to be expressed by the Planning Commission and Board of Supervisors regarding what guidance to use from the Comprehensive Plan to evaluate other utilities, such as battery storage facilities and other, newly emerging utilities.

Section 15.2-2232 Review

As previously discussed, the Code of Virginia Section 15.2-2232, requires the Planning Commission to review public service corporations and public utilities for being “substantially in accord with the adopted comprehensive plan.” Furthermore, when the Commission performs this review, they are to consider the “general or approximate location, character and extent” of the feature under review. Similar to the state code sections defining these uses, Section 15.2-2232 details certain exceptions, establishing circumstances where a use shall automatically be deemed to be “substantially in accord with the comprehensive plan”, primarily for by right telecommunications facilities and select solar energy facilities, and, therefore, these uses do not require review by the Planning Commission.

The Planning Commission has only reviewed one project specifically under Section 15.2-2232 of the Code of Virginia. Although the Gloucester Solar Electric Power Plant was approved as a CUP by the Board of Supervisors in 2017, the Resolution approving this application did not explicitly reference Section 15.2-2232 and, therefore, the applicant for this project requested the Planning Commission review the project to determine it as being “substantially in accord with the adopted comprehensive plan.” As a result, in 2018, the Commission reviewed

§ 15.2-2232. Legal status of plan.

“Whenever a local planning commission recommends a comprehensive plan or part thereof for the locality and such plan has been approved and adopted by the governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. Thereafter, unless a feature is already shown on the adopted master plan or part thereof or is deemed so under subsection D, no street or connection to an existing street, park or other public area, public building or public structure, public utility facility or public service corporation facility other than a railroad facility or an underground natural gas or underground electric distribution facility of a public utility as defined in subdivision (b) of § 56-265.1 within its certificated service territory, whether publicly or privately owned, shall be constructed, established or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the commission as being substantially in accord with the adopted comprehensive plan or part thereof.”

the Gloucester Solar Electric Power Plant and determined that the “general location or approximate location, character, and extent of the Solar Facility is substantially in accord with the Gloucester County Comprehensive Plan.”

Resolutions approving solar energy and battery storage facilities submitted subsequent to the Gloucester Solar Electric Power Plant have contained language reflecting Section 15.2-2232 to confirm substantially in accord with the adopted comprehensive plan during the Planning Commission’s review of the CUP application. In addition, since the Carver’s Creek Solar Facility was permitted as a by right project at the time of preliminary site plan approval, it was determined that this project was substantially in accord with the adopted comprehensive plan as a result of its by right zoning status, which had been recently adopted by the Board of Supervisors. Therefore, the Planning Commission has not been approached by any additional solar energy facility developers or other utility providers seeking a determination of substantially in accord with the adopted comprehensive plan for projects not associated with CUP applications since 2018. However, based upon the Commission’s experience reviewing solar energy and battery storage facilities for substantially in accord with the adopted comprehensive plan, the Commission has continued to express concern regarding the limited guidance the Comprehensive Plan has to offer for the Planning Commission’s mandated review under Section 15.2-2232 of the Code of Virginia.

Comprehensive Plan Criteria

In 2021, due to the ongoing concern regarding the limited guidance the Comprehensive Plan offers for the various uses classified as “public service corporations” or “public “utilities”, the Planning Commission requested that staff develop criteria for these uses to assist the Commission during future reviews in accordance with Section 15.2-2232 of the Code of Virginia. After reviewing the relevant state code sections along with the 2016 Comprehensive Plan, staff determined what uses were classified as “public service corporations” or “public utilities” and which of these uses were not already addressed in other chapters of the Comprehensive Plan, including the Transportation and Community Facilities chapters (Chapters 5 and 6, respectively). At a Joint Meeting between the Board of Supervisors and Planning Commission, the Gloucester County Attorney recommended a Vision Statement for how these uses should generally be located, which was supported by the Planning Commission and the Board of Supervisors. At subsequent Planning Commission meetings, County staff and the Planning Commission developed criteria based upon the zoning and/or future land use classification these uses may be proposed to be located within, general criteria for all uses classified as “public service corporations” or “public utilities”, and specific criteria for certain uses where greater concern exists. The Board of Supervisors adopted this appendix as Appendix J of the Comprehensive Plan (2022 Public Service Corporations and Public Utilities Amendment) at their September 6, 2022 meeting. During the adoption process, the Board removed the Vision Statement originally recommended by the County Attorney since the uses reviewed under the adopted criteria should also be “substantially in accord with” the Comprehensive Plan’s Vision Statement and Board of Supervisor’s Vision Statement for 2035, both included in the Introduction of the Comprehensive Plan (Chapter 1).

These criteria have been developed to provide the Commission with appropriate guidance to assess the “general or approximate location, character and extent” of a use under review as they seek to determine whether this use is “substantially in accord with the adopted comprehensive plan.” In addition, the criteria were prepared with the ability for the Planning Commission to use them at their discretion, recognizing that certain uses may not neatly fit within the criteria but may still be appropriate for the proposed location or application if multiple criteria may conflict for uses with unique characteristics and, therefore, flexibility in applying the criteria would be necessary to determine whether these uses are “substantially in accord with the adopted comprehensive plan.”

Zoning District/Future Land Use Types

The Planning Commission may utilize the following zoning district and future land use type recommendations at their discretion when evaluating all public service corporations and public utilities for substantially in accord or consistency with the Comprehensive Plan.

1. Agricultural
 - a. Public service corporations/public utilities should be evaluated for appropriateness on a case-by-case basis in agriculturally zoned areas based upon the location, extent, and character and any applicable criteria detailed in the Comprehensive Plan.
 - b. When public service corporations/public utilities are proposed in agricultural districts, special consideration shall be given to the location of these uses relative to wetlands, prime farmland, forestland, natural heritage sites, and other natural areas.
2. Residential
 - a. Public service corporations/public utilities are generally not appropriate in residential districts unless the use directly serves other uses in the district, specifically (but not exclusively), the residential uses.
 - b. When public service corporations/public utilities are proposed in residential districts, the PC's review of public service corporations/public utilities will be reviewed based upon the location, extent, and character and any applicable criteria detailed in the Comprehensive Plan.
 - c. When public service corporations/public utilities are proposed in residential districts, special consideration shall be given to the location of these uses relative to areas containing parks, schools, other public facilities/amenities, and natural heritage sites.
3. Multifamily
 - a. Public service corporations/public utilities are generally not appropriate in multifamily districts unless the use directly serves other uses in the district, specifically (but not exclusively), the multifamily residential uses.
 - b. When public service corporations/public utilities are proposed in multifamily districts, the PC's review of public service corporations/public utilities will be reviewed based upon the location, extent, and character and any applicable criteria detailed in the Comprehensive Plan.
 - c. When public service corporations/public utilities are proposed in multifamily districts, special consideration shall be given to the location of these uses relative to areas containing higher density housing (greater than 4 units per acre), parks, schools, and other public facilities/amenities, and natural heritage sites.
4. Conservation
 - a. Public service corporations/public utilities are generally not appropriate in conservation districts unless the use directly serves another use in the district.
 - b. When public service corporations/public utilities are proposed in conservation districts, the PC's review of public service corporations/public utilities will be reviewed based upon the location, extent, and character and any applicable criteria detailed in the Comprehensive Plan.
 - c. When public service corporations/public utilities are proposed in conservation districts, special consideration shall be given to the location of these uses relative to wetlands, prime farmland, forestland, natural heritage sites, and other natural areas.
5. Business/Mixed Use
 - a. Public service corporations/public utilities are generally appropriate in **business zoned areas along Route 17** as long as the location, extent, and character are not inconsistent with other criteria detailed in the Comprehensive Plan.
 - b. Public service corporations/public utilities should be evaluated for appropriateness on a case-by-case basis in **business zoned areas not along Route 17** based upon the location, extent, and character and

- any applicable criteria detailed in the Comprehensive Plan.
- c. Public service corporations/public utilities should be evaluated for appropriateness on a case-by-case basis in **mixed-use zoned areas** based upon the location, extent, and character and any applicable criteria detailed in the Comprehensive Plan.
6. Industrial
 - a. Public service corporations/public utilities are generally appropriate in industrially zoned areas as long as the location, extent, and character are not inconsistent with other criteria detailed in the Comprehensive Plan.
 7. PUD
 - a. If specific public service corporations/public utilities are proposed in PUD districts, these uses should be clearly listed in the PUD ordinance.
 - b. In PUD districts where public service corporations/public utilities are not clearly listed as permitted uses in PUD districts (but not expressly prohibited by the district), the PC's review of public service corporations/public utilities will be reviewed based upon guidance for other types of districts (residential, business, etc.) and specific guidance (distance, location, etc.) provided within the Comprehensive Plan.
 - c. When public service corporations/public utilities are proposed in PUD's, special consideration shall be given to the location of these uses relative to areas containing higher density housing (greater than 4 units per acre), parks, schools, other public facilities/amenities, and natural heritage sites.

General Criteria for All Uses

The Planning Commission may utilize the following criteria at their discretion when evaluating all public service corporations and public utilities for substantially in accord or consistency with the Comprehensive Plan.

1. When siting public service corporations or public utilities within Gloucester County, these uses **should**:
 - a. Be located within 1 mile of the uses they directly serve or facilities they are required to directly connect to as part of their regular operations.
 - b. Encourage utility provision to the maximum number of users possible where utility expansion does not conflict with other general or specific criteria for the utility or the district in which it is located.
 - c. Be located outside of wetlands, RPA features, and 100-foot RPA buffers.
 - d. Consider the location, extent, and character of the development when located in proximity to residential, recreational, educational, and other facilities for human use.
 - e. Preserve the rural character unless proposed in conjunction with a larger development.
 - f. Avoid dam break inundation zones.
2. When siting public service corporations or public utilities within Gloucester County, these uses **should not negatively impact**:
 - a. County roadways
 - b. Cultural and historic resources
 - c. Visual resources
 - d. Surface water or ground water resources
 - e. Natural heritage sites, endangered species, and wildlife corridors

Criteria for Specific Uses

The Planning Commission may utilize the following criteria at their discretion when evaluating specific public service corporations and public utilities (where applicable) for substantially in accord or consistency with the

APPENDIX J

Comprehensive Plan.

1. Electric Utilities (including heat and light companies)
 - a. Electric utilities, including those providing heating and lighting services, **should not:**
 - i. Pose a danger to residents or visitors due to hazards resulting from fire at the facility beyond that typically experienced by other uses within the district.
 - ii. Have significant impacts on the quantity of vehicles on or quality of traffic flow through roadways within the County as a result of service vehicles entering and/or exiting maintenance office sites.
 1. Solar Facilities
 - a. Solar facilities **should not:**
 - i. Be developed on areas containing slopes of 15% grade or greater.
2. Natural/Manufactured Gas
 - a. Natural and manufactured gas utilities **should not:**
 - i. Pose a danger to residents or visitors due to hazards resulting from fire at the facility beyond that typically experienced by other uses within the district.
3. Geothermal Energy
 - a. Geothermal energy utilities **should not:**
 - i. Pose a danger to residents or visitors due to hazards resulting from fire at the facility beyond that typically experienced by other uses within the district.
4. Telephone Services
 - a. Telephone utilities, including wireless communication facilities and internet services, **should not:**
 - i. Have significant impacts on the quantity of vehicles on or quality of traffic flow through roadways within the County as a result of service vehicles entering and/or exiting maintenance office sites.
5. Sewer Service Facilities
 - a. Sewerage utilities **should:**
 - i. Encourage public sewer expansion primarily within the County's Development District unless development necessitating expansion outside of the Development District demonstrates the ability for the public sewer system and other public facilities and services to accommodate this expansion.
6. Water Service Facilities
 - a. Water utilities **should:**
 - i. Encourage public water expansion primarily within the County's Development District unless development necessitating expansion outside of the Development District demonstrates the ability for the public water system and other public facilities and services to accommodate this expansion.
7. Common Carries (transporting passengers or property)
 - a. Common carrier utilities **should not:**
 - i. Have significant impacts to the quantity of vehicles on or quality of traffic flow through roadways within the County.

Chapter 8.5 FLOODPLAIN MANAGEMENT¹

ARTICLE I. IN GENERAL

Sec. 8.5-1. Title.

This chapter shall be known and may be cited as the Floodplain Management Ordinance of Gloucester County, Virginia.

(Ord. of 7-7-87, § 1-1; Ord. of 8-3-2010)

Sec. 8.5-2. Definitions.

For the purposes of this chapter:

Accessory structure means a structure situated on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure. Accessory structures are defined as being not larger than 600 square feet in flood zones AE, A and AO. Within Coastal A and V Zones, accessory structures are defined as being not larger than 100 square feet.

Agricultural structure means any structure used exclusively for agricultural purposes or in connection with the production, harvesting, storage, raising, or drying of agricultural commodities and livestock.

Area of special flood hazard means land in the community floodplain subject to a one (1) percent or greater chance of flooding in any given year. The area may be designated as Zone A, AE, AO, Coastal A, V, or VE on the official Flood Insurance Rate Map (FIRM) for Gloucester County and defined as follows:

1. *A Zone* means those areas subject to inundation by the one percent annual chance flood event which were determined using approximate methodologies and for which no detailed flood profile and no detailed flood elevations exist. For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the U.S. Army Corps of Engineers Floodplain Information Reports, U.S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this base flood elevation.
2. *AE Zone* means areas subject to inundation by the 1 percent annual chance flood event determined by detailed methods. Base Flood Elevations (BFE) are identified on the FIRM.

¹Editor's note(s)—An ordinance adopted July 7, 1987, amended the Code by adding provisions designated as ch. 8.5 by the editor. Titles and classification of articles and sections herein have also been designated by the editor, as authorized by the ordinance.

Cross reference(s)—Erosion and sediment control, ch. 7.5; drainage and flood control in subdivisions, § 15-13; site plans, ch. 15.5; wetlands zoning, ch. 20; zoning, app. B.

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3. *AO Zone* means an area of shallow flooding with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
 4. *Coastal A Zone* means flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet, and identified on the FIRM as areas seaward of the Limit of Moderate Wave Action (LiMWA).
 5. *V or VE Zone* means those areas that are known as Coastal High Hazard areas, extending from offshore to the inland limit of a primary frontal dune along an open coast subject to high velocity wave action 3 feet or greater.

Base flood means the flood elevation having a one percent chance of being equaled or exceeded in any given year (formerly known as the one hundred-year flood).

Base flood elevation (BFE) means the water surface elevation of the base flood, that is, the flood level that has a one percent chance of occurrence in any given year as specified on the community's Flood Insurance Rate Map.

Basement means any area of a building having its floor subgrade (below ground level) on all sides.

Board of building code appeals means the board appointed to review appeals made by individuals with regard to decisions of the floodplain administrator in the interpretation of this chapter, as defined by section 5-35, et seq., of this Code.

Breakaway wall means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

Buffer modification means an approved reduction of the one-hundred-foot resource protection area buffer as defined by section 5.5-3 of this Code.

Coastal high hazard area means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

Critical facility means those structures or facilities which produce, use or store highly volatile, flammable, explosive, toxic and/or water-reactive materials; hospitals, nursing homes and housing which are likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a flood event; police stations, vehicle and equipment storage facilities and emergency operations centers which are needed for flood response activities before, during and after a flood event; and public and private utility facilities which are vital to maintaining or restoring normal services to flooded areas before, during and after a flood event. Structures used solely for private residential purposes are excluded from this definition.

Development means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations or storage of equipment or materials.

Elevated building means a non-basement building built to have the lowest floor elevated above the ground level by means of solid foundation perimeter walls, pilings, or columns (posts and piers).

Elevation certificate (EC) means a Federal Emergency Management Administration (FEMA) document providing flood related information for regulatory and insurance purposes.

Encroachment means the advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

Flood means a temporary inundation of normally dry land areas.

Flood-related erosion means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

Flood-related erosion area or *flood-related erosion prone area* means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

Flood Insurance Rate Map (FIRM) means the official map of the community, on which the Federal Emergency Management Agency has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

Flood Insurance Study (FIS) means a report by FEMA that examines, evaluates and determines flood hazards and, if appropriate, corresponding water surface elevations, or an examination, elevation and determination of mudflow and/or flood-related erosion hazards.

Floodplain means (1) a relatively flat or low land area adjoining a river, stream or watercourse which is subject to partial or complete inundation; or (2) an area subject to the unusual and rapid accumulation or runoff of surface waters from any source.

Floodplain administrator means an individual who is designated by the County Administrator to administer and implement the regulations herein.

Floodproofing means any combination of structural and nonstructural additions, changes or adjustments to properties and structures which reduce or eliminate flood damage to lands, water and sanitary facilities, structures and contents of buildings.

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot at any point within the community.

Floodway fringe means the area between the floodway and base flood floodplain boundaries. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevation of the base flood by more than one (1.0) foot at any point (shown on FIRM).

Freeboard means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management.

Functionally dependent use means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

Highest adjacent grade means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic structure means any structure that is:

- (a) Listed individually in the National Register of Historic Places;
- (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on the Virginia inventory of historic places; or

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- (d) Individually listed on the local inventory of historic places that has been certified by and approved by the state program.

Hydrologic and Hydraulic Engineering Analysis means an analysis performed by a licensed professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

Land development means (i) the improvement of one (1) lot, or two (2) or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two (2) or more buildings, or (b) the division or allocation of land or space between or among two (2) or more existing or prospective occupants by means of, or for the purpose of, streets, common areas, leaseholds, condominiums, building groups or other features; or (ii) a subdivision of land.

Letters of Map Change (LOMC) means an official FEMA determination, by letter, that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

1. *Letters of Map Amendment (LOMA)*: an amendment based on technical data showing that a property was incorrectly included in a designated special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a parcel of land as defined by metes and bounds or structure is not located in a special flood hazard area.
2. *Letter of Map Revision (LOMR)*: a revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F) is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.
3. *Conditional Letter of Map Revision (CLOMR)*: a formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study.

Lowest floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of 44 CFR 60.3 of the Code of Federal Regulations.

Manufactured home means a structure subject to federal regulation, which is transportable in one or more sections; is eight body feet or more in width and forty body feet or more in length in the traveling mode, or is 320 or more square feet when erected on site; is built on a permanent chassis; and is designed to be used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities.

Manufactured home park or subdivision (Existing) means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean sea level means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1988 or other datum, to which base flood elevation shown on a community's flood insurance rate map are referenced.

Nonconforming structure means a structure or use of a structure or premises which lawfully existed before the enactment of these provisions.

Principally above ground means where at least fifty-one (51) percent of the actual cash value of a structure, not including land value, is above ground.

Recreational vehicle means a vehicle which is built on a single chassis; contains four hundred feet (400) square feet, or less, when measured at the largest horizontal projection; is designed to be self-propelled or permanently towable by a light duty truck; and is designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

Regulatory floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height (one (1) foot).

Repetitive Loss Structure means a building covered by a contract for flood insurance that has incurred flood-related damages on at least two occasions during a 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25 percent of the market value of the building at the time of each flood event.

Resource protection area (RPA) means lands at or near the shoreline that have an intrinsic value to water quality due to the ecological and biological processes they perform, or are sensitive to impacts which may result in significant degradation to the quality of state waters. This definition includes tidal wetlands, tidal shores, non-tidal wetlands adjacent to tidal wetlands, and a one hundred (100) foot buffer area adjacent to and landward of the components listed above, and along both sides of any perennial stream, all as defined in section 5.5-3 of this Code.

Special flood hazard area means the land in the floodplain subject to a one percent (1%) or greater chance of being flooded in any given year.

Start of construction - For other than new construction and substantial improvement under the Coastal Barriers Resource Act (P.L. - 97-348), means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

Subdivision means the division or redivision of lots, tracts, or parcels of land by any means into two (2) or more lots, tracts, parcels, or other divisions of land, including a change in existing lot lines for the purpose, whether immediate or future, of lease, transfer of ownership, or building, or lot development.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

Substantial improvement means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure either (a) before the improvement or repair is started, or (b) if the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either (1) any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely

necessary to assure safe living conditions, or (2) any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.

Variance means a grant of relief by a community from the terms of a floodplain management regulation.

Violation means the failure of a structure or other development to be fully compliant with Gloucester County's floodplain management regulations.

Water dependent use or facility means a development of land that cannot exist outside of the resource protection area (RPA) and must be located on the shoreline because of the intrinsic nature of its operation. These facilities include, but are not limited to, ports, the intake and outfall structures of power plants, water treatment plants, sewage treatment plants, and storm sewers, as well as marinas, boat docking structures, beaches and other public water orientated recreation areas, and fisheries and other marine resource facilities.

(Ord. of 7-7-87, Art. II; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Sec. 8.5-3. Statement of intent.

These regulations shall apply to all property located within an area identified as being subject to inundation by water of the base flood event, and as such shall supplement the regulations of the zoning district within which such property is located. These regulations are intended to ensure the health, safety and general welfare of the public by ensuring that inhabitants and property within a designated floodplain area are safe from damage due to flooding. This chapter complies with the requirements of the National Flood Insurance Program (42 U.S.C. 4001—4128) of the Federal Insurance Administration. These regulations are necessary in order for all property owners within the county to be eligible for the National Flood Insurance Program and thereby purchase such insurance at nominal rates. Where these regulations are at variance with the general regulations of the county, it is intended that these regulations shall apply. Records of actions associated with administering this chapter shall be kept on file and maintained by or under the direction of the floodplain administrator in perpetuity.

(Ord. of 7-7-87, § 1-2; Ord. of 8-3-2010; Ord. of 9-21-2021)

Sec. 8.5-4. Authority.

This chapter is adopted pursuant to the authority granted by Va. Code Sections 15.2-2280 and 10.1-600 et seq., and all amendments thereto.

(Ord. of 7-7-87, § 1-3; Ord. of 8-3-2010)

Sec. 8.5-5. Purpose.

The purpose of these provisions is to prevent the loss of property and life, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

- (1) Regulating uses, activities and development which, acting alone or in combination with other existing or future uses, activities and development, will cause unacceptable increases in flood heights, velocities and frequencies;
- (2) Restricting or prohibiting certain uses, activities and development from locating within areas subject to flooding;
- (3) Requiring all those uses, activities, and developments that do occur in flood-prone areas to be protected and/or flood-proofed against flooding and flood damage; and

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- (4) Protecting individuals from buying lands and structures which are unsuited for intended purposes because of flood hazards.

(Ord. of 7-7-87, § 1-4; Ord. of 8-3-2010; Ord. of 9-2-2014(2))

Sec. 8.5-6. Applicability.

These provisions shall apply to all lands within the jurisdiction of Gloucester County, Virginia, and identified as areas subject to inundation by water of the base flood event.

(Ord. of 7-7-87, § 1-5; Ord. of 8-3-2010; Ord. of 9-21-2021)

Sec. 8.5-7. Compliance.

No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of this chapter and any other applicable ordinances and regulations.

(Ord. of 7-7-87, § 1-6; Ord. of 8-3-2010)

Sec. 8.5-8. Abrogation and greater restrictions.

This chapter supersedes any less restrictive, conflicting ordinance currently in effect in flood-prone areas. However, any underlying ordinance shall remain in full force and effect to the extent that those provisions are more restrictive.

(Ord. of 7-7-87, § 1-7; Ord. of 8-3-2010; Ord. of 9-2-2014(2))

Sec. 8.5-9. Existing structures in floodplain district.

A structure or use of a structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued subject to the following conditions:

The modification, alteration, repair, reconstruction or improvement of any kind to a structure and/or use regardless of its location in a floodplain district to an extent or amount of fifty (50) percent or more of its market value shall be undertaken only in full compliance with the provisions of the Virginia Uniform Statewide Building Code and this chapter.

(Ord. of 7-7-87, Art. VIII; Ord. of 8-3-2010)

Sec. 8.5-10. Penalties.

Any person who fails to comply with any or all of the requirements or provisions of this chapter or direction of the floodplain administrator or any other authorized employee of the county shall be guilty of an offense and, upon conviction, shall pay a fine to the County of Gloucester, Virginia, of not less than twenty-five dollars (\$25.00) nor more than one thousand dollars (\$1,000.00). Each day during which any violation of this chapter continues shall constitute a separate offense. In addition to the above penalties, all other actions are hereby reserved including an action for the proper enforcement of this chapter. The imposition of a fine or penalty for any violation of, or noncompliance with, this chapter shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations or noncompliances within a reasonable

time. Any structure constructed, reconstructed, enlarged, altered or relocated in noncompliance with this chapter may be declared by the board of supervisors to be a public nuisance and abatable as such.

(Ord. of 7-7-87, Art. VII; Ord. of 8-3-2010; Ord. of 9-21-2021)

Sec. 8.5-11. Warning and disclaimer of liability.

The degree of flood protection required by the floodplain management ordinance of Gloucester County, Virginia, is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter and the districts established hereby shall not create liability on the part of the county or any officer, agency or employee thereof for any flood damage that results from reliance on this chapter or any administrative decision lawfully made hereunder.

(Ord. of 7-7-87, Art. IX; Ord. of 8-3-2010)

Sec. 8.5-12. Severability.

If any section, subsection, paragraph, sentence, clause, or phrase of this chapter shall be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of this chapter. The remaining portions shall remain in full force and effect, and for this purpose, the provisions of this chapter are hereby declared to be severable.

(Ord. of 9-6-94; Ord. of 8-3-2010)

Secs. 8.5-13—8.5-20. Reserved.

ARTICLE II. ESTABLISHMENT OF FLOODPLAIN DISTRICTS

Sec. 8.5-21. Basis of districts.

The various floodplain districts shall include areas subject to inundation by waters of the base flood. The basis for the delineation of these districts shall be the Flood Insurance Study (FIS) and the Flood Insurance Rate Map (FIRM) for Gloucester County prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated November 19, 2014, as amended. Effective October 21, 2021, the FIS and the FIRM shall be the one dated October 21, 2021, and any subsequent revisions or amendments thereto.

- (1) The floodway district is delineated, for purposes of this chapter, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the base flood without increasing the water surface elevation of that flood more than one (1) foot at any point. The areas included in this district are specifically defined in Table 23 of the above-referenced flood insurance study and shown on the accompanying flood insurance rate map.
- (2) The flood-fringe district (AE and AO zones) shall be that area of the base floodplain not included in the floodway district. The basis for the outermost boundary of the district shall be the base flood elevations contained in the flood profiles of the above-referenced flood insurance study and as shown on the accompanying flood insurance rate map.
- (3) The approximated floodplain district (A zones) shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a base flood floodplain boundary has been

approximated. Such areas are shown as Zone A on the maps accompanying the flood insurance study. For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. Where the specific base flood elevation cannot be determined for this area using other sources of data, such as the U.S. Army Corps of Engineers Floodplain Information Reports, U.S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this elevation in accordance with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analysis shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by Gloucester County office of building inspections.

- (4) Coastal A zones shall be those areas, as defined by the VA USBC, that are subject to wave heights between 1.5 feet and 3 feet, and identified on the FIRM as areas of Limit of Moderate Wave Action (LiMWA).
- (5) Coastal high-hazard areas district (V and VE zones) shall be those portions of land within the coastal floodplain subject to inundation by high velocity waters and wave action.

(Ord. of 7-7-87, § 3-1; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Sec. 8.5-22. Official floodplain map.

The boundaries of the floodplain districts are established as shown on the flood insurance rate maps which are declared to be a part of this chapter and which shall be kept on file at the county office of building inspections.

(Ord. of 7-7-87, § 3-2; Ord. of 8-3-2010; Ord. of 9-2-2014(2))

Sec. 8.5-23. District boundary changes.

The delineation of any of the floodplain districts may be revised by the board of supervisors where natural or man-made changes have occurred and/or more detailed studies conducted or undertaken by the U.S. Army Corps of Engineers or other qualified agency or individual documents the need for such change. However, prior to any such change, approval must be obtained from the Federal Insurance Administration.

(Ord. of 7-7-87, § 3-3; Ord. of 8-3-2010)

Sec. 8.5-24. Interpretation of district boundaries.

Initial interpretation of the boundaries of the floodplain districts shall be made by the agent. Should a dispute arise concerning the boundaries of any of the districts, the board of building code appeals shall make the necessary determination. The person questioning or contesting the location of the district boundary shall be given a reasonable opportunity to present his case to the board of building code appeals and to submit his own technical evidence if he so desires.

(Ord. of 7-7-87, § 3-4; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2))

Sec. 8.5-25. Designated official.

The floodplain administrator is hereby appointed to administer and implement these regulations and is referred to herein as the floodplain administrator. The floodplain administrator may delegate duties and responsibilities set forth in these regulations to qualified technical personnel.

(Ord. of 7-7-87, § 3-5; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Sec. 8.5-26. Submitting technical data.

The county's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the county shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data. Such submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data.

(Ord. of 8-3-2010)

Secs. 8.5-27—8.5-35. Reserved.

ARTICLE III. DISTRICT PROVISIONS

Sec. 8.5-36. General requirements.

- (a) All uses, activities and development occurring within any floodplain district shall be undertaken only upon the issuance of a building permit. Such development shall be undertaken only in strict compliance with the provisions of this chapter and with all other applicable codes and ordinances such as the Gloucester County Zoning Ordinance, the Gloucester County Wetlands Zoning Ordinance [Chapter 20], the Gloucester County Soil and Erosion Sedimentation Control Ordinance [Chapter 7.5], the Gloucester County Site Plan Ordinance [Chapter 15.5], the Gloucester County Subdivision Ordinance [Chapter 15], the Gloucester County Chesapeake Bay Preservation Ordinance [Chapter 5.5], and the Virginia Uniform Statewide Building Code [Chapter 5, Article I]. Prior to the issuance of any such permit, the floodplain administrator shall require all applications to include a certification of compliance with all applicable state and federal laws.
- (b) Under no circumstances shall any use, activity, and/or development adversely affect the flood carrying capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.
- (c) Prior to any proposed alteration or relocation of any channels or of any water course, stream, etc., within this jurisdiction, an approved permit shall be obtained from the U.S. Army Corps of Engineers, the Virginia Department of Environmental Quality (DEQ), and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations or from the office of environmental programs). Furthermore, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the Department of Conservation and Recreation (Division of Soil and Water Conservation) and the Federal Insurance Administration.
- (d) All proposals for the subdivision of land and/or new development shall include a plan drawing showing the location of all existing and proposed public and private utilities, facilities and drainage structures. If the base flood elevation has been determined by the flood insurance study or other reliable source approved by the County of Gloucester, Virginia, such flood elevation shall be delineated on the proposed plan, provided that

the more stringent elevation data shall control. In addition, within the approximated floodplain district, flood and floodway information from federal, state, or other acceptable sources shall be used when available. If the proposal is greater than fifty (50) lots or greater than five (5) acres, whichever is the lesser, and the base flood elevation has not been determined for the land area, the developer shall determine the base flood elevation and delineate such flood elevation on the proposed plan. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development, including fill, shall be permitted within Zone AE on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community. All plans shall be certified by a registered professional engineer and shall be reviewed by the subdivision agent to assure that:

- (1) All such proposals are consistent with the need to minimize flood damage;
 - (2) All necessary permits have been received from the State of Virginia and appropriate federal agencies;
 - (3) All public and private utilities and facilities (including sewer, water, telephone, electric, gas, etc.) are located and constructed to minimize or eliminate flood damage. New and replacement sanitary sewage systems are to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters as approved and permitted by the State Health Department for private systems and the Gloucester County department of public utilities for public systems;
 - (4) Adequate drainage is provided to reduce exposure to flood hazard. Storm drainage facilities shall be designed to convey the flow of stormwater runoff in a safe and efficient manner. The system shall ensure proper drainage along streets, and provide positive drainage away from buildings. The system shall also be designed to prevent the discharge of excess runoff onto adjacent properties; and
 - (5) Adequate measures have been taken to minimize the adverse environmental impacts of the proposed development.
- (e) Recreational vehicles placed on sites shall either: (1) be on the site for fewer than one hundred eighty (180) consecutive days and be fully licensed and ready for highway use, or (2) meet the permit requirements for placement and the elevation and anchoring requirements for manufactured homes as contained in the Uniform Statewide Building Code. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.
- (f) All new buildings must be constructed on properly designed and compacted fill (ASTM D-698 or equivalent) that extends beyond the building walls before dropping below the base flood elevation and has appropriate protection from erosion and scour. The design of the fill or the fill standard must be approved by a registered engineer.
- (g) Where a nonresidential structure is intended to resist the intrusion of water below the base flood level, (i) a registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this chapter, and (ii) a record of certificate which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained with the floodplain administrator.
- (h) Man-made alterations to sand dunes and mangrove stands that would increase potential flood damage are prohibited.

(Ord. of 7-7-87, § 4-1; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Sec. 8.5-37. Floodway district.

In the floodway district, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the base flood evaluation.

(Ord. of 7-7-87, § 4-2; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-21-2021)

Sec. 8.5-38. Flood-fringe and approximated floodplain districts (AE, AO and A zones).

In the flood-fringe and approximated floodplain districts, the development and/or use of land shall be permitted in accordance with the regulations of the underlying area, provided that all such uses, activities, and/or development shall be undertaken in strict compliance with the floodproofing and related provisions contained in the Virginia Uniform Statewide Building Code and all other applicable codes and ordinances.

Within the approximated floodplain district, the applicant shall also delineate a floodway area based on the requirement that all existing and future development not increase the base flood elevation more than one (1) foot at any one (1) point. The engineering principle-equal reduction of conveyance shall be used to make the determination of increased flood heights.

Within the floodway area, the provisions of section 8.5-37 shall apply.

(Ord. of 7-7-87, § 4-3; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Editor's note(s)—An ordinance adopted Sept. 2, 2014, changed the title of § 8.5-38 from "Flood-fringe and approximated floodplain districts (AE and A zones)" to read as herein set out.

Sec. 8.5-39. Coastal high hazard district (V, VE and Coastal A zones).

In the coastal high hazard area district (V, VE and Coastal A zones), the following regulations shall apply in addition to the regulations cited in sections 8.5-36 through 8.5-38:

- (1) No land below the level of the base flood event may be developed unless the new construction or substantial improvement is located outside the resource protection area (RPA) (measured landward one hundred (100) feet from the mean high tide or associated tidal wetlands) or a buffer modification to the RPA requirement has been granted by the Chesapeake Bay Preservation Ordinance Administrative Board. This one hundred-foot buffer requirement excludes water dependent uses as defined;
- (2) All manufactured homes to be placed or substantially improved within V or VE or Coastal A zones shall comply with the same standards as set forth for conventional housing in V or VE or Coastal A zones;
- (3) There shall be no fill used as structural support;
- (4) Existing nonconforming uses and/or structures located on land below the level of the base flood event shall not be expanded; and
- (5) All new construction and substantial improvements in zones V, VE and Coastal A shall be elevated on pilings or columns so that:
 - a. the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at least three feet above the base flood level; and

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- b. the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

(Ord. of 7-7-87, § 4-4; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Editor's note(s)—An ordinance adopted Sept. 2, 2014, changed the title of § 8.5-39 from "Coastal high hazard district (V and VE zones)" to read as herein set out.

Sec. 8.5-40. Critical facilities.

The building of critical facilities in the five hundred-year floodplain is prohibited.

(Ord. of 9-6-94; Ord. of 8-3-2010)

Sec. 8.5-41. Specific standards.

In all special flood hazard areas where base flood elevations have been provided in the Flood Insurance Study or in the case of areas for which no detailed flood profiles or elevations are provided, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used when available. All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, and be constructed by methods and practices that minimize flood damages using materials that are resistant to flood damage, with the electrical, heating, ventilation, plumbing, and air conditioning equipment and other services so designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Mechanical equipment, ductwork and electrical systems serving the building must be elevated no lower than three feet above the base flood elevation. The following provisions shall apply:

- (1) *Residential Construction.* New construction or substantial improvement of any residential structure (including manufactured homes) shall have the lowest floor, including basement, elevated no lower than three feet above the base flood elevation.
- (2) *Non-Residential Construction.* New construction or substantial improvement of any commercial, industrial, or non-residential building shall have the lowest floor, including basement, elevated to no lower than three feet above the base flood elevation. Buildings located in all A or AE zones may be flood-proofed in lieu of being elevated, provided that all areas of the building components below the base flood elevation are made to resist the intrusion of water and with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification, including the specific elevation to which such structures are floodproofed, shall be maintained in the building inspections office.
- (3) *Elevated Buildings.* Fully enclosed areas of new construction or substantially improved structures, which are below the regulatory flood protection elevation, shall:
 - a. Not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage.
 - b. Be constructed entirely of flood resistant materials below the regulatory flood protection elevation.

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- c. Include in zones A and AE measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must be certified by a professional engineer or architect, or meet the following minimum design criteria:
- i. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.
 - ii. The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.
 - iii. If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
 - iv. The bottom of all required openings shall be no higher than one (1) foot above the adjacent finished grade.
 - v. Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
 - vi. The inside finished grade of each enclosed area must be as high or higher than the outside finished grade.
 - vii. Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.
- d. The AO Zone on the FIRM accompanying the FIS shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply [44 CFR 60.3(c)]:
- i. All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM, above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM plus three feet. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than five feet above the highest adjacent grade.
 - ii. All new construction and substantial improvements of non-residential structures shall:
 - (1) Have the lowest floor, including basement, elevated to or above the flood depth specified on the FIRM plus three feet. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least five feet above the highest adjacent grade; or,
 - (2) Together with attendant utility and sanitary facilities, be completely floodproofed to the specified flood level so that any component below that level is made to resist the passage of water and made with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
 - iii. Adequate drainage paths shall be provided around proposed structures on slopes to guide floodwaters around and away from proposed structures.
- e. In zones V, VE and Coastal A, a registered design professional engineer or architect shall develop and seal the structural design, specifications and plans for the construction, and shall certify that

the design and methods of construction used are in accordance with accepted standards of practice for meeting the provisions of Article III, Sec. 8.5-39.

- i. The space below the lowest floor shall be either free of obstruction or constructed with nonsupporting breakaway walls, open wood-lattice work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system;
 - ii. Breakaway walls shall collapse from water loads that are less than that which would occur during the base flood; and,
 - iii. The elevated portion of the building and supporting foundation shall not be subject to collapse, displacement or other structural damage due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading shall be those required by the Virginia Uniform Statewide Building Code (USBC). The enclosed space below the lowest floor shall be used solely for parking of vehicles, building access, or storage.
 - iv. All new construction of structures intended for occupation shall be located landward of the reach of mean high tide.
- (4) *Standards for Manufactured Homes.* All new, substantially improved, or relocated manufactured homes must meet all of the elevation requirements for new construction. They shall be placed on reinforced piers or other equivalent foundation elements and anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to appropriate ground anchors. This standard shall be in addition to and consistent with manufacturers' requirements for resisting wind forces.
- (5) When development does not meet the criteria for substantial improvement, the lowest floor of a new addition to an existing structure must be elevated no lower than the base flood elevation or the adjoining structure's floor elevation, whichever is higher.

(Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Secs. 8.5-42—8.5-50. Reserved.

ARTICLE IV. ADMINISTRATIVE PROVISIONS

Sec. 8.5-51. Permit requirements.

A permit is required for all development (including, but not limited to, the subdivision of land, construction of buildings and structures, placement of manufactured homes, fill or any combination of these) in the floodplain district and shall be granted only after necessary permits from all applicable local, state and federal agencies have been obtained. The floodplain administrator or his designee shall review all proposed development to assure it is reasonably safe from flooding.

- (1) The application for a permit shall contain information including, but not limited to, the following:
 - a. Name and address of applicant. The applicant must be the owner or any authorized agent of the owner.
 - b. Name and address of owner of land on which construction is proposed.
 - c. Name and address of contractor.

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- d. Site location.
 - e. A plan of the site showing the size and location of the proposed construction as well as any existing buildings or structures.
 - f. Summary description of proposed work and estimated cost.
 - g. Topographic information showing existing and proposed ground elevations.
 - h. Depending on the type of structure involved, the following information shall also be included in the application:

For the structures to be elevated above the base flood elevation, the plans shall show:

- 1. The size of the proposed structure(s) and its relation to the lot where it is to be constructed.
 - 2. The elevations of the proposed final grading and lowest floor, and the existing ground and base flood elevation as certified by a registered professional engineer, surveyor or architect.
 - 3. The method of elevating the proposed structure, including details of proposed fills, pile structures, retaining walls, foundations, erosion protection measures, etc. These plans shall be prepared by a registered professional engineer or architect.
- (2) Upon completion of construction and prior to the issuance of the occupancy permit, the elevation certificate shall be completed and submitted to the building official who shall ensure that construction is in accordance with this chapter. If the structure has been floodproofed, the elevation to which the structure has been floodproofed shall also be supplied. Records of actions associated with the administration of this chapter shall be kept on file and maintained by the floodplain administrator.
 - (3) Elevation certificates are required for new construction and may be required at different phases of construction depending upon the type of development. Elevation certificates must be approved by the floodplain administrator prior to the issuance of an occupancy permit.

(Ord. of 7-7-87, § 5-1; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Sec. 8.5-52. Variances.

- (a) *Appeal procedure.* Whenever any person is aggrieved by a decision of the floodplain administrator with respect to the provisions of this chapter, it is the right of that person to appeal to the board of building code appeals for a variance. Such appeal must be filed, in writing, within thirty (30) days after the determination by the floodplain administrator. Upon receipt of such an appeal, the board of building code appeals shall set a time and place for the purpose of hearing the appeal, which shall be not less than ten (10) nor more than thirty (30) days from the date of receipt of the appeal. Notice of the time and place of the hearing of the appeal shall be given to all parties at which time they may appear and be heard. The determination by the board of building code appeals shall be final in all cases.
- (b) *Consideration and issuance of variances.*
 - (1) In passing upon applications for variances, the board of building code appeals shall consider the following factors:
 - a. The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development or activity within any floodway area that will cause an increase in the base flood elevation.
 - b. The danger that materials may be swept on to other lands or downstream to the injury of others.

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- c. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
 - d. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
 - e. The importance of the services provided by the proposed facility to the community.
 - f. The requirements of the facility for a waterfront location.
 - g. The availability of alternative locations not subject to flooding for the proposed use.
 - h. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
 - i. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
 - j. The safety of access to the property in time of flood of ordinary and emergency vehicles.
 - k. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.
 - l. The repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude any structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
 - m. A showing of good and sufficient cause and such other factors which are relevant to the purposes of this chapter.
- (2) The board of building code appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for protection and other related matters.
 - (3) Variances shall only be issued after the board of building code appeals has determined that the granting of such will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense, (d) the creation of nuisances, (e) fraud or victimization of the public, or (f) conflict with local laws or ordinances.
 - (4) A variance shall only be issued after the board of building code appeals has determined that the variance will be the minimum relief to any hardship.
 - (5) The board of building code appeals shall notify the applicant for a variance, in writing, that the issuance of a variance to construct a structure below the base flood elevation (a) increases risks to life and property, and (b) will result in increased premium rates for flood insurance.
 - (6) A record of the above notification as well as all variance actions, including justification for their issuance, shall be maintained by the floodplain administrator, and a record of all variances which are issued shall be noted in the annual report submitted to the Federal Insurance Administrator.

(Ord. of 7-7-87, §§ 6-1, 6-2; Ord. of 9-6-94; Ord. of 8-3-2010; Ord. of 9-2-2014(2); Ord. of 9-21-2021)

Historic Flooding Data and Hydrologic Studies Projecting Flood Frequency

The entirety of the site is located within a mapped floodplain, with portions located within FEMA Flood Zones AE and VE. The shoreline has eroded at a rate of about -1 to -1.5 ft per year since 1994 (Shoreline Studies Program Shoreline Change Database). The project site is impacted by ever increasing effects of coastal and tidal influences, resulting in site flooding and drainage issues. Due to the project site's adjacency to the York River and relatively low elevation, the site has an extensive history of experiencing flooding events that have resulted in significant impacts to infrastructure and the environment. For example, the project location has long been, and continues to be, impacted by tropical, sub-tropical, and Nor'easter events.

Since 2003 there have been several significant coastal events resulting in flooding impacts to the services building and site:

- Hurricane Isabel in 2003, resulting in 5 feet of water in the concession room/restroom building
- A nor-easter in 2005 resulting in 3 feet of water in the concession room/restroom building
- A nor'easter in 2010
- A nor'easter in June 2011
- Hurricane Irene in August 2011 that resulted in 1 foot of water in the concession room/restroom building
- A nor'easter in 2012
- A coastal storm in October 2015
- Hurricane Matthew (2016): This storm caused severe flooding from intense rainfall and storm surges, leading to damage to infrastructure and erosion along shorelines.
- Tropical Storm Michael (2018): Gloucester suffered heavy flooding
- Nor'easters: In October 2022, remnants of a nor'easter associated with Hurricane Ian brought substantial flooding, pushing water levels up to 2-3 feet in some places. This was noted as some of the worst flooding in 10-15 years, particularly at Gloucester Point, and led to erosion along shorelines and road closures.
- Tropical Storm Isaias (2020): This storm triggered flooding across eastern Virginia, and Gloucester experienced issues with standing water and road blockages, contributing to erosion of coastal areas.

The damage from Hurricane Isabel in 2003 was extensive, likely the storm of record in the Park's 40-year existence. In addition to approximately 5' of water in the building, the storm ripped up the Park's pier, pushed the stage through one of the services building's cinderblock walls and damaged the playground.

Despite not being named storm events, the site is subjected to regular flooding events, that result in damages, although perhaps not to the degree of the aforementioned events. With nearly every nor'easter the boat landing, parking lot, and park flood.

During other smaller storms, water ponds within the park and lots. A design is needed to achieve the goals of stormwater management, to keep the Park as usable as possible and to protect the expensive infrastructure and amenities. While flood insurance is maintained for the services building (a claim was filed for approximately \$47,000 in 2003 due to Hurricane Isabel) retaining the building in a condition

that is subject to flooding impacts is not the best way to manage resilience long term, subjecting the County, its taxpayers, and even state and federal taxpayers to incremental and varying costs.

According to NOAA's Coastal Flood Mapper, this project location is at the highest risk of coastal flooding in the future. According to a recent study conducted by the Center for Coastal Resources Management, a 1.5-foot rise in sea level coupled with a three-foot storm surge - similar to what would be experienced in a strong tropical storm - would lead to 13% of Gloucester County's land mass being flooded – including 118 miles of roads. Notably, only 3% of this projected flood area is currently developed.

See included files:

- Gloucester Point Beach Park - Map of Project Location
- Gloucester Point Beach Park - FIRMette
- Gloucester Point Beach Park - Flood Exposure Map

Link to the Current Hazard Mitigation Plan

https://mppdc.com/articles/service_centers/mandates/All%20Hazards%20Mitigation%20Plan%20Update/FINAL_2021_Amended%20MPPDC%20Plan_093122_RED.pdf

Maintenance Plan

For ongoing projects or projects that will require future maintenance, such as infrastructure, flood warning and response systems, signs, websites, or flood risk applications, a maintenance, management, and monitoring plan for the projects must be provided demonstrating how they will be maintained, managed, and monitored after the lifespan of this award for a minimum of ten years or the expected lifespan of the project, whichever is longer. Provide more detailed versions of those outlined as General Requirements.

VIMS-SSP will complete an as-built survey immediately following construction and another survey one-year post-construction. VIMS-SSP will also collect high-resolution LiDAR elevation data and drone imagery of the entire project in an effort to monitor changes over the first year. VIMS-SSP will use this data to evaluate the effectiveness of the project ensuring the dune is growing and retaining sand, which is crucial for shoreline stabilization.

VIMS-SSP will provide guidance to the County regarding proper maintenance techniques. Standard maintenance of living shorelines typically includes:

- Debris removal: Regular removal of debris, such as litter, to prevent accumulation that could disrupt the natural processes of the living shoreline and affect its stability.
- Vegetation management: Replanting vegetation and removing invasive species to maintain the health and stability of the living shoreline.
- Erosion control: Regular assessment and management of erosion, which may include adding addition sand to enhance the shoreline's protective function.

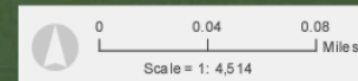
County staff, who have maintained the park for over 40 years, will conduct regular inspections and maintenance over the expected lifespan of the project. The Facilities Management department is responsible for:

- Maintenance, general repair, grounds keeping, and custodial care of County properties,
- Maintenance and inspection services on County vehicles and equipment, and
- Seasonal mosquito control in Mosquito Control Districts.

County staff are well-equipped to oversee any needed maintenance and are skilled in automotive and equipment repair, carpentry, landscaping, HVAC, masonry, mosquito control, painting, plumbing, and sign making. Staff performs interior building renovations and completes small construction projects. They also maintain the blue and green road name signs throughout the County.

Should any conditions occur at the site which rise above a level of state-of-good-repair maintenance, the County intends to consult VIMS-SSP for advice regarding any necessary major repairs and seek solutions accordingly.

Gloucester Point Beach Park Map



Relationship to Other Projects

Where applicable, briefly describe the relationship between this project and other past, current, or future resilience projects. If the applicant has received or applied for any other grants or loans through the CFPF, please identify those projects, and, if applicable, describe any problems that arose with meeting the obligations of the grant and how the obligations of this project will be met. Provide more detailed versions of those outlined as General Requirements.

The Park has frequently been damaged by storms during its ~40-year history. The damage from Hurricane Isabel in 2003 was extensive and likely serves as the storm of record for the Park. In addition to approximately 5 feet of water in the services building at the site, the storm ripped up the Park's pier, pushed the stage through one of the services building's cinderblock walls, and damaged the playground. A flood insurance claim was filed for approximately \$47,000 for repairs. The playground was removed. No claims for damage from other storms were filed. The County handled the repair work following Isabel and has continued to do so with every impact experienced at the site. The County continues to invest in park amenities and maintenance and would like to protect their investment with the proposed project.

Adjacent to the Park, VIMS constructed attached headland breakwaters consisting of rock, sand, and plants for a living shoreline. The project included a stone spur extending southwest from the VIMS revetment by 70 feet across the County shoreline. This had a significant positive impact by abating the chronic erosion along that section of Gloucester Beach. As part of this proposed project, the spur will be lengthened slightly to extend the diffraction point and work better within the current design.

Gloucester Point Beach Park, as the primary public waterfront facility, is envisioned to serve the next generation of users as a thriving recreational hub for the County and the wider region. Gloucester County is planning many improvements to the site over the coming years; however, the additional improvements planned for the park cannot occur with protecting the shoreline. There is no need to seek funding of a higher and wider fishing pier if the parking lot and infrastructure are not protected. The same is true for replacing the bathrooms that routinely flood. Constructing a raised structure and accompanying walkway would be wasteful if shoreline stabilization is not funded. Installing the living shoreline is the first and most crucial step, and it is also hoped that completing this project will aid in securing funds for other improvements to the park.

In addition, MPPDC staff have worked throughout the years to understand the policy, research and impacts of flooding (i.e., stormwater, coastal, riverine, sea-level rise) and coastal resiliency to the region. Below is a list of projects that have built upon each other over the year that have contributed to our understanding and the region's coastal resilience.

Fight the Flood Program (2020 to present): The Fight the Flood program (www.FightTheFloodVA.com) was launched in 2020 to connect property owners to contractors who can help them protect their property from rising flood waters and erosion. FTF also offers a variety of financial tools to fund these projects including but not limited to the Septic Repair revolving loan program, Living Shoreline incentives revolving loan fund program, and plant insurance for living shorelines. Since the beginning of the program FTF has brought \$44,506,804 in flood protection via direct loans and grants to the Middle Peninsula. Currently the program has 200 registrants that have expressed their interest and need in funding to mitigate funds. Additionally, the program partners with 41 business throughout the nation to

provide solutions to FTF program registrants. As part of the FTF program, MPPDC staff diligently and consistently apply for grant and/or loan funds to implement resiliency projects within the Middle Peninsula. In 2024 alone, MPPDC staff have submitted 58 applications requesting \$104,378,663. Since the program's inception in 2020, 235 applications have been submitted requesting \$159 Million in funding. To date this level of production has occurred practically in an organic matter via word of mouth. MPPDC has received funding through the Virginia Department of Conservation and Recreation's Community Flood Resiliency Fund (Project # CFPF-24-04-20) to increase the capacity of the FTF Program and begin actively promoting the program and soliciting additional participation. With this funding MPPDC has hired a new Deputy Director of Operations that will administer and manage project funded through Round 5 CFPF. This unique program has brought an unparalleled level of success in implementing coastal resilience solutions and continues to serve as the only municipal coastal resilience and flood protection municipal program of its kind in the nation and Commonwealth.

Living Shoreline Incentive Program (2016 to present): In 2011 Virginia legislation was passed designating living shorelines as the preferred alternative for stabilizing Virginia tidal floodplain shorelines. The Virginia Marine Resources Commission, in cooperation with the Virginia Department of Conservation and Recreation and with technical assistance from the Virginia Institute of Marine Science (VIMS), established and implemented a general permit regulation that authorizes and encourages the use of living shorelines however, no financial incentives were put in place to encourage consumers to choose living shorelines over traditional hardening projects in the Commonwealth. To fill this, need the MPPDC developed the MPPDC Living Shoreline Incentives Program to offer loans and/or grants to private property owners interested in installing living shorelines to stabilize their shoreline. Living Shoreline loan funding is available to waterfront homeowners with financing living shorelines, permitted by the Virginia Marine Resources Commission. Loans up to \$10,000 can be financed for up to 5 years (60 months). Loans over \$10,000 can be financed for up to 10 years (120 months). Loans up to \$10,000 can be financed for up to 5 years (60 months). Loans over \$10,000 can be financed for up to 10 years (120 months). Loans over \$35,000 have the option of financing up to 120 months. Interest is at 50% the published Wall Street Journal Prime rate on the date of loan application. Minimum loan amount is \$1,000. Maximum determined by income and ability to repay the loan. Limited loan forgiveness is available for qualified applicants. Since 2016 under the MPPDC Living Shoreline Revolving Loan program, 8 10 living shorelines have been financed and built encumbering over \$800,000 in VRA loan funding and ~400,000 in NFWF grant funding. Living Shoreline construction cost to date range per job \$14,000-\$180,000. MPPDC oversees all aspects (planning, financing, construction, and loan servicing) of these projects from cradle to grave.

Emergency Management - Hazard Mitigation Planning (2009 to Present): Since 2009, the Middle Peninsula Planning District Commission has assisted regional localities in meeting the federal mandate to have an adopted local hazard plan. The Regional All Hazards Mitigation Plan addresses the natural hazards prone to the region, including hurricanes, winter storms, tornadoes, coastal flooding, coastal/shoreline erosion, sea level rise, winter storms, wildfire, riverine flooding, wind, dam failures, drought, lightning, and earthquakes. This plan also consists of a HAZUS assessment of hurricane wind, sea level rise (i.e., Mean High Higher Water and the NOAA 2060 intermediate-high scenario), and flooding (coastal and riverine flooding) that estimates losses from each hazard. The Middle Peninsula All-Hazard Mitigation Plan was updated and approved by FEMA in April 2021.

Oyster Bag Sill Construction and Monitoring at Two Sites in Chesapeake Bay (2018): VIMS Shoreline Studies Program worked with the PAA to (1) install oyster bag sills as shore protection at two PAA sites with the goal of determining effective construction techniques and placement guidelines for

Chesapeake Bay shorelines and (2) assess the effectiveness for shore protection with oyster bags on private property through time.

Virginia Stormwater Nuisance Law Guidance (2018): This report was developed by the Virginia Coastal Policy Center to understand the ability of a downstream recipient of stormwater flooding to bring a claim under Virginia law against an upstream party, particularly a nuisance claim. The report summarizes how Virginia courts determine stormwater flooding liability between two private parties.

Mathews County Ditch Project - VCPC White Papers (2017): This report investigated the challenges presented by the current issues surrounding the drainage ditch network of Mathews County. The study summarized research conducted in the field; examined the law and problems surrounding the drainage ditches; and proposed some next steps and possible solutions.

Mathews County Ditch Mapping and Database Final Report (2017): This project investigated roadside ditch issues in Mathews County through mapping and research of property deeds to document ownership of ditches and outfalls. This aided in understanding the needed maintenance of failing ditches and the design of a framework for a database to house information on failing ditches to assist in the prioritization of maintenance needs.

Mathews County Rural Ditch Enhancement Study (2015): In contract with Draper Aden Associates, a comprehensive engineering study was developed to provide recommendations and conceptual opinions of probable costs to improve the conveyance of stormwater and water quality through the ditches in Mathews County.

Drainage and Roadside Ditching Authority (2015): This report explored the enabling mechanism in which a Regional Drainage and Roadside Ditching Authority could be developed. An Authority would be responsible for prioritizing ditch improvement needs, partnering with Virginia Department of Transportation (VDOT) to leverage available funding, and ultimately working toward improving the functionality of the region's stormwater conveyance system.

Land and Water Quality Protection (2014): In light of changing Federal and State regulations associated with Bay clean up-nutrient loading, nutrient goals, clean water, OSDS management, storm water management, TMDLs, etc., staff from the Middle Peninsula Planning District Commission (MPPDC) will develop a rural pilot project which aims to identify pressing coastal issue(s) of local concern related to Bay clean up and new federal and state legislation which ultimately will necessitate local action and local policy development. Staff has identified many cumulative and secondary impacts that have not been researched or discussed within a local public policy venue. Year 1-3 will include the identification of key concerns related to coastal land use management/water quality and Onsite Sewage Disposal System (OSDS) and community system deployment. Staff will focus on solution based approaches, such as the establishment of a regional sanitary sewer district to manage the temporal deployment of nutrient replacement technology for installed OSDS systems, assessment of land use classifications and taxation implications associated with new state regulations which make all coastal lands developable regardless of environmental conditions; use of aquaculture and other innovative approaches such as nutrient loading offset strategies and economic development drivers.

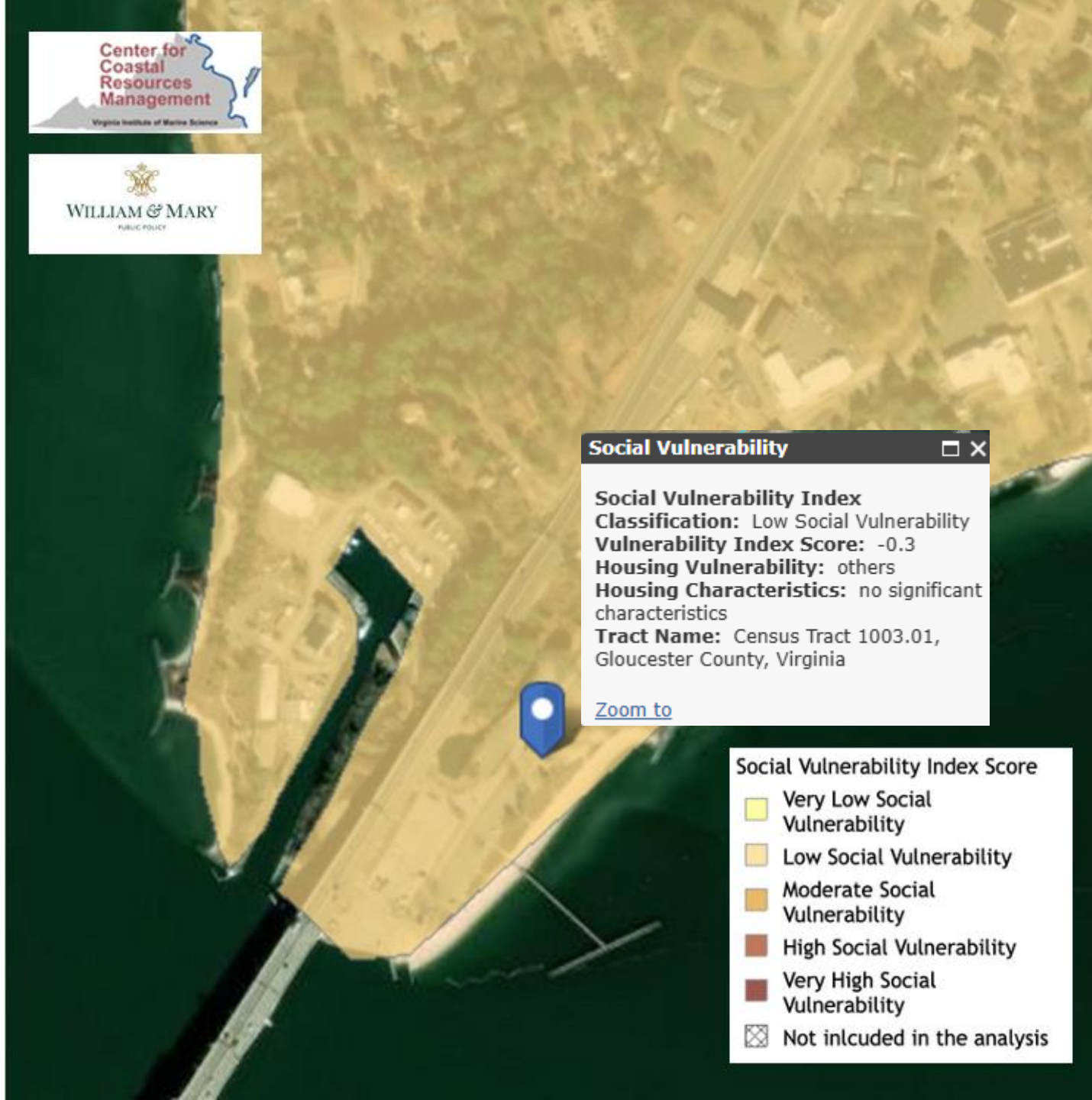
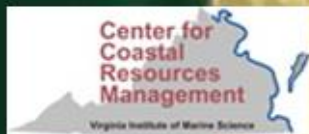
Department of Conservation and Recreation Stormwater Management (2014): The Virginia General Assembly created a statewide, comprehensive stormwater management program related to construction and post-construction activities (HB1065 - Stormwater Integration). The Virginia

Department of Conservation and Recreation requires stormwater management for projects with land disturbances of one acre or more. This new state mandate requires all Virginia communities to adopt and implement stormwater management programs by July 1, 2014, in conjunction with existing erosion and sediment control programs. Additionally, the communities within the MPPDC are required to address stormwater quality as stipulated by the Chesapeake Bay TMDL Phase II Watershed Implementation Plan and the Virginia Stormwater Regulations. The MPPDC Stormwater Program helped localities develop tools specific to the region necessary to respond to the state mandate requirement for the development of successful stormwater programs.

Stormwater Management-Phase II (2014): MPPDC staff and Draper Aden Associates worked with localities (i.e. Middlesex, King William, and Mathews Counties and the Town of West Point) interested in participating in a Regional Stormwater Management Program. While each locality sought different services from the regional program, this project coordinated efforts, developed regional policies and procedures, and the proper tools to implement a regional VSMP.

Climate Change & Sea Level Rise (2009 to 2012): The MPPDC was funded for a 3 Phase project through the Virginia Coastal Zone Management Program to assess the impacts of climate and sea level rise throughout the region. With over 1,000 miles of linear shoreline, the Middle Peninsula has a substantial amount of coast under direct threat of accelerated climate change and more specifically sea-level. In Phase 1, MPPDC staff assessed the potential anthropogenic and ecological impacts of climate change. Phase 2 focused on the facilitating presentations and develop educational materials about sea level rise and climate change for the public and local elected officials. Finally Phase 3 focused on developing adaptation public policies in response to the assessments. Links to the reports are below:

- *Phase 1:* [Middle Peninsula Climate Change Adaptation: Facilitation of Presentations and Discussions of Climate Change Issues with Local Elected Officials and the General Public](#)
- *Phase 2:* [Climate Change III: Initiating Adaptation Public Policy Development](#)
- *Phase 3:* [Phase 3 Climate Change: Initiating Adaptation Public Policy Development](#)



Social Vulnerability

Social Vulnerability Index

Classification: Low Social Vulnerability

Vulnerability Index Score: -0.3

Housing Vulnerability: others

Housing Characteristics: no significant characteristics

Tract Name: Census Tract 1003.01, Gloucester County, Virginia

[Zoom to](#)

Social Vulnerability Index Score

-  Very Low Social Vulnerability
-  Low Social Vulnerability
-  Moderate Social Vulnerability
-  High Social Vulnerability
-  Very High Social Vulnerability
-  Not included in the analysis



GLOUCESTER COUNTY

County Administration

6489 Main Street
Gloucester, VA 23061
(804) 693-4042
www.gloucesterva.gov



October 30, 2024

Mr. Jake Shaw
Virginia Department of Conservation and Recreation
Community Flood Preparedness Fund
600 East Main Street, 24th Floor
Richmond, VA 23219-2094

RE: Application Authorization and Match Commitment for Gloucester Point Beach Park Project

Dear Mr. Shaw,

Gloucester County authorizes and supports Middle Peninsula Planning District Commission staff to request funding through the Virginia Department of Conservation and Recreation's Community Flood Preparedness Fund Round 5 (CID510071_Gloucester County_CFPF). This project will provide much needed flood and erosion protection to the Gloucester Point Beach Park, an extremely visible and popular recreational site for beach-going, fishing, and boating and commercial seafood activity. The 5-acre property owned by the County is the only publicly accessible beach in Gloucester County. A free public fishing pier, two boat landings, a play area, paved parking areas, open green space, public restroom facilities, staff storage area, and a concession room are located at the site. This project to construct a living shoreline will widen the beach and heighten dunes to provide greater protection during storms and reduce flooding at the County's only public beach.

This letter is also a commitment to match this project with \$128,250 (5% of project costs). The County will pay the match contribution during the agreement period and has the ability to cash fund the project upfront, requesting reimbursements on a quarterly basis. The grant project is a part of the County's Capital Improvement Plan and will be funded with General Fund dollars.

If you have any questions about the proposal application, please feel free to reach out to me by email at csteele@gloucesterva.info or by phone at 804-693-4042.

Sincerely,

A handwritten signature in black ink, appearing to read "Carol Steele".

Carol Steele
County Administrator



KING AND QUEEN COUNTY VIRGINIA

Founded 1691

Vivian R. Seay
County Administrator | County Attorney
Direct Telephone 434-607-0717
vseay@kingandqueenco.net

242 Allen's Circle, Suite 211
Post Office Box 177
King and Queen Court House, Virginia 23085
Office Telephone 804-785-5975

October 21, 2024

Lewis L. Lawrence, Executive Director
Middle Peninsula Planning District Commission
Post Office Box 286
Saluda, Virginia 23149

Re: Middle Peninsula Planning District Commission (MPPDC) Application
Virginia Community Flood Preparedness Fund - ROUND 5

Dear Lewie,

King and Queen County supports all MPPDC applications requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight critical for resiliency planning, coordination, and implementation. These programs, especially the MPPDC FTF program, recognize the inherent risk coastal flooding poses to the delivery of essential governmental services, like public safety services, the need for which arises due to coastal storms and recurrent flooding of all types; and resiliency services to protect at-risk waterfront real estate values upon which the funding of essential governmental services is based. In basic terms, we must in every way possible counter coastal flooding to ensure the safety of our citizens and the longevity of our boundaries.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at vseay@kingandqueenco.net.

Sincerely,

Vivian R. Seay
County Administrator | County Attorney

From: [Lewis Lawrence](#)
To: [Jackie Rickards](#)
Subject: KW Support of Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5
Date: Tuesday, October 22, 2024 11:35:39 AM
Attachments: [image001.png](#)
[image002.png](#)
[Outlook-jezwi3dg.png](#)

KW below



Lewis L Lawrence
Executive Director
Middle Peninsula Planning District Commission
P.O.Box 286
Saluda, Va 23149
804-758-2311
www.mppdc.com

From: Stacey Davenport <stacey.davenport@kwc.gov>
Sent: Tuesday, October 22, 2024 11:13 AM
To: Lewis Lawrence <llawrence@mppdc.com>
Subject: Support of Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Dear Lewie,

King William County supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency

coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at 804-769-4927.

Sincerely,

Stacey Davenport

Stacey T. Davenport

County Administrator
King William County
180 Horse Landing Road, #4
King William, VA 23086
(804) 769-4926
stacey.davenport@kwc.gov



County of Mathews Administration Office

mathewscountyva.gov



Lewis Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, VA 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund
ROUND 5

Dear Lewie,

Mathews County supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at (804) 725-7172 or via email rwilson@mathewscountyva.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ramona Wilson", is written over a light blue circular stamp.

Ramona Wilson, P.E., MPA
Mathews County Administrator

Matthew L. Walker
County Administrator



Ann Marie Ricardi
Assistant County Administrator

County of Middlesex
Office of the County Administrator

October 9, 2024

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Dear Lewie,

Middlesex County supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially the MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at 804-758-4330.

Sincerely,

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke extending to the right.

Matt Walker, County Administrator



Three Rivers Health
District

COMMONWEALTH OF VIRGINIA
VIRGINIA DEPARTMENT OF HEALTH
THREE RIVERS HEALTH DISTRICT

SERVING ESSEX, GLOUCESTER, KING & QUEEN, KING WILLIAM, LANCASTER, MATHEWS, MIDDLESEX, NORTHUMBERLAND, RICHMOND, & WESTMORELAND COUNTIES

BRENDEN RIVENBARK
DISTRICT HEALTH DIRECTOR

P.O. BOX 415
SALUDA, VIRGINIA 23149
TELEPHONE: (804) 758-2381

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Dear Lewie,

The Three Rivers Health District supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.



We feel strongly that this work will further strengthen the drinking and wastewater infrastructure in the Middle Peninsula. Should you have any questions concerning our support for the work of the MPPDC, I can be reached at Brenden.rivenbark@vdh.virginia.gov and (804) 382-9391.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenden Rivenbark".

Brenden Rivenbark
District Health Director





Town Manager

Eric S. Pollitt

Town Treasurer

Tina F. Brock

Town Clerk

Patsy K. Scates

Chief of Police

Thomas D. Carter

Town Attorney

M. Tolley Gwinn

Mayor

Roy M. Gladding

Town Council

Troy L. Balderson

Katherine B. Carlton

A. Fleet Dillard III

Kenneth A. Gillis

Carolyn Barrett

Anita Latane

TOWN OF TAPPAHANNOCK

P. O. Box 266

Tappahannock, Virginia 22560

(804) 443-3336 Fax (804) 443-1051

www.tappahannock-va.gov

October 8, 2024

Lewis L. Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Dear Lewie,

The Town of Tappahannock supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should you have any questions concerning our support for the work of MPPDC, I can be reached at 804-443-3336.

Sincerely,

Eric S. Pollitt
Town Manager
Town of Tappahannock



TOWN OF URBANNA

390 VIRGINIA ST. SUITE B, PO BOX 179, URBANNA, VA 23175
PHONE: 804-758-2613, FAX: 804-758-0389

October 8, 2024

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund
ROUND 5

Dear Mr. Lewis:

The Town of Urbanna supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should reviewing entities have any questions concerning our support for the work of the MPPDC, they can reach me at 804-758-2613 or t.costin@urbannava.gov.

Sincerely,

P. S. T. (Ted) Costin
Town Administrator

Council Members:
JOSEPH "BART" BARTOS
ROBERT J. LAWRENCE
JOHN R. "JOHNNY" NEIN, Jr.
JAMES "JAMIE" PRUETT
JOHN G. RAGSDALE, II



JOSHUA T. "JACK" LAWSON
Mayor
DEBORAH T. BALL
Vice Mayor
JOHN B. EDWARDS, JR.
Town Manager

TOWN OF WEST POINT

October 7, 2024

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund ROUND 5

Dear Lewie,

The Town of West supports the Middle Peninsula Planning District Commission's (MPPDC) application requesting funding under the Department of Conservation and Recreation (DCR)'s Community Flood Preparedness Fund (CFPF). The proposals submitted by MPPDC staff enhance and build upon regional and local resilience efforts within the Middle Peninsula. We further support project proposals that demonstrate a primary purpose of prevention or protection to reduce coastal, riverine, or inland flooding.

The MPPDC Fight the Flood (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Incentive Program design and the MPPDC FTF Program design provide the operational and administrative oversight for resiliency planning, coordination, and implementation. These programs, especially MPPDC FTF program, recognize the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types and the relationship between at-risk waterfront real estate values and funding of essential governmental services.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at (804) 843-3330.

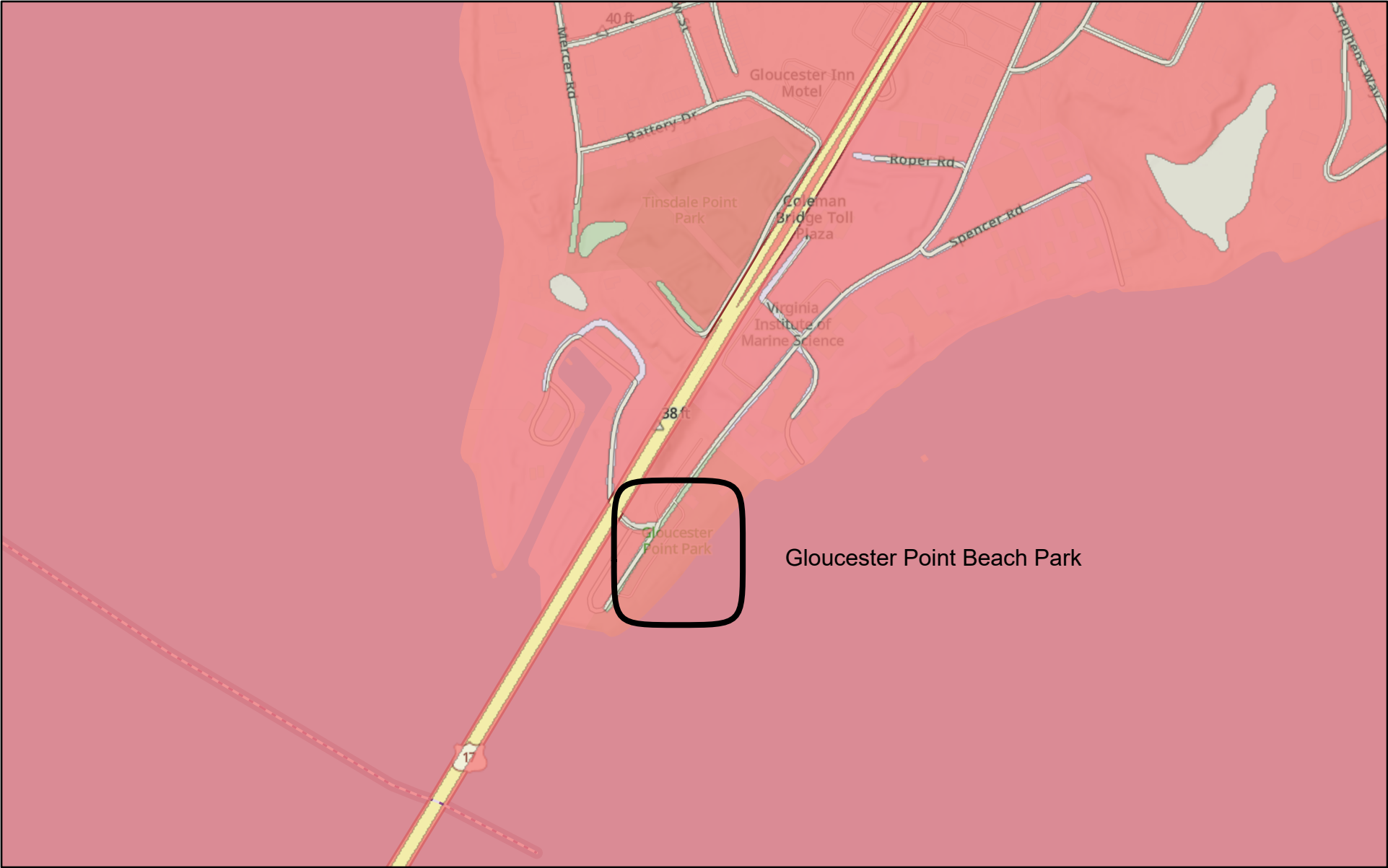
Sincerely,

A handwritten signature in blue ink, appearing to read "John B. Edwards, Jr.", is placed above the printed name.

John B. Edwards, Jr.
Town Manager

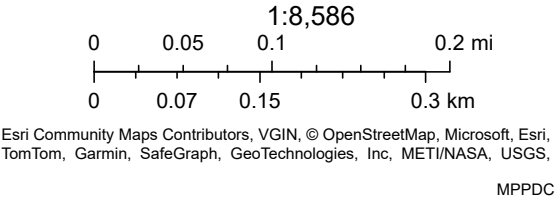
329 6th Street
P.O. Box 152, West Point, Virginia 23181
(804) 843-3330 / Fax (804) 843-4364
www.west-point.va.us

Gloucester Point Beach Park



October 28, 2024

- Adjacent States
- Cultural & Historic Preservation Category



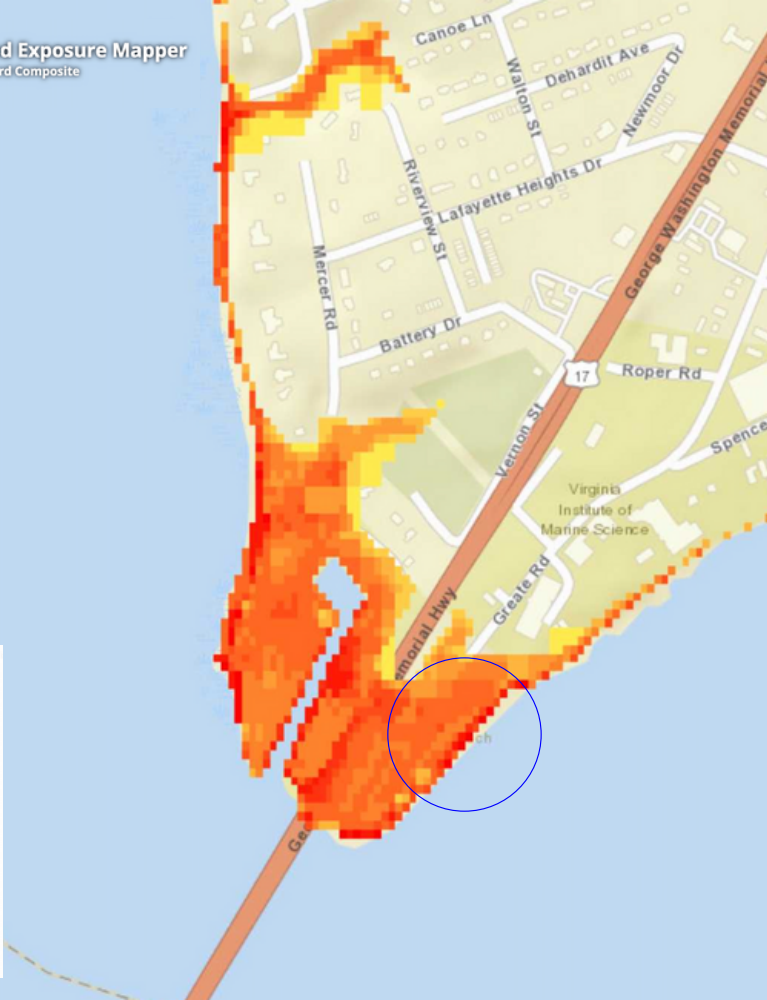


Coastal Flood Exposure Mapper

Coastal Flood Hazard Composite

Coastal Flood Hazard Composite

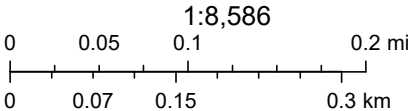
- 1 Hazard Zone
- 2 Hazard Zones
- 3 Hazard Zones
- 4 Hazard Zones
- 5 Hazard Zones
- 6 Hazard Zones
- 7 Hazard Zones
- 8 Hazard Zones
- 9 Hazard Zones
- 10 Hazard Zones
- 11 Hazard Zones



Gloucester Point Beach Park



October 28, 2024



Esri Community Maps Contributors, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,

Matthew J. Strickler
*Secretary of Natural and Historic
Resources and Chief Resilience
Officer*

Clyde E. Cristman
Director



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
*Deputy Director of
Administration and Finance*

Nathan Burrell
*Deputy Director of
Government and Community Relations*

Darryl M. Glover
*Deputy Director of
Dam Safety & Floodplain
Management and Soil & Water
Conservation*

Thomas L. Smith
*Deputy Director of
Operations*

August 19, 2021

Mr. Lewis L. Lawrence, Executive Director
Middle Peninsula Planning District Commission
Saluda Professional Center
125 Bowden Street
PO Box 286
Saluda, Virginia 23149

Re: MPPDC Resilience Plan Second Submission - CFPF

Dear Mr. Lawrence:

Thank you for the resubmission of the Middle Peninsula Planning District Commission's (MPPDC) Regional Flood Resiliency Plan. After careful review and consideration, the Virginia Department of Conservation and Recreation has deemed the Plan meets the criteria outlined in the June 2021 Community Flood Preparedness Grant Manual. This approval will remain in effect for a period of three years, ending on August 20, 2024.

1. **Element 1: It is project-based with projects focused on flood control and resilience. VA-DCR RESPONSE:**
 - a. Meets criteria as written.
2. **Element 2: It incorporates nature-based infrastructure to the maximum extent possible. VA-DCR RESPONSE:**
 - a. Meets criteria as written.
3. **Element 3: It includes considerations of all parts of the local government regardless of socioeconomics or race. VA-DCR RESPONSE:**
 - a. Meets criteria as written.
 - i. The provided plan meets the requirements of Element 3 in Appendix G of the Grant Manual. However, flood data referenced in the MPPDC portrays the majority of flooding as coastal. As we discussed during our meeting with you on August 4, 2021, there are additional types of flooding in MPPDC localities. DCR recommends the commission develop a more comprehensive planning document(s) addressing the MPPDC's overarching approach to furthering flood resilience beyond shoreline protection in all nine member localities.

4. Element 4: It includes coordination with other local and inter-jurisdictional projects, plans, and activities and has a clearly articulated timeline or phasing for plan implementation. VA-DCR RESPONSE:

a. Meets criteria as written.

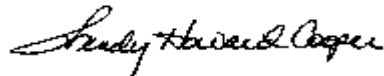
- i. DCR recognizes that both program designs make participation available to residents of all MPPDC member localities who have the ability to qualify, and that the individual program designs offer detailed breakdowns of the timeline and terms for loans disbursed pursuant to individual projects once accepted. This does not constitute a project-based timeline or phasing plan for addressing flooding resilience at the regional, locality, or community level. DCR recommends additional consideration be given to how all flooding, regardless of ability to pay, will be addressed in the MPPDC.

5. Element 5: Is based on the best available science, and incorporates climate change, sea level rise, storm surge (where appropriate), and current flood maps. VA-DCR RESPONSE:

a. Meets criteria as written.

VA DCR looks forward to working with the MPPDC in its efforts to develop a resilience plan that addresses flooding for its nine member communities.

Sincerely,



Wendy Howard Cooper, Director
Dam Safety and Floodplain Management

cc: Darryl M. Glover, DCR

Middle Peninsula Regional Flood Resiliency Plan

Resubmittal #3 8/6/21

Approved DCR 8/19/21 until 8/20/24

The Middle Peninsula is located on the western shore of the Chesapeake Bay, bound to the north by the Rappahannock River and to the south by the York River. As the region is in the Virginia coastal plain, it has a relatively flat topography with approximately 4,000 National Flood Insurance policies, approximately 415 repetitive loss and 30 severe repetitive loss structures, all of which are located along or near 1,000 miles of privately-owned shorelines generating necessary tax revenue to fund essential local governmental services. The southeastern portions of the region are located at or close to sea level, while elevation rises to approximately 200 feet above sea level moving in a northwesterly direction. Flooding is the most frequent and costly natural hazard in the United States as well as the Middle Peninsula. Since 1978 more than \$60,000,000 in Federal Flood Insurance losses have been paid due to all forms of flooding in the region.

Flooding impacts all socioeconomic groups (regardless of race, gender, age, ethnicity, diversity, or income). All land uses are subject to the destructive forces of water including, but not limited to residential, commercial, industrial, retail, agricultural, silvicultural, recreational, and publicly owned assets. All of the Middle Peninsula is subject to all types of flooding including but not limited to coastal, riverine, storm surge, inland, stormwater, flash flooding, groundwater, areal, ponding (pluvial), or urban.

The Middle Peninsula Planning District Commission (MPPDC) recognizes the need to better secure the tax base of coastal localities against the risk of flooding and the expectation to deliver essential governmental services, including public safety. All of which are more frequently challenged by coastal storms and recurrent flooding of all types. There is an unfortunate and eroding relationship between at-risk real estate values and funding of essential governmental services. Without proactive flood mitigation for coastal lands and structures, the rural coastal tax base will literally and figuratively erode into the Chesapeake Bay. Revenue will continue to decline with flood insurance claims, agricultural claims and uninsured costs will continue to increase.

In response to emerging flood challenges, the MPPDC Commission has authorized staff to develop the **Middle Peninsula Fight the Flood (FTF) Program** which leverages state and federal funding to deliver flood mitigation solutions directly to constituents, for both the built environment and the natural environment with an emphasis on nature-based flood mitigation solutions. The Middle Peninsula **Living Shoreline Resiliency Incentive Funding Program** has been the only structured program in the Commonwealth offering loan and grants to all qualified waterfront citizens and waterfront businesses since its establishment in 2015.

The Middle Peninsula **FTF** program helps property owners gain access to programs and services to better manage challenges posed by flood water.

The Middle Peninsula's Regional Flood Resiliency Plan is comprised of two primary approved policy documents which form the implementation and foundation of the Middle Peninsula flood protection approach and are indirectly and directly supported by multiple specific regional planning documents, both approved by various required federal, regional or local partners as required by statute. These documents contain the elements described in the DCR Virginia Community Flood Preparedness Fund to qualify as the region's Resiliency Plan.

Long Term Planning

- **Middle Peninsula All Hazard Mitigation Plan, FEMA and Middle Peninsula locality approved 2016 (MPPDC Website)**
- **Middle Peninsula Comprehensive Economic Development Strategy, MPPDC Approved March 2021 (MPPDC Website)**
- **Middle Peninsula VDOT Rural Long Range Transportation Plan - MPPDC Approved ~annually**

Short Term Implementation

- **Middle Peninsula Planning District Commission Fight the Flood Program Design MPPDC Commission approved June 2020 (Attached) Chairman approved 8/6/21 update**
- **Middle Peninsula Planning District Commission Living Shoreline Resiliency Incentive Funding Program-Virginia Revolving Loan Fund Program Design and Guidelines approved 2015 (Attached)**

These five documents contain the required elements described in the 2021 Grant manual for the Virginia Community Flood Preparedness Fund.

For applications made under the Virginia Community Flood Preparedness Fund and if grants and loans are made available, it is the policy of the MPPDC to provide such to qualified participants based on the terms and conditions associated with flood risk, as well as providing various grant and loan funds available to support the public purpose(s) for which the funds have been allocated. The program utilizes income guidelines for residential participation based on household income and ability to pay. Businesses will provide documentation such as profit and loss statement and/or other documentation of adequate business equity to collateralize the public investment). Grant/Loan awards, if available will be based on the program requirements of the source of the funds, if any. Unless otherwise dictated by the source of the grant funds, MPPDC will distribute grant funds on a sliding scale according to FEMA Flood insurance zones for any qualified resiliency project that meets the definition of a living shoreline found in § 28.2-104.1 of

the Code of Virginia and is designed to attenuate the impinging wave climate across the sill and marsh system during significant storm events. FEMA flood zone determination is based on the best available science recognized by FEMA. Unless prohibited by the funding source or type of project, at a minimum, project designs shall be designed to and based on site conditions identified within the locality FEMA Flood Insurance Study (FIS) which use statistical water levels, wave heights and fetch exposure.

FEMA FIS: A compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables.

Projects funded must have a primary purpose of prevention or protection to reduce coastal, riverine or inland flooding and focus on:

Nature-based solutions: including but not limited to: wetland restoration, floodplain restoration, swales and settling ponds, living shorelines and vegetated buffers.

Additional flood control solutions: including, but not limited to: floodwalls, levees, berms, flood gates, structural conveyances and storm water systems.

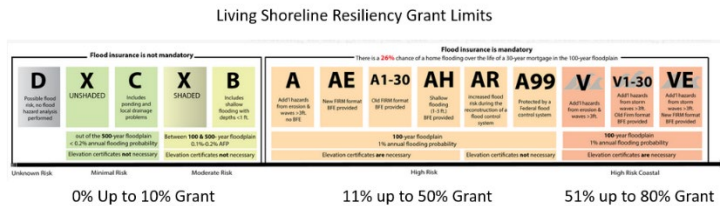
Preservation and creation of open space: including property acquisition and relocation and the permanent conservation of lands identified as having flood resilience value by the Conserve Virginia Floodplain and Flooding Resilience layer or a similar data driven analytic tool.

Designs will be recognized and considered that are sourced to other qualified metrics which include:

- Appropriate company certification illustrating and documentation of
 - nature based solution and
 - flood control solutions including documentation of BMP approval for erosion control, water quality or flood protection.
- Designed and certified by a licensed professional who routinely designs projects for the flood mitigation space.

Designs shall take into consideration any additional requirements, such as required sea-level rise rates.

Unless prohibited or directed by the funding program, MPPDC has established grant funding thresholds based on flood risk established by FEMA.



The DCR guidelines require that an approved plan shall meet the following criteria:

- It is project-based with projects focused on flood control and resilience. MPPDC YES
- It incorporates nature-based infrastructure in specific projects. MPPDC YES
- It includes considerations of all parts of a locality regardless of socioeconomics or race. MPPDC YES
- It includes coordination with other local and inter-jurisdictional projects, plans, and activities and has a clearly articulated timeline or phasing for plan implementation. MPPDC YES
- Is based on the best available science, and incorporates climate change, sea-level rise, and storm-surge (where appropriate), and current flood map MPPDC YES

The following MPPDC program designs for the Middle Peninsula Planning District Commission **Fight the Flood Program** and the **Living Shoreline Resiliency Incentive Funding Program** are the implementation structure for administering the expenditure of funding provided by the Virginia Community Flood Preparedness Fund

Middle Peninsula Planning District Commission
Fight the Flood Program
Program Design
MPPDC Commission Approved
6/24/20
Amended Per PDC Chairman 8/6/21
OVERVIEW

The Program Design for the Middle Peninsula Fight the Flood Program (FTF) outlines marketing strategies, loan application, review process, funds management, administration, and loan agreements with property and business owners. This document can be administratively reviewed with minor programmatic amendments subject to MPPDC Chairman approval. Significant programmatic changes require Commission approval.

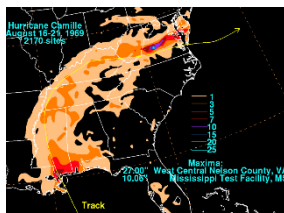
Fight the Flood: Public Purpose Statement

The MPPDC Fight the Flood (FTF) program recognizes the need to better secure the tax base of coastal localities; the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types; and the relationship between at-risk waterfront real estate values and funding of

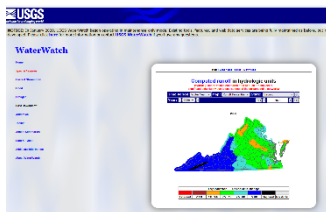
essential governmental services. The FTF program exists to help flood-prone property owners access programs and services to better manage challenges posed by flood water. When grants and loans are available, it is the policy of the MPPDC to provide such to qualified participants based on the terms and conditions associated with flood risk, as well as providing various grant and loan funds available to support the public purpose(s) for which the funds have been allocated.

The Fight the Flood program goals are to generate and facilitate community resiliency by addressing all types of flooding which impact all socioeconomic groups (regardless of race, gender, age, ethnicity, diversity, or income). All land uses are subject to the destructive forces of water including, but not limited to residential, commercial, industrial, retail, agricultural, silvicultural, recreational, and publicly owned assets. All of the Middle Peninsula is subject to all types of flooding including but not limited to coastal, riverine, storm surge, inland, stormwater, flash flooding, groundwater, areal, ponding (pluvial), or urban.

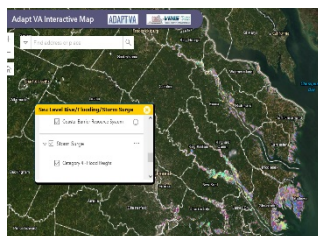
Water impacts the Middle Peninsula from a variety of sources and conditions including velocity, duration, frequency, and volume.



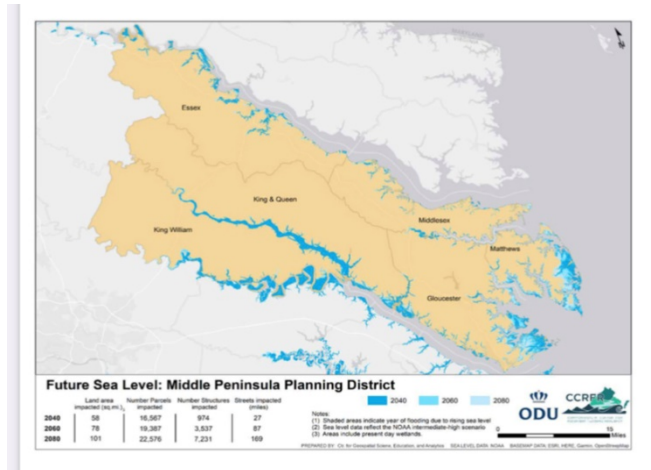
Fast Moving: Hurricane Camille was a fast-moving storm with massive rainfall over a quick time period. This type of event has major and widespread flooding impacts across the entire Middle Peninsula.



Slow Moving: According to the USGS, all of the Middle Peninsula experiences stormwater runoff between the 10-75% range causing water to move over the landscape with the ability to cause erosion.



Storm Surge: Land uses along the riverfront, Chesapeake Bay front and streams subject to tidal influence will experience surge that encompasses all land area, including the built and natural environment for the duration of the surge.



Sea-Level Rise: Land uses along the riverfront, Chesapeake Bay front and streams are subject to increasing sunny day flooding events and more frequent flooding due to sea-level rise and subsidence. By 2040, the estimates 16,567 Middle Peninsula parcels will be impacted by sea level rise [Commonwealth Center for Recurrent Flooding Resiliency](#)

The Fight the Flood program looks to help mitigate flooding issues which impact all socioeconomic groups while also enhancing water quality, and to encourage economic growth by targeting and attracting businesses to provide flood mitigation products and services for flood-prone properties, including shorelines and buildings. When appropriate, projects should be designed not only for today's flooding challenges, but also designed for future flooding challenges by extrapolating FEMA flood risk using FEMA Insurance Studies or other appropriate methodologies.

To accomplish its stated goal, the Fight the Flood program identified three core **Objectives** that develop the program's policy framework:

Objectives

1. Provide financial products to influence consumer behavior for managing and mitigating flood risk
 - a. Offer a suite of financial products (i.e. loans, grants, insurance) with a correlation to lower interest rates and grants for shorelines under greater risk; higher rates and less grant funding for lower risk shorelines using FEMA flood zones
 - b. **When possible, leverage General Assembly legislation such as § 58.1-3228.1. Partial exemption from real property taxes for flood mitigation efforts for grant matching funds.**
2. Provide consumer to professional services connections through the Fight the Flood program
 - a. Registered consumers with a flood mitigation issue will have direct access to a pool of established resiliency professionals.
 - b. Participating companies are evaluated on a regular basis
 - c. Resiliency professional registered under Fight the Flood may provide discounted professional services to consumers in need.

3. Utilize reach-based Shoreline Implementation “Battle Plans” to facilitate multi parcel mitigation projects for economy of scale. These plans will be prepared and or reviewed by qualified professionals in the field of coastal flooding, such as Virginia Institute of Marine Science Shoreline Studies Program or plans funded under the Virginia Coastal Zone Management Program
-

I. Marketing Strategy

- A. Geographic Area of Program:** The Program shall be available to homeowners located in the Middle Peninsula Planning District Commission (“MPPDC”). The MPPDC comprises of the following member-localities: counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex; and the towns of Tappahannock, Urbanna, and West Point.
- B. Solicitation of Fight the Flood/Marketing:**
 1. Referrals from private sector contractors, design professionals, flood mitigations companies and engineers
 2. Referrals from local governments, including local wetland boards and/or other State agencies
 3. Social Media Channels, Websites, News releases, Public Information Notices, i.e. newspapers, fliers at public locations, educational displays
- C. Outcomes from FTF Participation:**
 1. Encourage homeowners to purchase flood insurance;
 2. Encourage homeowners with existing flood insurance to evaluate cost effectiveness for premium relief;
 3. Encourage homeowners to practice coastal resilience to manage flood risk and reduce damage
- D. Available FTF financial & insurance products:**

Current existing products are included in the FTF program

 1. MPPDC Revolving Loan Program Funding
 - Living Shorelines Resiliency Incentive Funding Program
 - a. Nature-based shoreline BMP construction
 - b. Coastal stormwater BMP construction
 - Septic Repair Program
 - Energy Efficiency Revolving Loan Program
 - Small Business Financing, Training, loan and grants
 - Other loans programs as available
 2. MPPDC Grants

- Grants shall be leveraged and utilized to provide protection for hazard and flood prone areas with an enhanced focus on socioeconomically vulnerable property owners.
 - a. Nature-based shoreline BMP construction
 - b. Coastal stormwater BMP construction
 - c. Residential infrastructure resiliency improvements (i.e. structures, septic systems, utilities, etc.)
- Loan Forgiveness options when available
- VCAP Grants (offered by the Soil Water and Conservation District) when available
- Other grants and grant programs as available

3. MPPDC Insurance

- Parametric insurance for living shorelines and septic systems
- MPPDC Living Shoreline Plant Insurance Program
- Other insurance products as available

E. Income Guideline: Residential participation will be based on the household income and ability to pay. Businesses shall provide documentation such as profit-and-loss statements and/or other documentation of adequate business equity to collateralize the public investment. Grant/loan awards, if available will be based on the program requirements of the source of the funds, if any.

F. Terms of Loan:

Homeowners who are eligible to receive a revolving loan from the existing MPPDC Living Shoreline Loan program (see MPPDC program design for specific requirement) shall be subject to the following terms:

1. All loans over \$3,000 shall be secured with a Deed of Trust granted to the Middle Peninsula Planning District Commissioner. Businesses may use a deed of trust, security agreement, UCC liens, etc.
2. The owner of the property must agree that, if the property is sold, transferred, or otherwise conveyed voluntarily, when the owner is living, or if the real estate ceases for any reason to be the owner's principal place of residence, any outstanding balance must be paid back to the Middle Peninsula Planning District Commission.
3. If a business is sold and the Living Shoreline Loan program debt is to be assumed, a business may carry forward the loan debt as part of the business sale, assuming approval is granted by the MPPDC prior to the sale.
 - If not, any outstanding principal (and grant) amount must be paid back to the Middle Peninsula Planning District Commission.

G. All beneficiaries must make monthly loan payments by automated clearing house debit from a valid checking or savings account.

II. Vendors: Qualifications & Expectations

- A.** The MPPDC has a fiduciary responsibility to protect the expenditure of loans/grants. Thus, it sets forth the following qualifying criteria and expectations for vendors to comply.
- B.** Qualifying businesses need not be located within the Middle Peninsula region, although we encourage and invite businesses with physical footprints within the Middle Peninsula to join.
- C.** Prospective vendors to be listed on the FTF website must match at least one of the qualifying criteria below to participate in the Fight the Flood business marketplace and have taken and completed appropriate professional training(s), from the Virginia Institute of Marine Science or other universities, colleges, government or other professional programs offering certifications or credentials related to professional trade or profession directly related to the services to be provided.
 - 1.** Class A Contractors License
 - Automatically accepted upon proof of successful project completion (project completion statement, closed permit, release of performance bond, etc.)
 - 2.** Class B or C licenses
 - Proof of permitted and completed similar jobs, at least 3 jobs within the last 24 months in a Tidewater locality.
 - 3.** Other applicable methods presented and accepted by Fight the Flood program manager.
- D.** To be listed on the FTF website, qualifying vendors shall complete the “Fight the Flood Business Survey” as provided by the MPPDC.
 - 1.** The MPPDC shall maintain a database of qualifying vendors and made available to FTF registered property owners who request financial assistance. Property owners are not required to use qualified FTF vendors but are encouraged to.
 - 2.** It is mutually understood by all parties that the homeowners select the vendor
- E.** Participating FTF qualified vendors are encouraged to:
 - 1.** Support the FTF program by offering services on discount (5%–15%+) to only those homeowners who are registered in the FTF program;
 - 2.** Carry necessary insurance such commercial general liability. Homeowners using any contractor are encourage to ask for proof of insurance: For example, Class A Contractors \$1,000,000 Class B and C \$500,000-\$250,000.

3. Acknowledgement that all financial payments from the MPPDC are released to the homeowner when approval is granted from the appropriate permitting agency denoting the completion of the work.
 - Loan proceeds can be released upon recordation of loan documents
 - Grant proceeds can be released upon satisfactory completion of the job, with proof of acceptance by the permitting agency
 - Some cost can be pre-paid under the program upon issuance of required permits or cost necessary to apply for permits such as design and engineering, etc.
 4. Commit to prompt communication with the homeowners
-

Continued next page

**Middle Peninsula Planning District Commission
Living Shoreline Resiliency Incentive Funding Program**

Virginia Revolving Loan Fund Program Design

And Guidelines – December, 2015

Amended 6/24/2020

OVERVIEW

The Program Design and Guidelines for the Middle Peninsula Living Shoreline Resiliency Incentive Funding Program (LSIP) will delineate marketing strategies, loan application and review process, environmental review, funds management and administration, and loan agreements with property (residential and business) owners.

This program will provide incentives in the form of funding and insurance for homeowners to install living shorelines in lieu of shore hardening approaches for shoreline stabilization on private property.

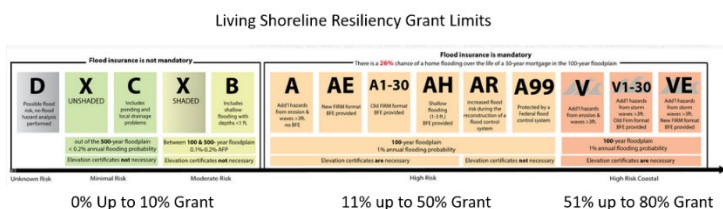
I. Marketing Strategy

- Geographic Area of Program: The Program will be available to homeowners of property located in the Middle Peninsula Planning District of Virginia. The localities of the Middle Peninsula are the counties of Essex, Gloucester, King and

Queen, King William, Mathews, and Middlesex; and the towns of Tappahannock, Urbanna, and West Point.

- Solicitation of Applications: Loan applications will be sought through the following means:
 - Referrals from private sector contractors and engineers.
 - Referrals from Local Governments or other agencies.
 - News releases, Public Information Notices-Newspapers, fliers at public locations, educational displays at Captain Sinclair Landing
- Income Guideline –Residential participation will be based on the household income and ability to pay. Businesses will provide documentation such as profit and loss statement and/or other documentation of adequate business equity to collateralize the public investment). Grant/Loan awards, if available will be based on the program requirements of the source of the funds, if any.

Unless otherwise dictated by the source of the grant funds, MPPDC will distribute grant funds on a sliding scale according to FEMA Flood insurance zones for any qualified resiliency project that meets the definition of a living shoreline found in § 28.2-104.1 of the Code of Virginia and is designed to attenuate the impinging wave climate across the sill and marsh system during significant storm events. A design will use statistical water levels and wave heights per FEMA flood zones and the fetch exposure referenced in FEMA flood insurance rate study or other qualified study.



- Terms of Loan:

All loans over \$3,000 will be secured with a deed of trust granted to the Middle Peninsula Planning District Commission. Businesses may use a deed of trust, security agreement, UCC Liens etc . The owner of the property must agree that, if the property is sold, transferred, or otherwise conveyed voluntarily, when the owner is living, or if the real estate ceases for any reason to be the owner's principal place of residence, any outstanding principal amount must be paid back to the Middle Peninsula Planning District Commission. If a business is sold and the living shoreline debt is to be assumed, a business may carry forward loan debt as part of the business

sale, assuming approval is granted by the MPPDC prior to sale. If not, any outstanding principal (and grant) amount must be paid back to the Middle Peninsula Planning District Commission

- All beneficiaries must make monthly loan payments by automated clearing house debit from a valid checking or savings account.
- 1. Interest and principal payments will commence as soon as funds are released. Final payment to owner or contractor will not be released until review by VMRC or local wetlands board staff to ensure the project has been completed consistent with the terms and conditions of the VMRC or wetlands permit.
 2. Loan interest rates will be at the WSJ Prime Rate as published at <http://www.bankrate.com/rates/interest-rates/wall-street-prime-rate.aspx>
 3. Alternatively, if the applicant has a banking relationship with a lending institution with a physical foot print within the Middle Peninsula, the program will match a verified HELOC rate to a floor of 2% rate. An additional ¼% rate reduction below a verified HELOC rate can be included for any project located in a FEMA A, AE, AH, AR, A99, VorVE flood zone designed to attenuate wave energy and storm surge.
 4. In order to close out lending on an existing MPPDC-DEQ-VRA loan, the applicant may negotiate an interest rate to facilitate the closure of any outstanding loan balance to assist the Commission with refunding of the program. A rate floor of 1.5% is established.
 5. Low income homeowners may be offered grants and lower interest rates based on household income.
- Loan Process
 - Applicant shall complete application provided by MPPDC
 - MPPDC staff can assist with application as needed
 - Loan terms and payments options will be discussed with client. Loans shall be amortized by monthly installment payments.
 - Completed application will be provided to MPPDC Closing Agent for loan processing and loan closing
 - Applicant and MPPDC will close loan. Loan Closing will take place at the office of the Middle Peninsula Planning District Commission, loan closing agents office or other agreed to location.
- Loan term:
 - Loans of \$10,000 or less will be financed for up to 60 months.

- Loans over \$10,000 to \$35,000 will have the option of financing for up to 120 months.
 - Loans over \$35,000 will have the option of financing for up to 180 months, with approval from VRA.
 - For eligible applicants receiving VRA loan forgiveness, terms of forgiveness will be included within the promissory note. If the applicant pays off the note before maturity, any outstanding loan forgiveness must be repaid and included as part of the payoff calculations. VRA funding for reach based, multi parcel projects will be handled on a case by case basis with terms included in the promissory note(s)
- Property transfer criteria: Balance of the principal of the loan shall be due and payable to The Middle Peninsula Planning District Commission upon sale or transfer of the property.
 - Identification of Prior Existing Debt:
 - No subordination of loan shall be done for equity mortgage requests by beneficiary.
 - Applications found to carry a delinquent or defaulted first mortgage shall be ineligible for assistance. Applicants whose property is financed must carry a current first mortgage in good standing. This mortgage must have been current for at least the 12-month period prior to application or since inception of mortgage if in existence less than 12 months.
 - Size of Loan: Loans shall not be less than \$1,000.
 - Fees and Service Charges:
 - Application Fee-\$40 required at time of application.
 - Administrative Fee – To be determined based on cost of necessary documentation and closing costs. May be amortized with loan funds.
 - Late Fee-5% charged on unpaid payment due applies when 7 days past due date of payment.
 - Security: Individual property owners receiving loans will sign a promissory note for the term of the loan. Loans over \$3,000 are to be secured by a Deed of Trust.

- Financing, Permits, Inspections, Contractor Selection and Certification, Disbursement of Funds

The Middle Peninsula Planning District Commission Living Shoreline Incentive and Funding Program will authorize VRA financing of any project not prohibited by any local ordinance and approved by VMRC or the applicable local wetlands board that satisfies the definition of a living shoreline consistent with § 28.2-104.1 of the Code of Virginia.

If required by either the permitting agency or terms of a grant award, monitoring of the site, absent other requirements will be required for 3 years after installation following protocol elements outlined in Milligan et al 2019. Monitoring cost can be financed as part of the project.

Applicants are encouraged to review the MPPDC Fight the Flood Program Design for access to information related to contractor services

Contractor may request partial reimbursement payment for ordering of materials necessary for the job. Pre-draws will collect interest at the rate agreed to in the promissory note. Accrued interest for pre-draws will be added to the final note payment. Principal and interest payments will commence when the project has been completed.

Final funds will be disbursed to homeowners/contractor only after acknowledgement by local wetlands board and/or VMRC of satisfactory completion of projects.

Homeowner/Contractor shall provide to MPPDC a statement of final project completion

- Insurance Program: Dependent on securing the necessary funding, the Middle Peninsula Planning District Commission Living Shoreline Incentive and Funding Program will “insure” the plants of eligible living shoreline installations for up to two (2) years following initial construction dependent on funds available in the insurance pool program at the time of claim. In the event the plants die, the reason must be explained for the need to be replaced. If applicable, the program will provide grant funds necessary to purchase and replant the same or similar plants in any installation that was previously funded by the program. This insurance can be utilized up to 2 times per project as long as insurance funds remain in the program. All claims must be certified by program partners (VIMS/VMRC)
- Parametric Living Shoreline Insurance policies can be financed as part of the loan package. The applicant may choose how many years of insurance to finance.

II. Loan Application and Review

- Application Guidelines:

- Income Eligibility: An applicant shall complete an Income Eligibility worksheet to determine income qualification for determination of ability to repay loan.
 - Application Fee: A \$40 application fee shall be charged at the time of application. The fee shall be nonrefundable.
 - Place and Time of Application: Applications are available at the offices of the Middle Peninsula Planning District Commission,
Saluda Professional Center, 125 Bowden Street,
Saluda, Virginia between the hours of 8:30 a.m. to 4:30 p.m.,
Monday through Friday, except holidays, by mail request at PO
Box 286, Saluda VA 23149, and by phone at (804) 758-2311. A
downloadable application is also available at www.mppdc.com
- Review and Approval of Applications:
1. Staff Review- The staff of the Middle Peninsula Planning District Commission will review each application for Completeness and to verify income eligibility.
 2. Project Management Committee- The Middle Peninsula Planning District Commission will designate a committee to review and approve each application. If grant funds are available the Committee will determine eligibility for grant funding following the criteria required by the funder or the program design. The Committee shall consider the following in determining project priorities:
 - Need for shoreline management at the project site (in consultation with VMRC staff)
 - FEMA Flood zone
 - Number of projects funded in a jurisdiction - Localities that have never received funding for a project will be given priority
 - Ability to pay – the ability of the homeowner to repay the loan
 3. The MPPDC Board may authorize the Executive Director to complete all loan agreements and notes pursuant to approved loans.

III. Administration of VRA Financing Funds

- Security: The Living Shoreline Incentive Funding Program will secure the loan with the Virginia Revolving Loan Fund through the revenues generated through loan payments made by individual property owners and through investment of capital funds.

1. Interest Security- The Program will offer loans at interest rates of WSJ Prime as published at www.bankrate.com

B. Alternatively, if the applicant has a banking relationship with a lending institution with a physical foot print within the Middle Peninsula, the program will match a verified HELOC rate to a floor of 2% rate. An additional ¼% rate reduction below a verified HELOC rate can be included for any project located in a FEMA A,AE,AH,AR,A99,VorVE flood zone designed to attenuate wave energy and storm surge

C. In order to close out lending on an existing MPPDC-DEQ-VRA loan, the applicant may negotiate an interest rate to facilitate the closure of any outstanding loan balance to assist the Commission with refunding of the program. A rate floor of 1.5% is established.

2. Principal Security- The MPPDC Program will borrow funds from the Virginia Resource Authority under terms and conditions agreeable to each party. Historically, VRA has loaned the Commission \$250,000 for a period of 15 years at a 0% interest rate, but terms and conditions will vary as the Commission recapitalizes its program over time.
3. Total Annual Security/Annual Debt Payments- At program start up, annual debt payments will be \$16,667, to be paid in semi-annual payments of \$8,333. Future annual debt payments will vary based on recapitalization of the fund and terms offered by VRA. MPPDC will manage the loan fund and portfolio to ensure repayment of indebtedness.
4. MPPDC will establish a Loan Loss Reserve in the amount of \$16,667 or an amount equal to one (1) year debt service payments. These funds will be designated as "Restricted Cash – MPPDC Series 2017 Reserve Fund" on the MPPDC balance sheet until such time as the loan is repaid in full.

B. Administration:

1. The Middle Peninsula Planning District Commission will dedicate staff personnel to administer the Program. The Executive Director will provide supervisory guidance to the program.
2. The MPPDC will work closely with the State agencies involved in the protection of water quality. The Department of Environmental Quality and the Virginia Marine Resources Council will provide project guidance and assist through the permitting process.

3. The MPPDC Board will designate a Project Management Committee to provide input into the loan review and financial management aspects of the Program. The Board will also be involved in oversight of the entire program.
4. Fund Administration-The Program will invest any undisbursed portion of the loan proceeds with banks operating in the region or the Commonwealth of Virginia Department of the Treasury Local Government Investment Pool. Revenues from loan payments will be invested in said accounts providing liquidity to coincide with debt payments to the VRLF. Interest earnings from the Program will be available for administration costs and loan security. All revenues available after debt payments and administration costs may be utilized to provide additional assistance through the form of additional loans and/or grants to qualified applicants.

IV. Notification of Changes to the Local Program

The MPPDC will notify the Department of Environmental Quality and the Virginia Resources Authority of any anticipated changes to the Program Design at least 60 days prior to the effective date of such changes.

Population

*Provide **population data** for the local government in which the project is taking place, including **identification of any low-income geographic area** and the **estimated number of residents that will be impacted by this project**. Provide more detailed versions of those outlined as General Requirements.*

Gloucester County's 2020 Census **population** was 38,711. The County is experiencing a 5% growth rate, which will place and increased burden on the public beach. The County's demographic trends match those of the MPPDC region.

The map below (**Figure 1**) shows the proposed project location (red dot) is within an Opportunity Zone and therefore meets the DCR definition of a "**Low-income Geographic Area**."

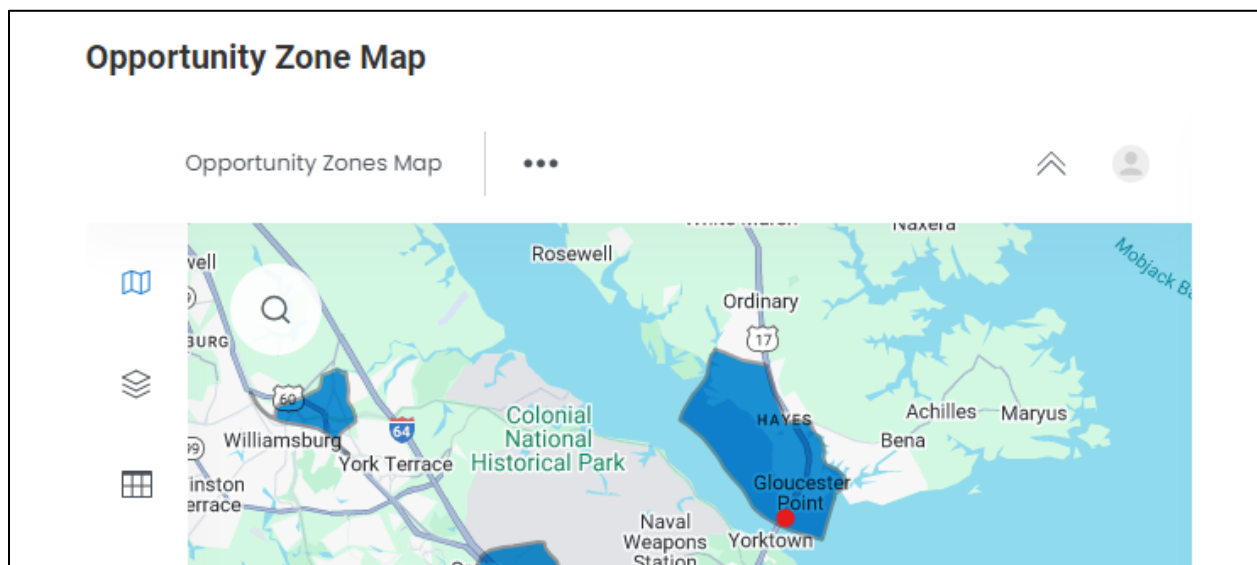


Figure 1 – Map Illustrating the Gloucester Point Beach Park's Location (red dot) within a designated Opportunity Zone (blue shaded area).

Social vulnerability is the ability of individuals or groups to prepare for and recover from hazards, like flooding. The Virginia Social Vulnerability Index (SVI) Viewer indicates Gloucester Point Beach Park has a "Low Social Vulnerability" score (**Figure 2**).

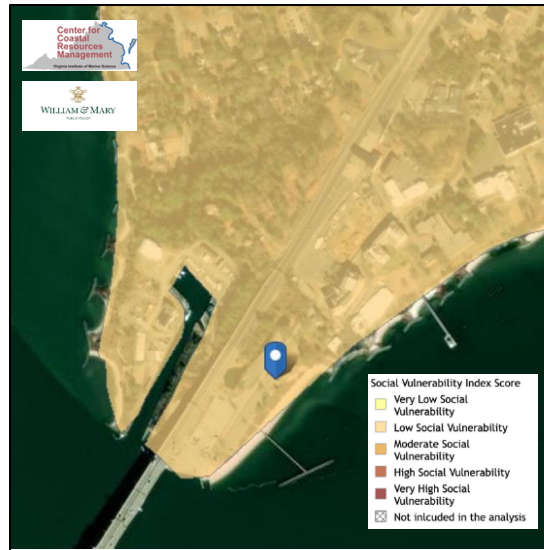


Figure 2 - Map Illustrating the Gloucester Point Beach Park's Location (blue dot) within a Low Social Vulnerability Index Score area.

Gloucester Point Beach Park provides access to the only public beach in the County. While some County residents have private access to waterways along the miles of shoreline along the York River and Chesapeake Bay, this Park ensures public access for all. The fishing pier attracts underserved individuals who cannot afford to visit other public and private sites. The County covers the cost of a blanket fishing permit, and the Park does not charge pier access or parking fees, which makes it accessible to residents and visitors from areas with fewer resources. In some cases, individuals fish at the park to supplement their food supply and support their livelihood. For many low-income and underserved populations, this is a key site to access the water and fish without needing to pay for a personal license. By enhancing this beach and mitigating flood impacts, the experience for all park users will be improved.

Gloucester Point Beach Park, as the primary public waterfront facility, is envisioned to serve the next generation of users as a thriving recreational and public waterfront access site for the County and the wider region. Protecting the beach and park from the impacts of flooding will enable the area to reach its full potential, prolonging and enhancing utilization by both residents and visitors. Given the area's critical role in the seafood industry, the proposed project will also mitigate potential impacts on the industry and local economy as a whole.

The Park is the County's most popular public recreation site that also supports recreational as well as commercial fishing. It is the only public beach in the County. The site supports a wide range of beach, boating, and fishing recreational activities by providing a concession room, public restroom facilities, an accessible shoreline, free public fishing pier, two boat landings, a play area, paved parking areas, and open green space spanning five acres.

Gloucester Point Beach Park is both a highly popular and critical resource for recreation and the local economy. The Park was consistently ranked as "Very Important" in the 2016 Needs Assessment conducted by GreenPlay, LLC, where open-ended comments indicated that the beach needs to be cleaned up and improved. General improvements also ranked highly as a priority for County

maintenance. In 2023, tourism in the Gloucester County included \$47.3 million total impact, which has been steadily increasing from \$33.2 million in 2016. Most of this is related to ecotourism, which includes aquaculture tours, canoeing and kayaking tours, oyster harvesting tours, and wildlife charter cruises.

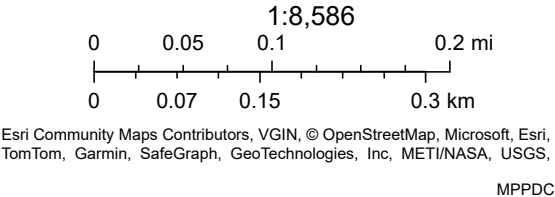
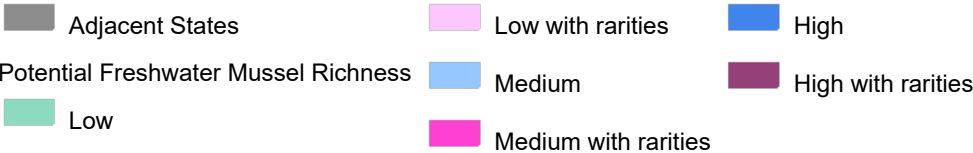
Recent growth suggests ecotourism is an emerging opportunity in the region as sales grew at an average annual rate of 3.2 percent between 2014 and 2019. For Gloucester County specifically, the marine economy – which consists of businesses dependent on marine resources – accounts for 11.4% of the total employment in the County, generating approximately \$19 million in wages (according to NOAA Coastal County snapshots). It should also be noted that these economic activities are more significant during the peak season, primarily in the warmer months.

Based on these factors, the **estimated number of residents that will be impacted** by this project **includes all of the residents of Gloucester County (38,711) and the residents and businesses in surrounding counties that rely on the recreational area and its resources.**

Gloucester Point Beach Park



October 28, 2024



Alternatives

*If the project proposed **does not** employ a nature-based or hybrid solution and the total project cost is greater than \$2 million, describe at least one alternative that could reasonably address the issue identified. Please also consider the No Action Option as a third alternative as part of the analysis. Explain these alternatives and the reason the proposed project was selected. Provide more detailed versions of those outlined as General Requirements.*

The proposed living shoreline project represents the state's preferred nature-based flood protection solution for mitigating impacts of tidal flooding, storm surge, and sea-level rise. A living shoreline will help reduce the effects of exceptional floods and sea-level rise for 50 years or more. Additionally, since a living shoreline is feasible at this location, a hardened or non-living shoreline is not permissible per state regulations, thus limiting the alternatives to implementing a living shoreline or doing nothing.

Under the "do nothing" alternative, the site and public infrastructure will be compromised, resulting in degradation of the site and loss of public assets.

Proximity to Floodplain and Potential for Recurrent Flooding - Middle Peninsula PDC Round 5 VA Community Flood Preparedness Fund Proposals

I have reviewed the proposed site locations and materials provided by MPPDC staff for five applications to be submitted under Round 5 of the VDCR CFPF:

- Gloucester Point Beach Park Resilience Site Design and Construction, 1255 Greate Rd, Gloucester Point, VA 23062 (37.24634, -76.50287).
- Mathews County Haven Beach Living Shoreline Construction, State Rte 645, Diggs, VA 23045 (37°26'25", -76°15'28").
- Captain Sinclairs Recreational Area Public Mixed-Use Structure Flood Protection Project, 9524 Whittaker Drive Ware, VA 23061 (37.32546, -76.427569).
- Parametric and Flood Insurance Accelerator, the entire MPPDC region, including the counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex and the towns of Tappahannock, Urbanna, and West Point. This is a project to advance a program. The only construction to occur will involve the deployment of fixed water level gauges within regulatory floodplain and no adverse impacts anticipated.
- Town of West Point Coastal Resilience Master Plan, West Point, Virginia 23181 (37.53666, -76.79994). The study area boundary includes the town's peninsula created by the Pamunkey River and Mattaponi River to Rt. 33 (locally known as 14th Street and the W. Lewis B. Puller Memorial Highway) and the papermill immediately to the northwest of Rt.33 along the Pamunkey River. This is a planning project that does not include construction.

Based on the FEMA FIRMettes provided, all project sites, or portions of sites, are located within a regulatory floodplain and subject to recurrent flooding.

Denise Nelson, PE, CFM, ENV SP, LEED AP
Sustainable and Resilient Infrastructure Engineer

[Denise Nelson Advising, LLC](#)

804-363-7437

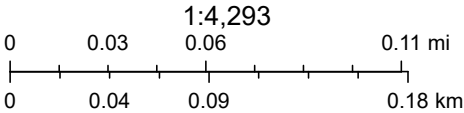
DNAdvising@gmail.com

Gloucester Point Beach Park

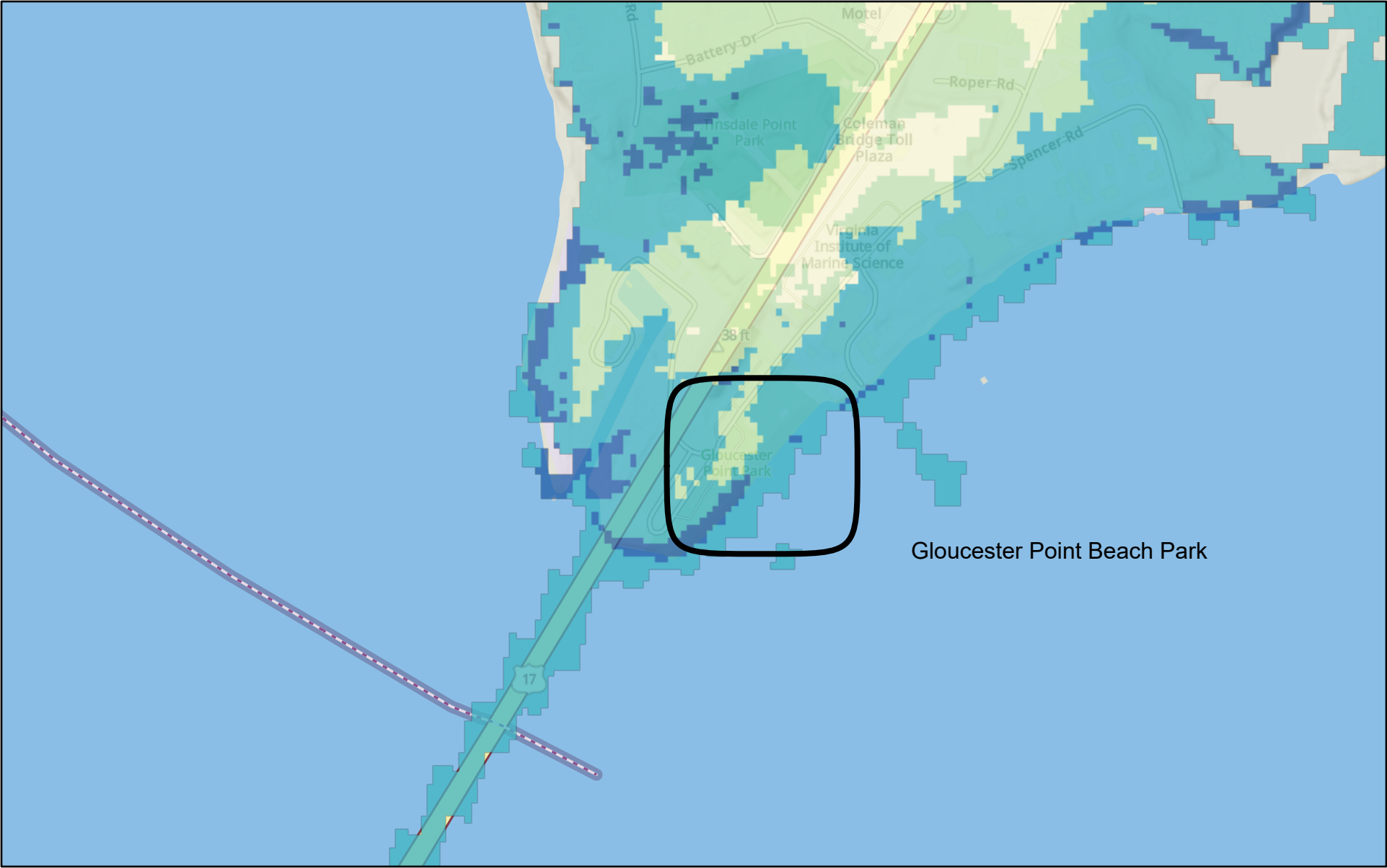


October 28, 2024

- Adjacent States
- Scenic Preservation Category



Gloucester Point Beach Park



October 31, 2024

Adjacent States

Watershed Impact Model

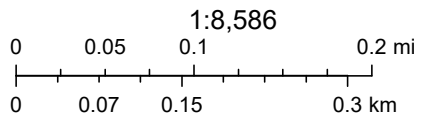
1 - 20 (Lowest Impact)

21 - 40

41 - 60

61 - 80

81 - 100 (Highest Impact)



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MPPDC