

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

**Application Form for Grant Requests for All
Categories – Round 2**

I. ORGANIZATIONAL INFORMATION

Project Title: Town of Tappahannock Flood Prevention and Protection for Hoskins Creek

Name of Local Government: Middle Peninsula Planning District Commission

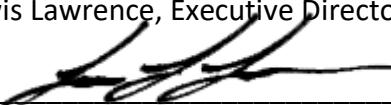
Category of Grant Being Applied for (check one):

- Capacity Building/Planning
 Project
 Study

NFIP/DCR Community Identification Number (CID): 510049

If a state or federally recognized Indian tribe, Name of tribe: NA

Name of Authorized Official: 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 Person (If different from authorized official): Jackie Rickards, Senior Planning Project Manager

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: (215) 264-6451

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 No

Categories (select applicable project): Project Grants

Project Grants (Check All that Apply)

- 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.
- Wetland restoration.
- Floodplain restoration.
- Construction of swales and settling ponds.
- Living shorelines and vegetated buffers.
- Structural floodwalls, levees, berms, flood gates, structural conveyances.
- Storm water system upgrades.
- Medium and large-scale Low Impact Development (LID) in urban areas.
- 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.
- Dam restoration or removal.
- Stream bank restoration or stabilization.
- Restoration of floodplains to natural and beneficial function.
- Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.

Location of Project (Include Maps): Town of Tappahannock - Please see the attached corresponding maps for this application.

NFIP Community Identification Number (CID#): 510049

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 Zone

Flood Insurance Rate Map Number(s) (If Applicable): 51057C0165F

Total Cost of Project: **\$144,172**

Total Amount Requested: **\$115,337**

II. SCOPE OF WORK NARRATIVE

INTRODUCTION.

This proposal requests funding to assist the Town of Tappahannock with the design and construction of a nature-based shoreline design solution and draft JPA permit application to reduce the impacts of storm events, flooding, and wetland loss for a publicly owned waterfront parcel providing access to Hoskins Creek and the Rappahannock River. The Town was recently the recipient of a VDCR VA Land Conservation Fund grant to help purchase and conserve the property to preserve critical habitat and ensure public access to the Town's waterfront. The Town intends to enhance the property for public use of the waterfront including restoring coastal habitats that have been compromised at the site by continued and accelerating erosion and invasive plants. Securing DCR Flood Funds and constructing a shoreline solution are a critical first step to meeting these objectives for the site and complementing the recent DCR investments at the site. The project also will study flood protection needs of a Town-owned sewer pump station at the shoreline which is a critical piece of public infrastructure that is highly vulnerable to coastal flooding and shoreline erosion. The project is located in a low-income area and an Opportunity Zone.

Risks to natural hazards are increasing. Population growth along coastlines worldwide, in addition to technological and infrastructural development, inherently results in a concomitant increase in places prone to disasters. Modern society relies upon government for effective prevention and protection strategies for continued resilience and sustainability.

Natural hazards are hazards that exist within the natural environment and are considered "acts of God," and consist of atmospheric, geologic, hydrologic, seismic, and biologic agents. Such hazards include flooding, drought, hurricanes, landslides, wildfires, and more. They are thought to be unpreventable and are associated with a perceived lack of control. As a result, the ability to manage risk to natural hazards greatly varies due to differences in background. Therefore, the identification of hazards is the foundation of effectively dealing with and avoiding risks. Because of climate change, many natural hazards are expected to become more frequent and more severe. Reducing the impacts these hazards have on lives, properties, and the economy is a top priority for the Middle Peninsula PDC and the Middle Peninsula Fight the Flood (FTF) program.

The 2018 United States National Climate Assessment noted that global climate model predictions, though imprecise, suggest an increased frequency of strong hurricanes (Categories 4 and 5) in the Atlantic Basin, including the Caribbean. It also includes a range of sea-level rise predictions with significant impacts, especially together with high tide flooding. Other estimates include more frequent and intense droughts with microburst and deluge events. This is especially the case for the Coastal Plain area of Virginia.

The Federal Emergency Management Agency (FEMA), Virginia General Assembly, Virginia Department of Conservation and Recreation (DCR) Floodplain Management Program,

and the Middle Peninsula Planning District Commission (PDC) all recognize that natural hazards pose a serious risk to all levels of government including states, localities, tribes, and territories and the citizens which reside there.

Until recently, most flood risk management involved conventional engineering measures. These measures are sometimes referred to as “hard” engineering or “gray” infrastructure. Examples include building embankments, dams, levees, and channels to control flooding. Recently the concept of “nature-based solutions”, “ecosystem-based adaptation,” “eco-DRR,” or “green infrastructure” has emerged as a good alternative or complement to traditional gray approaches.

Nature-based solutions make use of natural processes and ecosystem services for functional purposes, such as decreasing flood risk or improving water quality. These interventions can be completely “green” (i.e., consisting of only ecosystem elements) or “hybrid” (i.e., a combination of ecosystem elements and hard engineering approaches). Nature-based solutions can help mitigate flood (the focus of this document), drought, erosion, and landslide. In addition, they may help decrease vulnerability to climate change while also creating multiple benefits to the environment and local communities. These include sustaining livelihoods, improving food security, and sequestering carbon. Such solutions can be applied to river basins (e.g., reforestation and green embankments), coastal zones (e.g., mangroves and wetlands), and cities (e.g., urban parks).

There is increasing momentum for the use of nature-based solutions as part of resilience-building strategies, sustainable adaptation, and disaster risk management portfolios. Awareness of nature-based solutions from communities, donors, and policy- and decision-makers is growing. Further, investors and the insurance industry are increasingly interested in nature-based solutions. From a climate change perspective, ecosystem-based adaptation has been highlighted as a priority investment area as noted in this DCR opportunity.

PROJECT INFORMATION.

This project proposes to design and construction a nature-based solution which utilizes and incorporates sustainable planning, design, environmental management, and engineering practices that weave natural features and/or processes into the built environment to promote adaptation and resilience at the Hoskins Creek property location in the Town of Tappahannock. This project will design and construct a nature based or hybrid shoreline solution for 125 linear feet of shoreline. This proposal incorporates natural features and/or processes in efforts to combat climate change, reduce flood risks, improve water quality, protect coastal property, restore, and protect wetlands, stabilize shorelines, reduce heat, adds recreational space, and more. Nature-based solutions offer significant benefits, monetary and otherwise, often at a lower cost than more traditional infrastructure. According to FEMA Building Community Resilience with Nature Based Solutions, these benefits include economic growth, green jobs, increased property values, and improvements to public health, including better disease outcomes and reduced injuries and loss of life.

This project will be a partnership between the Middle Peninsula PDC and the Town of Tappahannock. See the community support letter in **Appendix 1**.

- A link or to the Middle Peninsula PCD's Approved Regional Flood Resiliency Plan (2021) can be found at: https://fightthefloodva.com/wp-content/uploads/2021/08/Approved-8_19_DCR-packet_letterandplan.pdf.
 - Please see Page 3-5, which notes the need to respond to emerging flood challenges.
- A link to the Middle Peninsula PDC's All Hazards Mitigation Plan (2016) can be found at:
https://www.mppdc.com/articles/reports/AHMP_2016_FEMA_Approved_RED.pdf.
 - Please see Section 4 (page 25), which includes historical hazard data within the region.
- A link to the Town of Tappahannock's Comprehensive Plan can be found at:
<https://img1.wsimg.com/blobby/go/20120fbb-c962-454c-8dcf-434b6341ec7b/downloads/comp-plan-revised-v4.pdf?ver=1634741047790>.

The Middle Peninsula is the second of three large peninsulas on the western shore of the Chesapeake Bay in Virginia as seen in **Figure 1**. It lies between the Northern Neck and the Virginia Peninsula. The region is predominantly rural, with large, scattered farms and forested tracts; close-knit waterfront communities; an active regional arts association; broad-based civic involvement; and an excellent transportation infrastructure that provides easy access to urban markets. The area contains 3.2% of Virginia's land mass but only 1.1% of the Commonwealth's total population of approximately 93,000 as seen in **Figure 2**.

Figure 1. Middle Peninsula Geographic Area

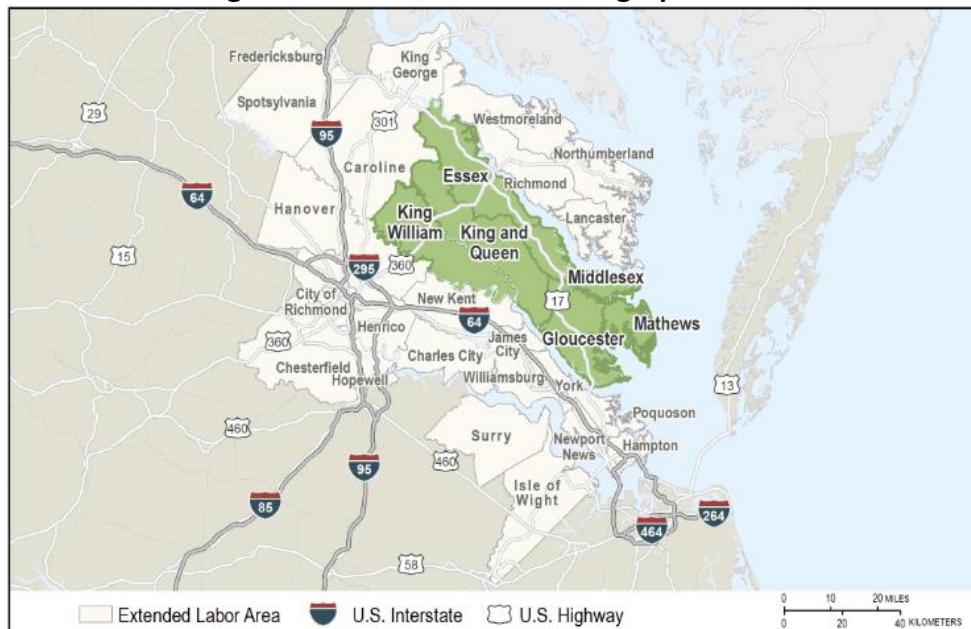


Figure 2. Middle Peninsula Population

CID #	US Census 2020 Population	2020 Total
510048 (Tapp 510049)	Essex (Includes Town of Tappahannock)	10,599
510071	Gloucester	38,711
510082	King and Queen	6,608
510304 (West Point 510083)	King William (Includes Town of West Point)	17,810
510096	Mathews	8,533
510098 (Urbanna 510292)	Middlesex (Includes Town of Urbanna)	10,625
MPPDC Total		92,886

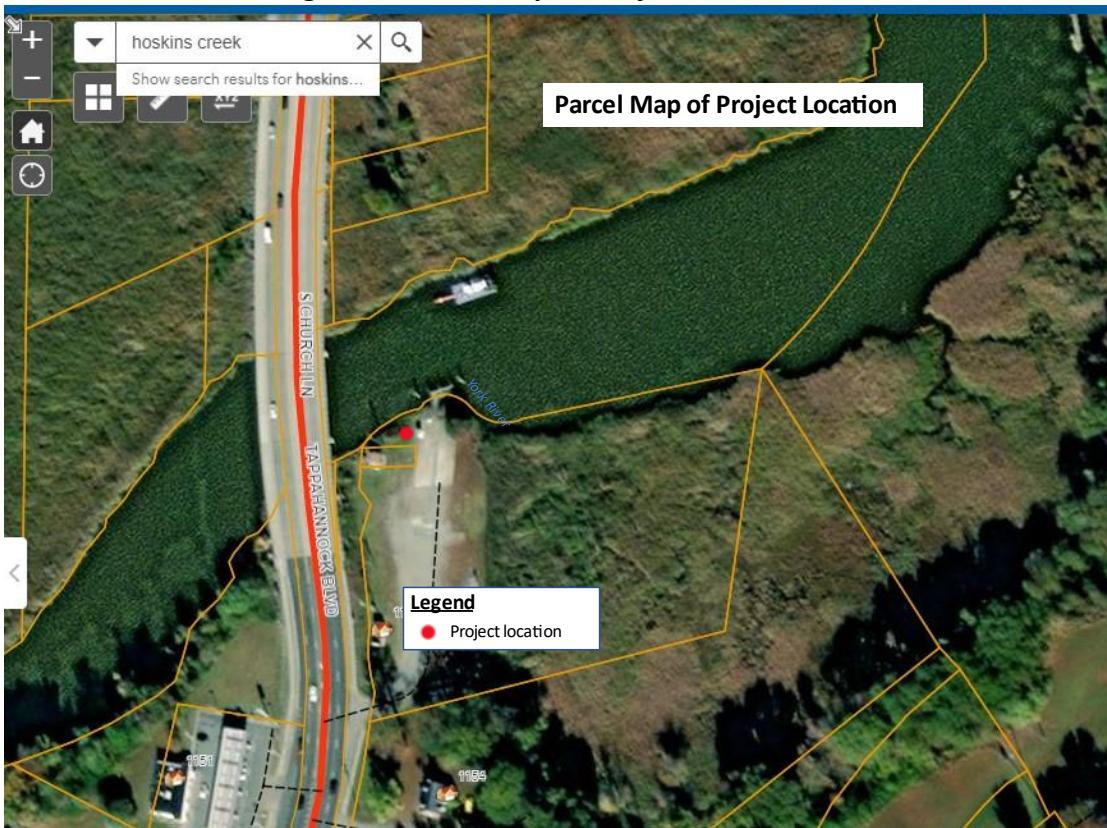
This project proposes to design and install a nature based or hybrid shoreline solution on one public property on Hoskins Creek in the Town of Tappahannock as found in **Figures 3 and 4**.

Figure 3. Town Map of Project Location

This is the coverage area for the Aerial Photo Map



Figure 4. Parcel Map of Project Location



The Town of Tappahannock is located in Essex County in Virginia's Middle Peninsula and is an agriculture, forestry, and water-based economy. The Town is comprised of 2.67 square miles of land and 0.008 square miles of shorelines. Based on 2019 Census Data estimates, the Town of Tappahannock's population totaled 2,375. According to DCR guidelines, a portion of the Town is considered a low-income geographic area. The Town is also included in an Opportunity Zone. In **Figure 5**, the green areas qualified as low-income "community" areas meeting the 80% Household limits based on US census household income data or are qualified Opportunity Zones.

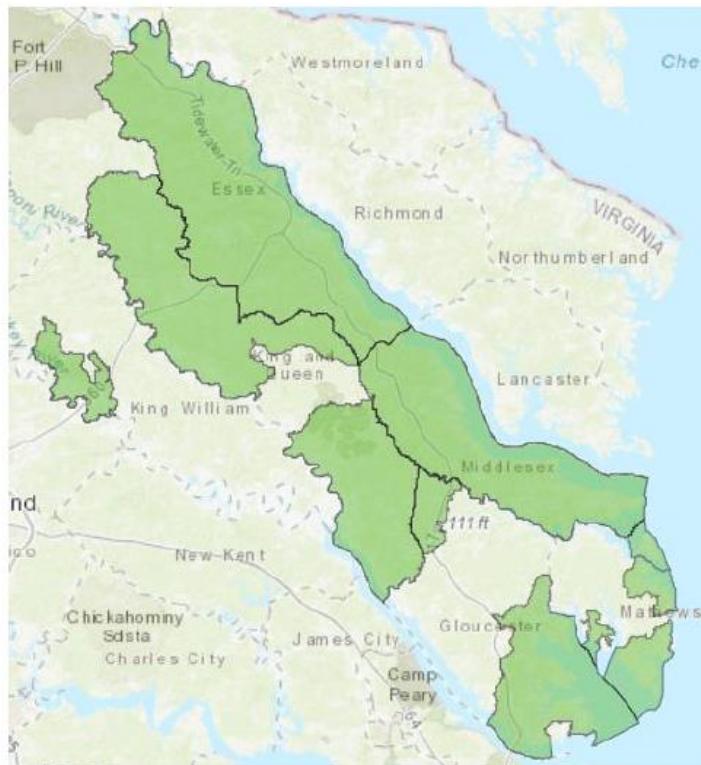
Figure 5. Map of Middle Peninsula Qualifying Low Income Geographic Areas

Each county had its 'Eligible Household income' calculated by multiplying the County's median Household income by .8. This resulted in the following numbers:

	Essex	Middlesex	Mathews	King William	King & Queen	Gloucester
Median household income (in 2019 dollars), 2015-2019	\$51,954	\$57,438	\$64,237	\$66,987	\$63,982	\$70,537
Eligible Household income	\$41,563	\$45,950	\$51,389	\$53,590	\$51,186	\$56,430

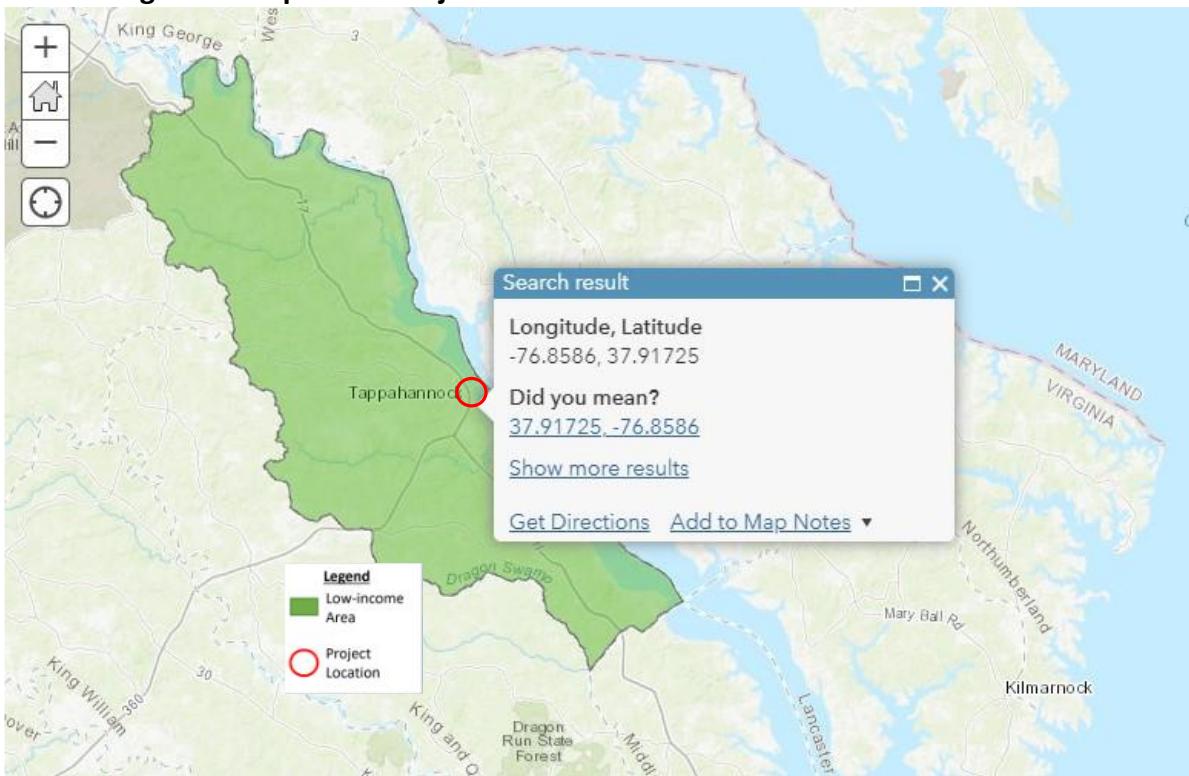
Note: Per 7/15/2021 DCR Webinar, comparing state Household income to locality is permissible to determine if the entire locality is LMI.

The following is an overview of the Regional Eligibility map. Green areas are qualified low-income "community" areas meeting the 80% Household limits based on US census household income data or are qualified Opportunity Zones.



Please see **Figure 6** for a zoomed in map of the project location and the green low-income area overlay. This shows that the project location is within the low-income area. The project location is also within an established Opportunity Zone.

Figure 6. Map of the Project Location within the Green Low-Income Area



According to the VDAPT Virginia's Social Vulnerability Index Score, this project location has a moderate social vulnerability score as seen in **Figure 7**; however, it also is important to recognize that there are other social vulnerability models which reflect higher social vulnerability within this project area. For instance, according to FEMA's National Risk Index (<https://hazards.fema.gov/nri/map>), which assesses vulnerability at a census tract level, the social vulnerability of the Town, as located in Essex County, is considered to be a relatively high level of vulnerability as seen in **Figure 8**.

Figure 7. Virginia's Social Vulnerability Index Score Map of the Project Location

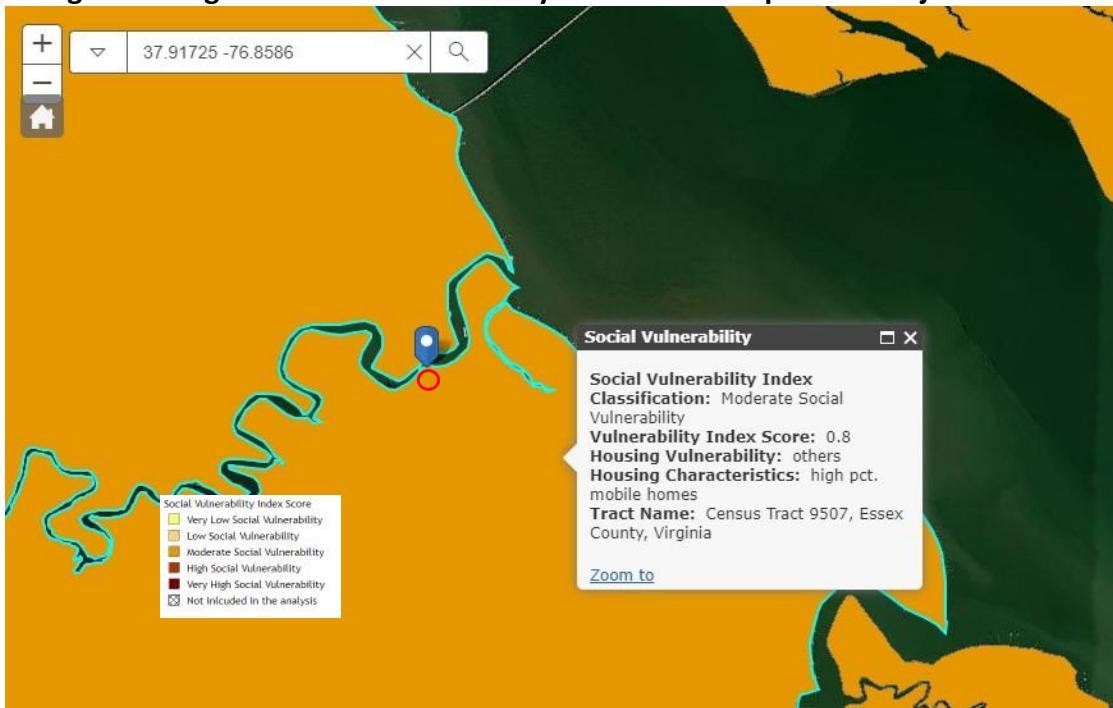
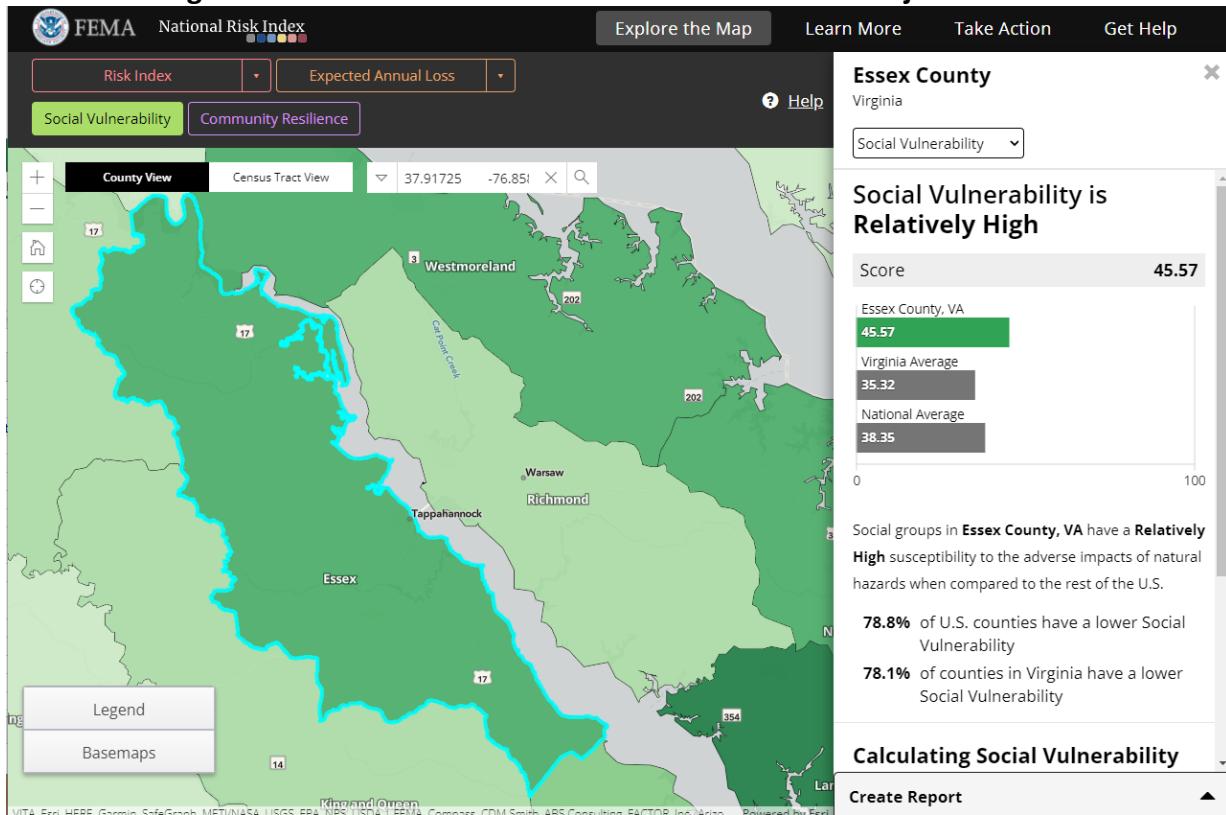


Figure 8. FEMA Nation Risk Index of Census Track of Project Location



The project is located at 1154 Tappahannock Boulevard, in Tappahannock, VA 22560 (-76.8586,

37.91725). The property is currently being acquired by the Town of Tappahannock, with an anticipated secure date of 11/3/2021. The Town has had the property under contract since 10/20/2020. The shoreline has been actively eroding for a long time due to storms and high tides (shoreline is approximately 125 feet).

The site is a historic ferry landing and working waterfront that the Town wishes to preserve for public access to the waters of Hoskins Creek and the Rappahannock River. The Town intends to use the property for public canoe/kayak launches and take-outs as well as transient boating with the installation of a pier/dock for boat access to the property. These recreational activities will not be possible if there continues to be shoreline deterioration and destruction in the future.

The Town's sewer pump station is located on the site, and it is at risk to coastal flooding and severe erosion that continues to occur even with rip rap there in place. This poses a major threat to a critical piece of Town infrastructure, and should this infrastructure fail, it poses significant public health risks to the citizens of the Town and the coastal habitats of the Rappahannock River and Chesapeake Bay not to mention the economic and social implications to daily functions with Town.

Invasive phragmites is present adjacent to the site and along the shoreline. A nature-based solution is desired to manage the continued spread of the invasive grass and establishing a shoreline solution with native grasses which provide optimal benefits with regards to coastal habitat and visitors and users of this public property.

See accompanying pictures below for current site conditions.

Southward view showing Route 17, parking area, dock, sewer pump station, and Hoskins Creek waterfront, and wetlands. The Town is seeking to redevelop this parcel for enhanced public access to the water and restore and protect the shoreline with a living shoreline. The ★ identified the project location.



Northward view showing Route 17, parking area, dock, sewer pump station, and Hoskins Creek waterfront, and wetlands. The Town is seeking to redevelop this parcel for enhanced public access to the water and restore and protect the shoreline with a living shoreline. The  identified the project location.



Northward view of the property entrance from Route 17. The sewer pump station and Hoskins Creek waterfront are visible as well.



View of Hoskins Creek and shoreline at the site.



Photograph showing the adjacent shoreline covered with invasive phragmites. Funding is requested to prevent the continued spread of this invasive plant to the shoreline area to be targeted with a living shoreline.



View of the Route 17 bridge over Hoskins Creek and more invasive phragmites adjacent to the shoreline.



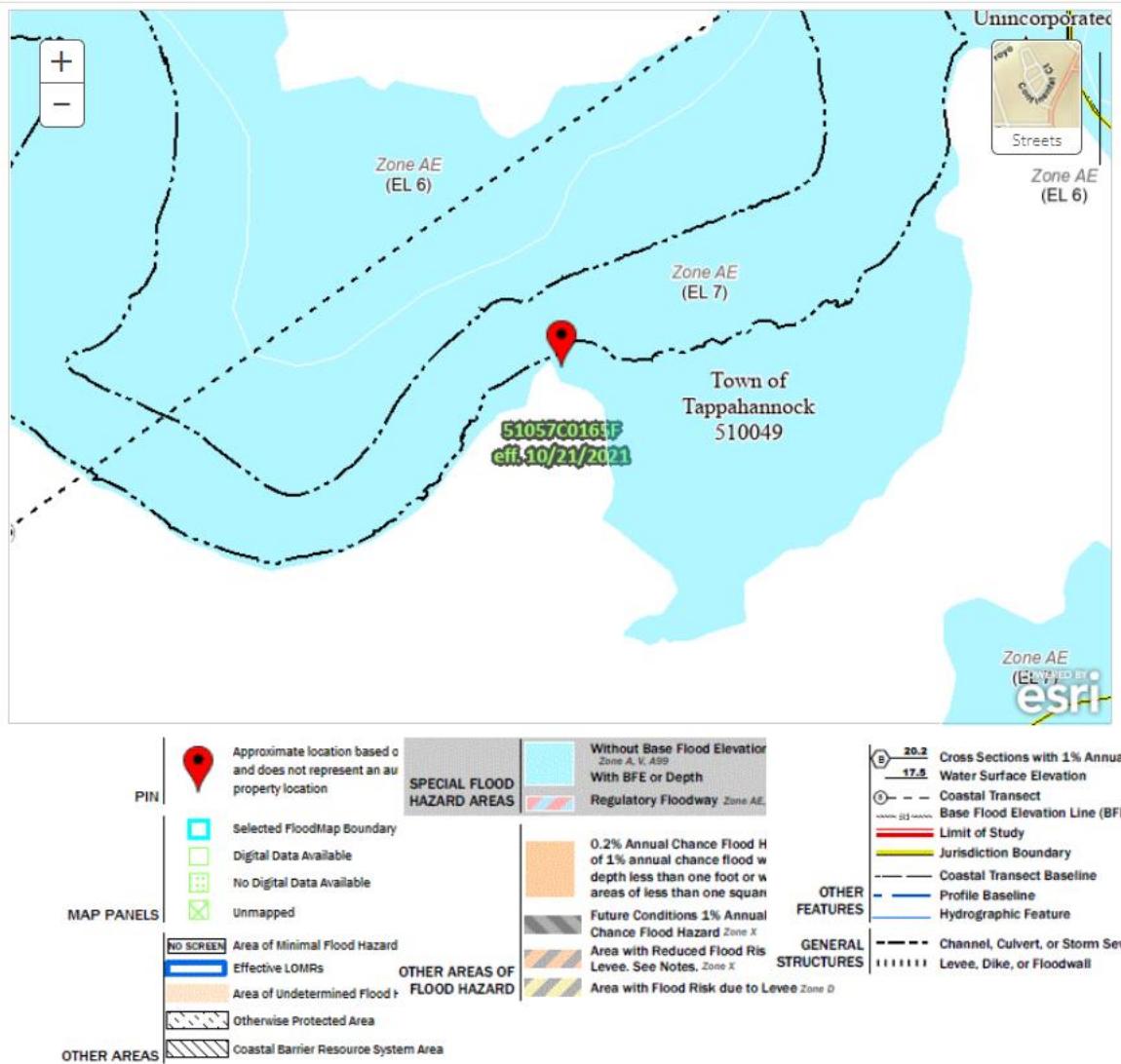
Photo of the Town's sewer pump station and proximity to the Hoskins Creek shoreline.



Please see **Appendix 2** for additional property photos.

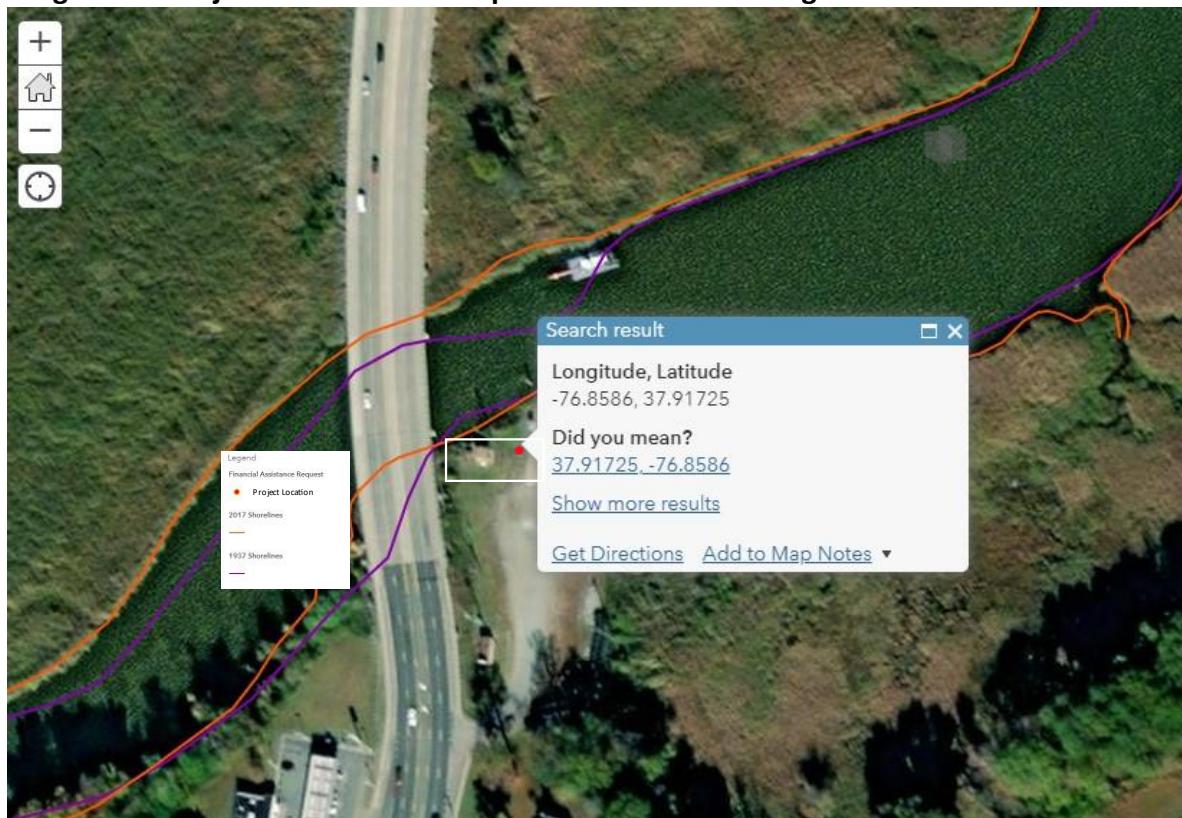
This site is located within the AE flood zone as seen in **Figure 9**. Please see **Appendix 3** for the FIRMettes (last mapped 10/21/2021).

Figure 9: Map of FEMA Flood Zones



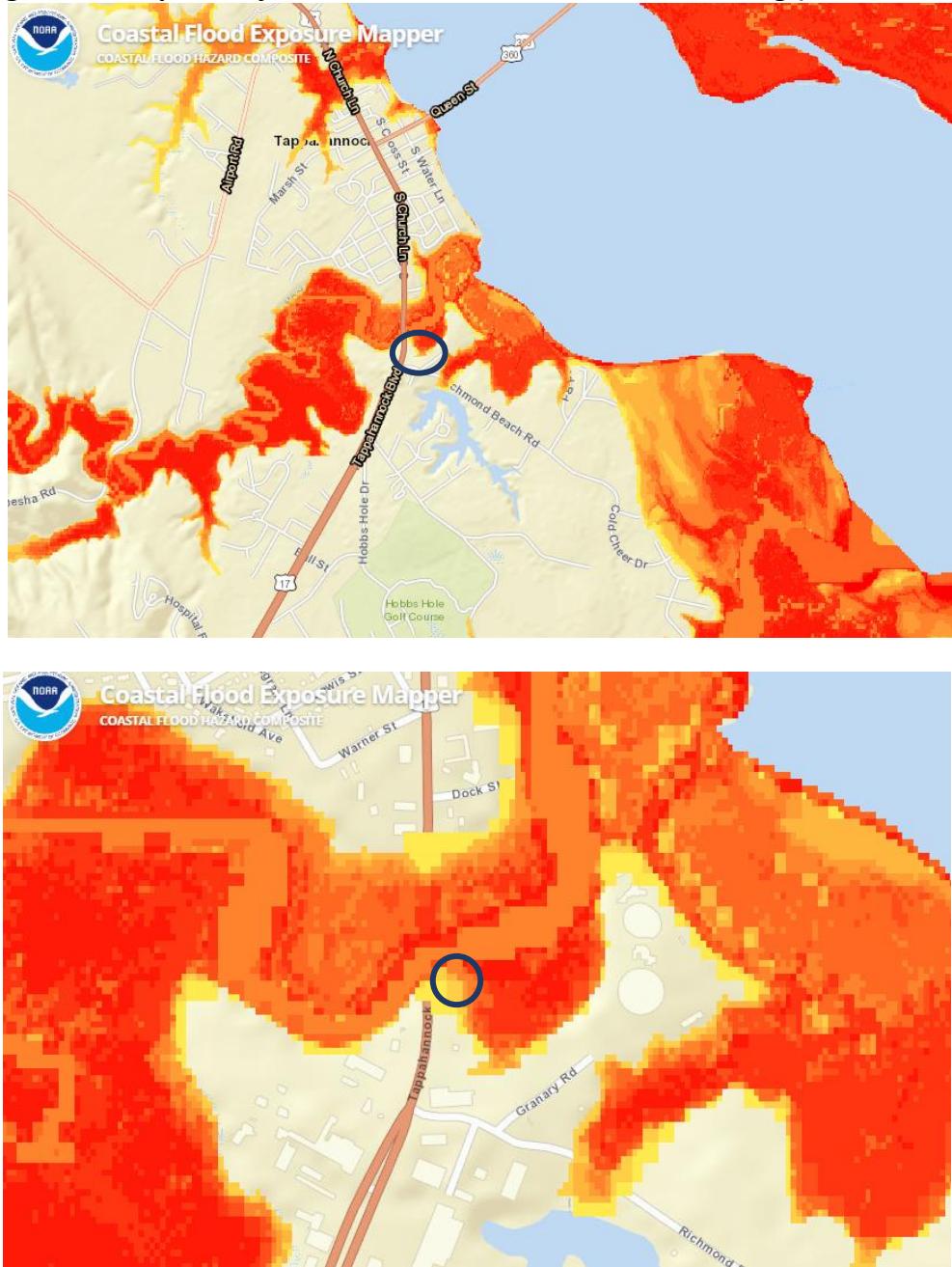
Due to the project site's proximity to the water and relatively low elevation, the site has an extensive history of experiencing flooding events that have resulted in significant impacts to infrastructure and the environment. Based on the historical shoreline data from the Virginia Institute of Marine Science Shoreline Studies Program, **Figure 10** shows the 1937 and the 2017 shorelines. From the figure one can see the change in the shoreline at the project location and the approximate loss of 3,753.5 square feet of shoreline. The project location has and continues to be impacted by tropical, sub-tropical, and nor'easter events. **Appendix 4** lists 61 storm events and provides a map with the project location. Without the flood protection measures proposed, the land, habitat, and infrastructure will be compromised, resulting in degradation of the environment and revenue loss to the local tax base.

Figure 10. Project Location and Map of the Shoreline Change between 1937 and 2017



Finally, according to NOAA's Coastal Flood Mapper, this project is at the highest risk of coastal flooding as seen in **Figure 11**.

Figure 11. Map of Project Location and Risk of Coastal Flooding (NOAA, 2021)



For more information about this project area please see:

- A link to the Middle Peninsula PDC's All Hazards Mitigation Plan (2016) can be found at: https://www.mppdc.com/articles/reports/AHMP_2016_FEMA_Approved_RED.pdf
- A link to Town of Tappahannock's current floodplain ordinance can be found at: [https://img1.wsimg.com/blobby/qo/20120fb-b-c962-454c-8dcf-434b6341ec7b/downloads/Notice%20-%20Flood%20Plain%20Ordinance%20-%202021%20\(pdf\).pdf?ver=1634741048395](https://img1.wsimg.com/blobby/qo/20120fb-b-c962-454c-8dcf-434b6341ec7b/downloads/Notice%20-%20Flood%20Plain%20Ordinance%20-%202021%20(pdf).pdf?ver=1634741048395).

COMMUNITY SCALE BENEFITS.

This project will occur on public property which will provide critical access to Hoskins Creek and the Rappahannock River for citizens and visitors alike. The Town currently has very limited public access to the water despite being a waterfront town and this recently acquired waterfront property represents a vital need for the economic and cultural fabric of the Town as it will provide water access for all in a place which has very little. The Town also envisions the site serving as a much-needed economic driver as it will offer eco-related recreational and commercial business opportunities.

The site also hosts a sewer pump station owned by the Town which serves as a critical piece of public infrastructure.

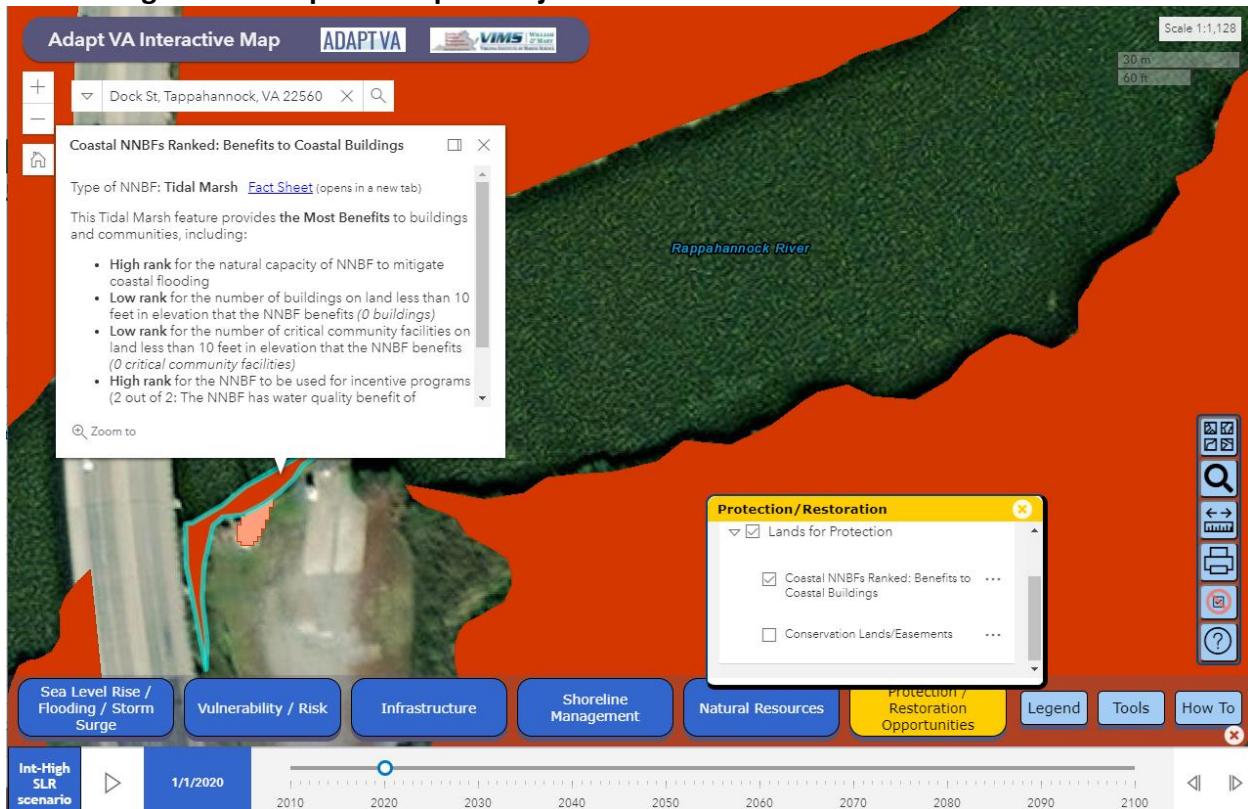
All of these assets are vulnerable to flooding and erosion and in need of enhanced resiliency to ensure a prosperous and resilient future for the Town, its citizens, and businesses.

The Commonwealth of Virginia may have some basis to give preference to projects larger in scale than those affecting one parcel or property owner. VA Code § 10.1-603.25(E) states, “Priority shall be given to projects that implement community-scale hazard mitigation activities that use nature-based solutions to reduce flood risk. However, this would not provide a basis for rejecting applications for one parcel or property owner as projects of all sizes are expressly to be considered. The issue is how the guidance defines “Community Scale project” which means a project that provides demonstrable flood reduction benefits at the U.S. census block level or greater. A census block is the smallest U.S. Census geography, but in rural application in many instances represents an extremely large area covering in excesses of 3,000 acres and almost 5 square miles, while an urban block may be as small as 2 acres or .003 of one acre in size. If the basis for approving rural projects is based singularly on proving “demonstrable flood reduction” benefit, rural areas will never compete.

The Middle Peninsula PDC believes that proposing nature-based flood mitigation projects at the parcel scale and where possible, partnering with neighbors can accomplish more in terms of linear shoreline protected than urban areas which have smaller sized parcels. Therefore, consistent with the General Assembly directive to Virginia Marine Resources Commission (VMRC) that every VMRC permitted living shoreline project is the preferred solution, we believe submissions of each nature-based project is essentially a nature-based “brick in the wall” and over time the cumulative impact of this approach will be realized. The alternative is hardening of the shoreline, which is counter to the desires of the General Assembly.

Additionally, Adapt VA contains a data layer illustrating areas of less than 10 feet in elevation that show locations in the Middle Peninsula that offer benefits of natural and nature-based features (NNBF) to coastal buildings, habitat, and community protection as seen in **Figure 12**. All Round 1 applications from the Middle Peninsula have multiple community protection benefits which include combinations of mitigating coastal flooding, protecting buildings/community facilities and Credit for Habitat Protection credit.

Figure 12. Adapt VA Map of Project Location and Elevation for NNBF Benefits



The Middle Peninsula Planning District Commission (MPPDC) is a political subdivision of the Commonwealth of Virginia formed under VA Code §15.2-4203 to provide solutions to problems of greater than local significance and cost-savings through economies of scale. The MPPDC serves nine localities of the Middle Peninsula including Essex, Gloucester, King & Queen, King William, Mathews, and Middlesex Counties as well as the Towns of Tappahannock, West Point, and Urbanna.

MPPDC is staffed using multiple methods including co-operative procurement, hourly, and burdened staff. MPPDC staff consists of Executive Director, Deputy Director, Chief Financial Officer, Senior Project Planner, clerical support staff; co-operative procured Director of Planning, General Planner, Certified Flood Plain Manager, Transportation Planner, Emergency Planner; Hourly staff for Housing, Community Development Planner and Public relations.

The PDC staffing team assists localities with long-term and/or regional planning efforts. The MPPDC Executive Director, Deputy Director, and Chief Financial Officer have decades of experience in managing and administering project grants at multiple scale from grants in excess of \$1,000,000 to very small grants. MPPDC is an entrepreneurial based government agency with an annual operating budget ranging from \$750,000 to over \$1,000,000. The MPPDC manages annually 25-30 concurrent federal and state grants utilizing industry standard Grants Management Software. Staff utilize GIS and all Microsoft software as well as other software as

required by different grants. The MPPDC operates service centers in the topical areas of coastal zone management, emergency planning, housing, transportation planning and transportation demand management, economic development, social assistance, small business development, general planning and technical assistance and other areas as determined by the Commission. MPPDC has over 25 years of experience managing multiple revolving loan programs. In the 25 years that the Executive Director has been employed by the Commission no audit findings have occurred.

CONCERNING ADVERSE IMPACTS.

The Middle Peninsula PDC recognizes that VMRC is the permit issuing authority for all shoreline projects and by statute the local wetlands board and VMRC Commission must utilize the best available science when evaluating each project including how the project impacts up stream and down steam impacts. This might include modifying any aspect of a Flood Fund design to ensure that impacts are mitigated. With that said, the Middle Peninsula PDC proposes that prior to requesting final reimbursement from DCR for any design proposal funded under the Flood Fund, the Middle Peninsula PDC staff will send the proposed design to the Shoreline Erosion Advisory Service (SEAS) for review. This will require the Department of Conservation and Recreation (DCR) SEAS staff to work directly with the private project designer to address impacts that DCR staff has concerns with to ensure that impacts stemming from any design permitted by VMRC are lessened to a degree that is satisfactory by DCR.

ALTERNATIVES.

Alternative design solutions are not applicable in this application. The proposed project is to develop a nature-based or hybrid design solutions and its cost does not exceed \$3 million.

GOALS AND OBJECTIVES.

The Code of Virginia § 28.2-104.1. defines "Living shoreline" as *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. When practicable, a living shoreline may enhance coastal resilience and attenuation of wave energy and storm surge.*

The goals and objectives of this project are as follows -

Goal 1: Improve coastal resiliency within the community and the Commonwealth.

- Objective A: Prevent loss of life and reduce property damage by mitigating for recurrent, repetitive, and future flooding within the project area using a nature-based design approach.
- Objective B: Stabilize the shoreline to ensure that the Town's tax base does not erode and reduce the overall erosion rate within the project area using a nature-based design approach.

According to FEMA and NOAA, living shorelines are more resilient against storms compared to bulkhead. With the installation of sills, these structures will run parallel to the existing or vegetative shoreline, reduce wave energy, and prevent erosion. Additionally, eroding shorelines and sediment from stormwater runoff greatly contribute to the shoaling of navigable waterways. With maritime industries contributing substantially to the local and regional economy, the mitigation of continued sedimentation and shoaling provided by this project will protect and enhance the region's commercial and recreational maritime economies.

Additionally, as the installation of a living shoreline will reduce erosion of the property, this will reduce flood risks at the project site. Also, as flooding and erosion threaten the tax base within the locality, this project will help maintain the tax-base at this project location, which directly protects the largest employer in Town of Tappahannock, which is the medical community, public schools, local government, and retail and groceries.

Goal 2: Improve water quality for the Chesapeake Bay area.

- Objective A: Improve nitrogen, phosphorus, and sediment using a nature-based design approach.

Since this project is proposing a nature-based design solution for living shorelines, it could result in a design that will have nutrient and sediment reduction benefits to local waters. According to a report titled, Removal Rates of Shoreline Management Project, an expert Panel on Shoreline Management identified the living shorelines has having a nitrogen removal rate 0.01218 pounds per linear foot per year (lb/lf/yr) and a phosphorus removal rate of 0.00861

lbs/lf/yr. Additionally living shorelines were shown to reduce total suspended sediment by 42 lb/lf/yr. For example, a proposed project of 150 linear feet of living shoreline has the ability of removing 1.827 pounds of nitrogen per year, 1.2915 pounds of phosphorus per year and 6,300 pounds of sediment per year. Ultimately contributing to the overall water quality of the Chesapeake Bay.

In addition to water quality improvements, living shorelines offer new habitat for marine wildlife and birds. With the living shorelines reducing wave energy in this area this provides a calmer habitat to breed and nurse juvenile wildlife and fish. Also, incorporated plantings will offer more cover and protection from prey.

Goal 3: Transferability to other communities.

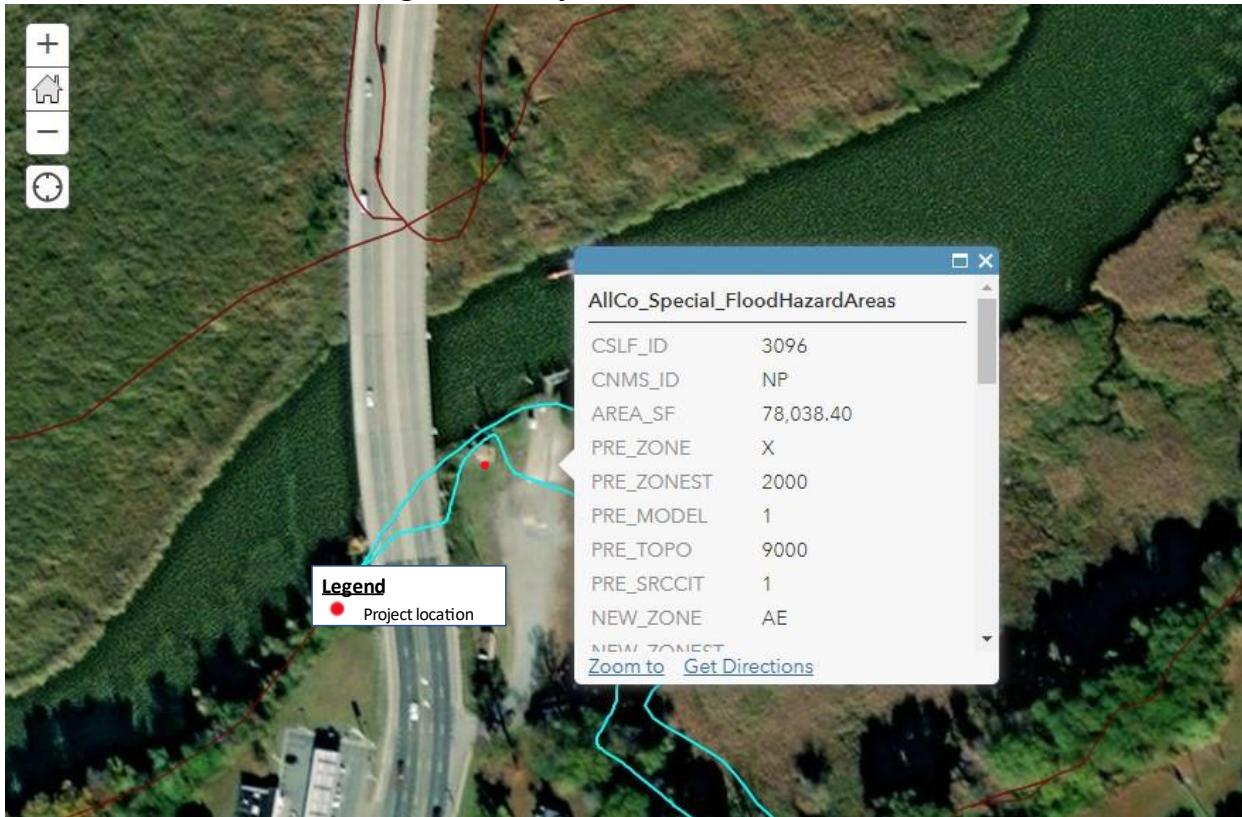
- Objective A: Improve the implementation of Fight the Flood projects and project as an example program to be replicated in other communities within the region or the Commonwealth.

For over 40 years the Middle Peninsula PDC and its participating localities have worked diligently on topics associated with the land-water interface, including coastal use conflicts and policies, sea level rise, stormwater flooding, roadside ditch flooding, erosion, living shorelines, coastal storm hazards (i.e., hurricanes, tropical storms), riverine and coastal flooding, and coastal resiliency.

APPROACH, MILESTONES, AND DELIVERABLES.

The proposed project is to design and construct a nature-based or hybrid shoreline solution in flood prevention and protection for living shorelines and vegetated buffers in the flood hazard area as seen in **Figure 13**.

Figure 13. Project Flood Hazard Area



Upon receiving notification of an award to proceed, the Middle Peninsula PDC will commence work in moving forward with the project in partnership with the property owner of the specified location.

The proposed project includes four phases of activities over the course of a year.

The anticipated timeline for the proposed project could be as quick as one-year, but no more than two years. The timeline range is due to the potential for delays in project initiation, contractor availability, procurement of materials, and permitting.

It is anticipated that the proposed project will commence in January 2022 and be completed by December 2023.

Action Item	M1	M2	M3	M4	M5	M6	M7
Phase 1 – Environmental Scan							
Hold administrative project kick off meeting	X						
Conduct environmental scan of property location in need of a flood resiliency design solution	X						
Select contractor to provide potential nature-based or hybrid design solutions	X						
Coordinate with property owner and contractor on project expectations	X	X	X	X	X		
Apply for any necessary permits	X	X	X				
Phase 2 – Solution Design							
Discuss nature-based or hybrid design solutions with contractor and property owner		X	X				
Select which nature-based or hybrid design solution is most appropriate		X	X				
Have contractor develop selected nature-based or hybrid design solution			X	X			
Phase 3 – Strategic Implementation of Design							
Share nature-based or hybrid design solution with property owner					X		
Discuss strategies in moving forward with implementing the nature-based or hybrid design solution and drafting the JPA.					X	X	
Provide a digital close out report and copy of the completed nature-based or hybrid design solution along with the completed Certificate of Approval Floodplain Management form to the funding agency						X	
Phase 4 – Construction of Design							
Submit the JPA for approval						X	
Upon JPA approval, prepare site for construction of design							X
Construct the design							X
Hold administrative project close out meeting							X

RELATIONSHIP TO OTHER PROJECTS.

As described previously, the Town was awarded a VDCR VA Land Conservation Fund grant to help purchase and conserve the property to preserve critical habitat and ensure public access to the Town's waterfront along the Rappahannock River and its tributaries. The Town intends to enhance the property for public use of the waterfront including restoring coastal habitats that have been compromised at the site by erosion and invasive plants. Securing DCR Flood

Funding is a critical first step to meeting these objectives for the site and complementing the recent DCR investments at the site.

In response to emerging flood challenges, the Middle Peninsula PDC launched the Middle Peninsula FTF Program in 2020 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 FTF Program helps property owners (private and public) gain access to programs, funding (i.e., grants and loans), and services to better manage challenges posed by flood water.

Other plans and resources which are integral to the implementation of the Flood Resiliency Plan are:

Long Term Planning

- Middle Peninsula All Hazards Mitigation Plan – FEMA and Middle Peninsula locality approved 2016
 - The overarching project that provides updates every five years of the hazards within the region is the Middle Peninsula All Hazards Mitigation Plan. This plan identifies the top hazards within the region and provides a HAZUS assessment that analyzes flooding (riverine and coastal), sea-level rise and hurricane storm surge impacts in the region. Additionally, this plan lists strategies and objectives that guide member localities to mitigate for these strategies.
- Middle Peninsula Comprehensive Economic Development Strategy – Middle Peninsula PDC approved 2021
- Middle Peninsula VDOT Rural Long Range Transportation Plan – Middle Peninsula PDC approved annually

Short Term Implementation

- Middle Peninsula PDC Fight the Flood (FTF) Program Design – Middle Peninsula PDC, approved June 2020 and chairman approved update 2021
- Middle Peninsula PDC Living Shoreline Resiliency Incentive Funding Program – Virginia Revolving Loan Fund Program Design and Guidelines, approved 2015

As the Middle Peninsula PDC has continuously worked on flooding and coastal resiliency topics. All of these projects have built upon each other to establish a solid foundation of regional expertise in flooding and coastal resiliency topics. Now, with such a wealth of information, the Middle Peninsula PDC can move beyond research and studies to begin implementing projects on the ground. One effort, in particular, was launched in 2020 in response to emerging flood challenges; the Middle Peninsula PDC Commission authorized staff to develop the Middle Peninsula FTF Program. This program 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 FTF Program

helps property owners gain access to programs and services to better manage challenges posed by flood water. Therefore, the Middle Peninsula PDC have partnered with private property owners that have registered for the FTF Program to assist them in finding funding for their shoreline as seen in **Appendix 5**.

Finally, the Flood Resiliency Plan and associated programs strive to carry out the guiding principles and goals set forth in the Virginia Coastal Resilience Master Planning Framework established in 2020. The proposed activities are proposed in accordance with the guiding principles and with the intent that the outcomes will help the Commonwealth meet the goals set forth in the planning framework.

MAINTENANCE PLAN.

The approved VMRC permits does not require a maintenance plan; therefore, the maintenance of this construction project will be in accordance with the permit requirements.

CRITERIA.

1. 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 or a recognized state or federal Indian tribe)?

The Middle Peninsula PDC is a political subdivision of the Commonwealth of Virginia formed under VA Code §15.2-4203 and pursuant to the Constitution or laws of the Commonwealth.

2. Does the local government have an approved resilience plan meeting the criteria as established by this grant manual? Has it been attached or a link provided?

The Middle Peninsula PDC does have an Approved Regional Flood Resiliency Plan as of August 19, 2021, which can be found at the following link:

https://fightthefloodva.com/wp-content/uploads/2021/08/Approved-8_19_DCR-packet_letterandplan.pdf.

3. For local governments that are not towns, cities, or counties, have letters of support been provided from affected local governments?

The Middle Peninsula PDC does have support letters from all nine localities including the Counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex Counties and the Towns of Tappahannock, West Point, and Urbanna as seen in **Appendix 1**.

4. Has the applicant provided evidence of an ability to provide the required match funds?

The property owner has provided a match commitment letter to the Middle Peninsula PDC indicating their responsibility to provide the appropriate match if their design solution project proposal is awarded as seen in **Appendix 6**.

5. Has the applicant demonstrated to the extent possible, the positive impacts of the project or study on prevention of flooding?

Yes, nature-based solutions—such as reconnecting floodplains to give rivers more room during floods or restoring reefs, marshes or dunes that can protect coastal communities during storms—as well as hybrid solutions can also help improve water quality, provide prime wildlife habitat, enhance recreational opportunities, and produce related economic and social benefits.

6. Has the applicant demonstrated to the extent possible, the positive impacts of the project or study on prevention of flooding? Yes.

SCORING CRITERIA FOR FLOOD PREVENTION AND PROTECTION PROJECTS.

Applicant Name:		Middle Peninsula Planning District Commission	
Eligibility Information			
Criterion	Description		Check One
1. 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)?			
Yes	Eligible for consideration		X
No	Not eligible for consideration		
2. Does the local government have an approved resilience plan and has provided a copy or link to the plan with this application?			
Yes	Eligible for consideration under all categories		X
No	Eligible for consideration for studies, capacity building, and planning only		
3. If the applicant is <u>not</u> a town, city, or county, are letters of support from all affected local governments included in this application?			
Yes	Eligible for consideration		X
No	Not eligible for consideration		
4. Has this or any portion of this project been included in any application or program previously funded by the Department?			
Yes	Not eligible for consideration		
No	Eligible for consideration		X
5. Has the applicant provided evidence of an ability to provide the required matching funds?			
Yes	Eligible for consideration		X
No	Not eligible for consideration		
N/A	Match not required		

Project Eligible for Consideration		X Yes □ No
Applicant Name:	Middle Peninsula Planning District Commission	
Scoring Information		
Criterion	Point Value	Points Awarded
6. Eligible Projects (Select all that apply)		
Projects may have components of both 1.a. and 1.b. below; however, only one category may be chosen. The category chosen must be the primary project in the application.		
1.a. Acquisition of property consistent with an overall comprehensive local orregional plan for purposes of allowing inundation, retreat, or acquisition of structures.	50	
<input type="checkbox"/> Wetland restoration, floodplain restoration <input type="checkbox"/> Living shorelines and vegetated buffers. <input type="checkbox"/> Permanent conservation of undeveloped lands identified as having flood resiliencevalue by <i>ConserveVirginia</i> Floodplain and Flooding Resilience layer or a similar datadriven analytic tool <input type="checkbox"/> Dam removal <input type="checkbox"/> Stream bank restoration or stabilization. <input type="checkbox"/> Restoration of floodplains to natural and beneficial function. <input type="checkbox"/> Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.	45	45
1.b. Any other nature-based approach	40	
All hybrid approaches whose end result is a nature-based solution	35	
All other projects	25	
7. Is the project area socially vulnerable? (Based on ADAPT VA's Social Vulnerability Index Score.)		
Very High Social Vulnerability (More than 1.5)	15	
High Social Vulnerability (1.0 to 1.5)	12	
Moderate Social Vulnerability (0.0 to 1.0)	8	8
Low Social Vulnerability (-1.0 to 0.0)	0	
Very Low Social Vulnerability (Less than -1.0)	0	
8. Is the proposed project part of an effort to join or remedy the community's probation or suspension from the NFIP?		
Yes	10	
No	0	0

9. Is the proposed project in a low-income geographic area as defined in this manual?		
Yes	10	10
No	0	
10. 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?		
Yes	5	5
No	0	
11. Does this project provide “community scale” benefits?		
Yes	20	20
No	0	
Total Points		88

SCOPE OF WORK CHECKLIST.

Scope of Work Narrative	
Supporting Documentation	Included
Detailed map of the project area(s) (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
FIRMette of the project area(s) (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Historic flood damage data and/or images (Projects/Studies)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
A link to or a copy of the current floodplain ordinance	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Non-Fund financed maintenance and management plan for project extending a minimum of 5 years from project close	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
A link to or a copy of the current hazard mitigation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
A link to or a copy of the current comprehensive plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Social vulnerability index score(s) for the project area from ADAPT VA's Virginia Vulnerability Viewer	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If applicant is not a town, city, or county, letters of support from affected communities	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Completed Scoring Criteria Sheet in Appendix B, C, or D	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Budget Narrative	
Supporting Documentation	Included
Authorization to request funding from the Fund from governing body or chief executive of the local government	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Signed pledge agreement from each contributing organization	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

III. BUDGET NARRATIVE

Below is the estimated budget for the proposed flood prevention construction project located in a low-income opportunity zone geographic area. Therefore, on behalf of the Town of Tappahannock, MPPDC staff is requesting 80% funding from DCR, and the Town will provide 20% match. Please see match commitment letters from the property owners in **Attachment 6**.

The proposed project has an estimated total budget of \$144,172 and is requested \$115,337 in DCR funding. Please note that the nature-based shoreline construction cost is based off an estimate provided by Virginia Institute of Marine Science Shoreline Studies Program for \$650 for each linear foot of living shoreline installed (\$125 linear feet of shoreline = \$81,250).

Budget Narrative (Category D)				Budget (Cat. D)		
Personnel Salaries/Wages	DCR %	Match %	Annual Salary	Applicant I		
				DCR	Owner	Total
Staff	22.25%	5.57%	\$70,000	\$10,387	\$2,597	\$12,984
Personnel	<i>Proj Admin Split</i>			\$10,387	\$2,597	\$12,984
Fringe, 26.21% salaries;	Total	80%	20%			
	\$109,250	87,400.00	21,850.00	\$2,722	\$681	\$3,403
	15%	16,387.50	13,110.00		3,277.50	
Total Personnel	125,637.50	100,510.00	25,127.50	\$13,109	\$3,278	\$16,387
Direct Costs: SubAward/SubContract Agreements				80%	20%	
Nature Based Shoreline Design/Draft Permit JPA			\$10,000	\$8,000	\$2,000	\$10,000
Legal bid docs and procurement prep			\$3,000	\$2,400	\$600	\$3,000
Nature based Shoreline Construction			\$81,250	\$65,000	\$16,250	\$81,250
Site preparation for phragmites prevention			\$5,000	\$4,000	\$1,000	\$5,000
Floodproofing study & design for Sewer Pump Station			\$10,000	\$8,000	\$2,000	\$10,000
Project financial services (50000/50500/55900/56100)			\$11,322	\$9,058	\$2,264	\$11,322
Facility services (52100/52200/52400/54200/54500)			\$3,228	\$2,582	\$646	\$3,228
Communication services (52250/52255/55150/57100/57300)			\$1,017	\$813	\$203	\$1,017
Data services (53100/53101/53200/57900)			\$306	\$245	\$61	\$306
Material services (53400/53500/57200/57500)			\$1,200	\$960	\$240	\$1,200
Consulting services (55100/56300/56400/56700)			\$1,461	\$1,169	\$292	\$1,461
			\$127,785			
SUBTOTAL: Direct Costs				\$115,337	\$28,835	\$144,172
Total				\$115,337	\$28,835	\$144,172
Other Match:				\$0	\$0	\$0
Source of Match						
GRAND TOTAL				\$115,337	\$28,835	\$144,172

The Middle Peninsula PDC staff will manage and administer this project. MPPDC staff will manage and administer this project. Thus, personnel time is needed to ensure that project deliverables are completed within the project timeline. Along with personnel expenses, MPPDC fringe is needed. This includes health insurance, retirement, group life insurance, workman's comp, and unemployment

insurance. MPPDC fringe rate for FY22 is 26.58% and comprised of: Health Insurance – 49.33%, Retirement – 18.35%, Workers Comp – 27.42%, Social Security – 4.46%, Life Insurance – 0.40%, Unemployment – 0.04%. Direct charges are costs associated with overall projects costs consistent with general accounting principles.

Authorization to request for funding:



COMMISSIONERS

Essex County
Hon. Edwin E. Smith, Jr.
Hon. John C. Magruder
Ms. Sarah Pope
Mr. Michael A. Lombardo

Town of Tappahannock
Hon. Fleet Dillard

Gloucester County
Hon. Ashley C. Chriscoe
(Vice-Chairman)
Hon. Michael R.
Winebarger
Dr. William G. Reay
Mr. J. Brent Fedors

King and Queen County
Hon. Sherrin C. Alsop
Hon. R. F. Bailey
Mr. Thomas J.
Swartzwelder
(Chairman)

King William County
Hon. Ed Moren, Jr.
Hon. Travis J. Moskalski
(Treasurer)
Mr. Otto O. Williams

Town of West Point
Hon. James Pruitt
Mr. John Edwards

Mathews County
Hon. Michael C. Rowe
Hon. Melissa Mason
Mr. Thornton Hill

Middlesex County
Hon. Wayne H. Jessie, Sr.
Hon. Reggie Williams, Sr.
Mr. Gordon E. White

Town of Urbanna
Hon. Marjorie Austin

Secretary/Director
Mr. Lewis L. Lawrence

10/19/21

To: DCR Staff

From: Lewie Lawrence, MPPDC Executive Director

REF: Authorization to request for funding

Matching funds for all construction and design projects provided under any DCR application round of the Community Flood Preparedness Fund are provided by the property owner for which the project is proposed, unless otherwise noted. The match commitment letter acknowledges that the owner of the projects (landowner) understands that a match commitment is required and will be provided should the project be funded.

The required elements are found within the submitted application proposal packet. A notation of where each required item is noted in "parentheses"

- The name, address, and telephone number of the contributor (application packet and match commitment letter)
- The name of the applicant organization (application cover sheet)
- The title of the project for which the cash contribution is made (application cover sheet)
- The source of funding for the cash contribution (match commitment letter)
- The dollar amount of the cash contribution (application budget)
- A statement that the contributor will pay the cash contribution during the agreement period (match commitment letter).

Signed pledge agreement from each contributing organization:



Town Manager
Eric Pollitt

Town Attorney
Diane M. Lank

Town Treasurer
Faye D. Johnson

Town Clerk
Patsy K. Scates

Chief of Police
James G. Ashworth Jr.

TOWN OF TAPPAHANNOCK

P. O. Box 266
Tappahannock, Virginia 22560
(804) 443-3336 Fax (804) 443-1051
www.tappahannock-va.gov

Mayor
Roy M. Gladding

Town Council
Kay Carlton

Marcia W. Jenkins
Fleet Dillard

Kenneth A. Gillis
Troy L. Balderson
Anita J. Latane

Virginia Department of Conservation and Recreation
Attention: Virginia Community Flood Preparedness Fund
Division of Dam Safety and Floodplain Management
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Dear Mr. Clyde Cristman,

Thank you for considering the application to the Virginia Community Flood Preparedness Fund, involving necessary flood mitigation activities on my property at 1154 Tappahannock Blvd. Tappahannock, VA 22560. I am committed to provide the matching funds necessary in cash or Middle Peninsula Planning District Commission (MPPDC) revolving loan funds for this project and understand that the final amount of matching funds required will be subject to the contract amount awarded by VDCR.

Please reach out to the MPPDC, who is submitting this proposal on my behalf, at 804-758-2311 should you have any questions, and they will be able to contact me to coordinate a response. I can be reached by phone at 804-443-3336 or by email at epollitt@tappahannock-va.gov.

Sincerely,

A handwritten signature in black ink that reads "Eric S. Pollitt".

Eric S. Pollitt
Town Manager

I. SUPPORTING DOCUMENTATION

- Letters of support from all affected local government
- Detailed map of the project area(s)
- FIRMette of the project area(s)
- Historic flood damage data and/or images

APPENDIX 1

Community Support Letter

From: [Eric Pollitt](#)
Sent: Friday, August 6, 2021 9:18 AM
To: [Lewis Lawrence](#); [Curt Smith](#)
Cc: mlombardo@essex-virginia.org
Subject: RE: Lewie- MPPDC- Missing Letter

Lewis L Lawrence, Executive Director
Middle Peninsula Planning District Commission
P.O. Box 286
Saluda, Va 23149

RE: Support Letter for Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund

Dear Lewie,

Tappahannock supports all eligible applications requesting funding under the DCR Flood Preparedness Fund. Proposals submitted by MPPDC on behalf of our constituents is a necessary governmental function and consistent with regional and local resilience planning efforts. 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 Program serves as the regions flood resiliency coordination program. The MPPDC Living Shoreline Program Design and the MPPDC Fight the Flood Program Design provide the operational and administrative oversite for resiliency planning, coordination and implementation for our constituents suffering from flooding challenges. These programs, especially MPPDC Fight the Flood (FTF) program recognizes the need to better secure the tax base of coastal localities and 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 Fight the Flood program and the Living Shoreline program exists to help flood-prone property owners access programs and services to better manage challenges posed by flood water and directs constituents to appropriate mitigation solutions, such as nature based solutions. When grants and loans are available, we fully support the MPPDC to provide such to qualified constituent's based on the terms and conditions associated with flood risk necessary to support the public purpose(s) for which the funds, such as the Virginia Community Flood Preparedness Funds have been allocated.

Should you have any questions concerning our support for the work of the MPPDC, I can be reached at epollitt@tappahannock-va.gov or 804-443-3336.

Regards,

Eric S. Pollitt
Tappahannock
Town Manager

APPENDIX 2

Additional Property Photos

The following three photo shows the how close the pump station is to the shoreline. It also shows the shoreline erosion.





Failing rip rap along shoreline has filled with sediment and is growing vegetation.

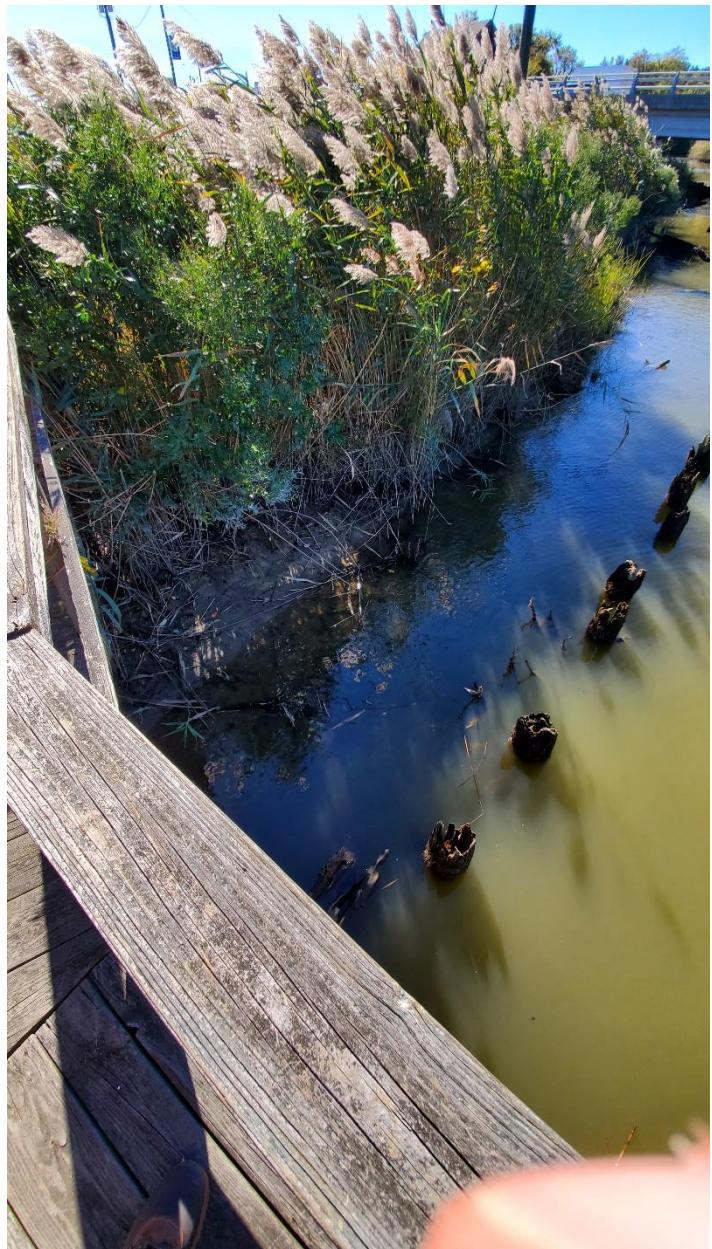


Photo of the shoreline with heavy growth of phragmites.



Photo of the shoreline with the current dock on site.



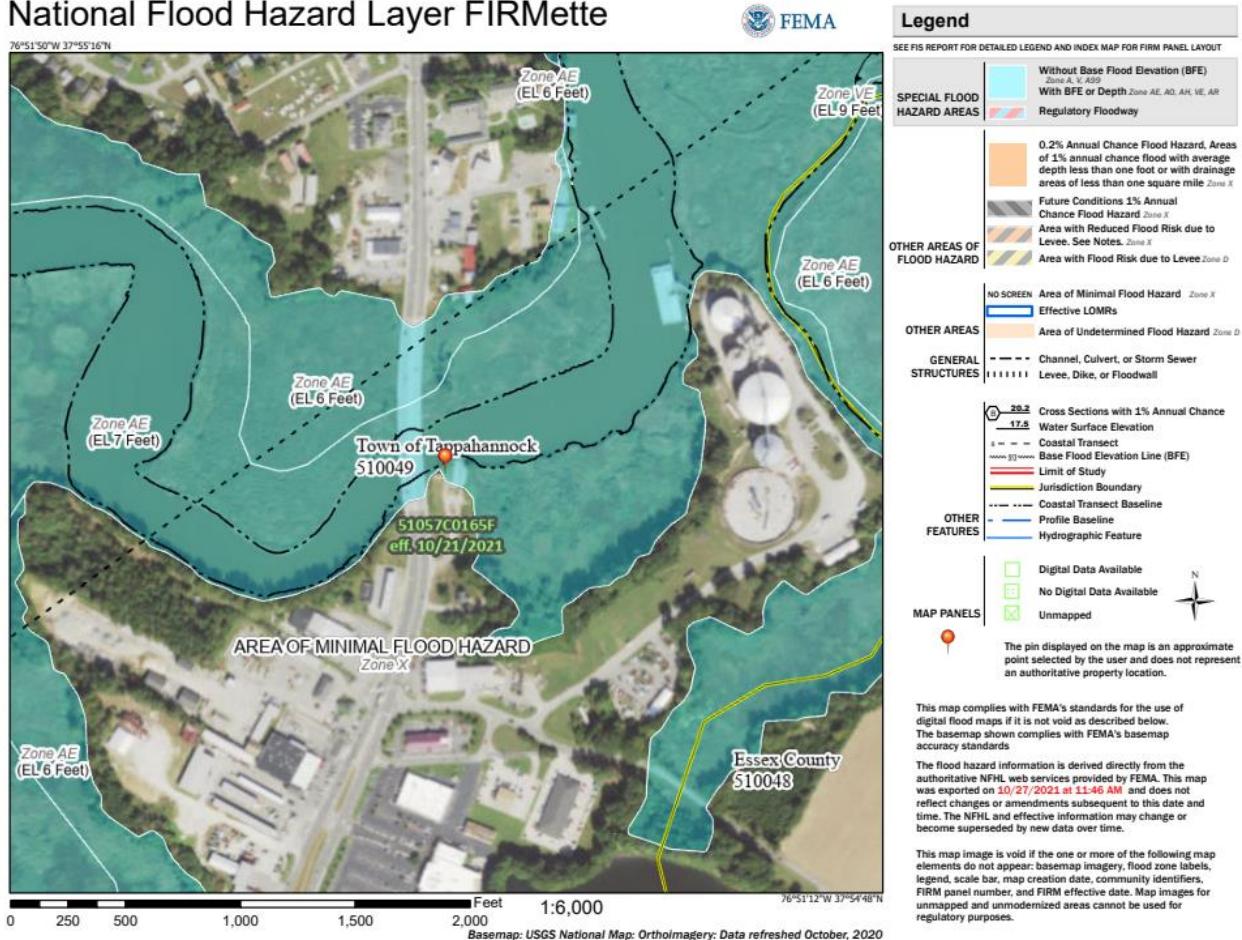


APPENDIX 3

Project Location FIRMette

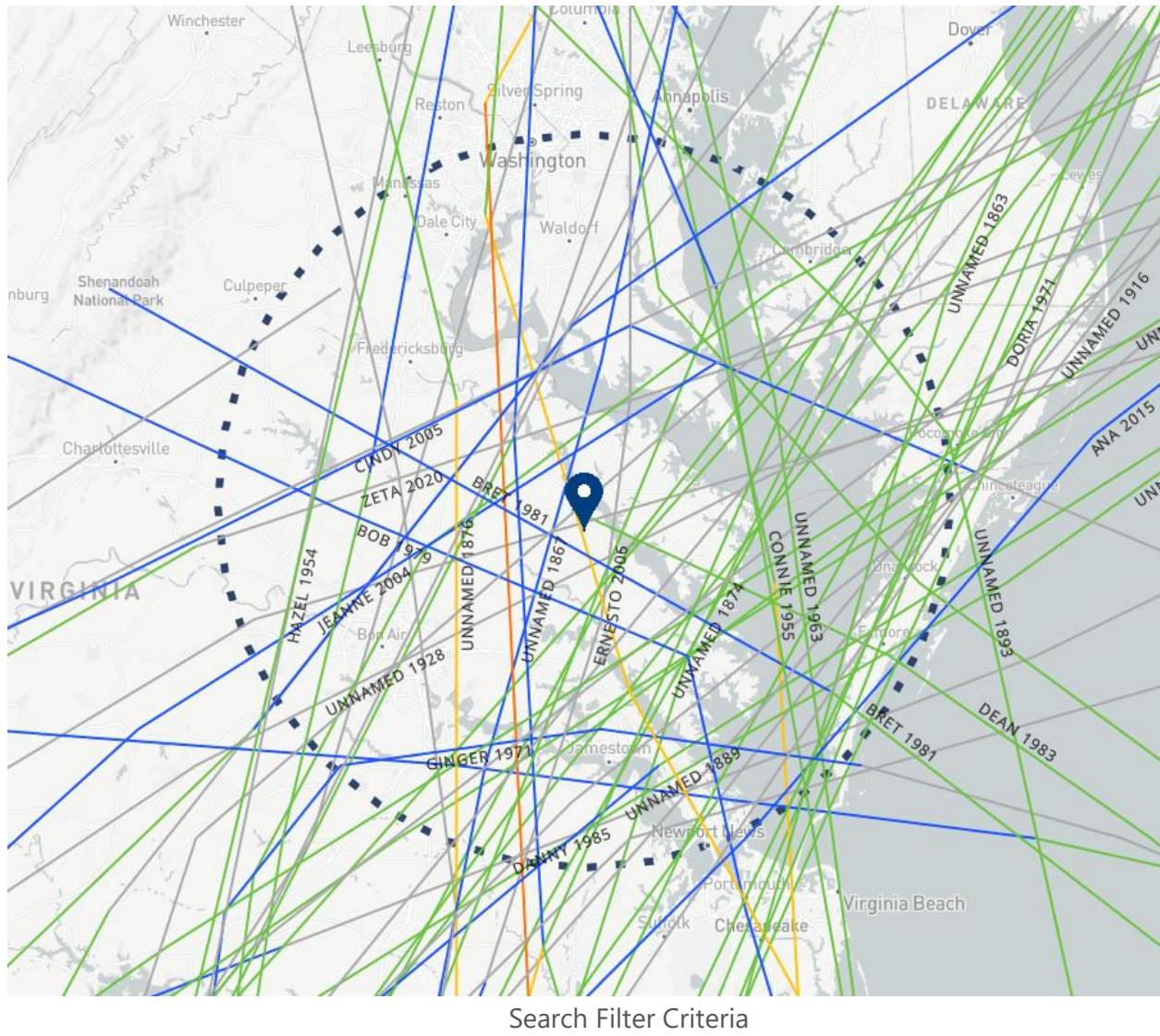
(FIRMette #: 51073C0213F)

National Flood Hazard Layer FIRMette



APPENDIX 4

List of Historic Hurricanes Impacting the Property Location



Location: 37.91725 -76.8586

Categories: H5, H4, H3, H2, H1, TS, TD, ET

Months: ALL

Years: ALL

El Niño-Southern Oscillation (ENSO): ALL

Minimum Pressure (mb) below: 1150

Include Unknown Pressure Rating: TRUE

Buffer Distance: 60

Buffer Unit: Nautical Miles

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
ZETA 2020	Oct 24, 2020 to Oct 30, 2020	100	970	H3
ISAIAS 2020	Jul 28, 2020 to Aug 05, 2020	80	986	H1
NESTOR 2019	Oct 17, 2019 to Oct 21, 2019	50	996	TS
ANA 2015	May 06, 2015 to May 12, 2015	50	998	TS
ANDREA 2013	Jun 05, 2013 to Jun 08, 2013	55	992	TS
HANNA 2008	Aug 28, 2008 to Sep 08, 2008	75	977	H1
ERNESTO 2006	Aug 24, 2006 to Sep 04, 2006	65	985	H1
CINDY 2005	Jul 03, 2005 to Jul 11, 2005	65	991	H1
JEANNE 2004	Sep 13, 2004 to Sep 29, 2004	105	950	H3
IVAN 2004	Sep 02, 2004 to Sep 24, 2004	145	910	H5
GASTON 2004	Aug 27, 2004 to Sep 03, 2004	65	985	H1
GORDON 2000	Sep 14, 2000 to Sep 21, 2000	70	981	H1
BERTHA 1996	Jul 05, 1996 to Jul 17, 1996	100	960	H3
DANNY 1985	Aug 12, 1985 to Aug 20, 1985	80	987	H1
DEAN 1983	Sep 26, 1983 to Sep 30, 1983	55	999	TS
BRET 1981	Jun 29, 1981 to Jul 01, 1981	60	996	TS
BOB 1979	Jul 09, 1979 to Jul 16, 1979	65	986	H1
GINGER 1971	Sep 06, 1971 to Oct 05, 1971	95	959	H2
DORIA 1971	Aug 20, 1971 to Aug 29, 1971	55	989	TS
CAMILLE 1969	Aug 14, 1969 to Aug 22, 1969	150	900	H5
UNNAMED 1963	Jun 01, 1963 to Jun 04, 1963	50	1000	TS
UNNAMED 1961	Sep 12, 1961 to Sep 15, 1961	55	995	TS

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
BRENDA 1960	Jul 27, 1960 to Aug 07, 1960	60	976	TS
CONNIE 1955	Aug 03, 1955 to Aug 15, 1955	120	944	H4
HAZEL 1954	Oct 05, 1954 to Oct 18, 1954	115	938	H4
UNNAMED 1945	Sep 12, 1945 to Sep 20, 1945	115	949	H4
UNNAMED 1944	Oct 12, 1944 to Oct 24, 1944	125	937	H4
UNNAMED 1944	Jul 30, 1944 to Aug 04, 1944	70	985	H1
UNNAMED 1943	Sep 28, 1943 to Oct 02, 1943	55	997	TS
UNNAMED 1934	Sep 01, 1934 to Sep 04, 1934	45	-1	TS
UNNAMED 1933	Aug 13, 1933 to Aug 28, 1933	120	948	H4
UNNAMED 1929	Sep 19, 1929 to Oct 05, 1929	135	924	H4
UNNAMED 1928	Sep 06, 1928 to Sep 21, 1928	140	929	H5
UNNAMED 1928	Aug 03, 1928 to Aug 13, 1928	90	971	H2
UNNAMED 1924	Sep 27, 1924 to Oct 01, 1924	55	999	TS
UNNAMED 1916	May 13, 1916 to May 18, 1916	40	990	TS
UNNAMED 1905	Oct 05, 1905 to Oct 11, 1905	45	-1	TS
UNNAMED 1904	Sep 08, 1904 to Sep 15, 1904	70	-1	H1
UNNAMED 1902	Oct 03, 1902 to Oct 13, 1902	90	970	H2
UNNAMED 1902	Jun 12, 1902 to Jun 17, 1902	50	-1	TS
UNNAMED 1899	Oct 26, 1899 to Nov 04, 1899	95	-1	H2
UNNAMED 1893	Oct 20, 1893 to Oct 23, 1893	50	-1	TS
UNNAMED 1889	Sep 12, 1889 to Sep 26, 1889	95	-1	H2
UNNAMED 1888	Sep 06, 1888 to Sep 13, 1888	50	999	TS

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1886	Jun 27, 1886 to Jul 02, 1886	85	-1	H2
UNNAMED 1886	Jun 17, 1886 to Jun 24, 1886	85	-1	H2
UNNAMED 1883	Sep 04, 1883 to Sep 13, 1883	110	-1	H3
UNNAMED 1882	Sep 21, 1882 to Sep 24, 1882	50	1005	TS
UNNAMED 1882	Sep 02, 1882 to Sep 13, 1882	110	949	H3
UNNAMED 1878	Oct 18, 1878 to Oct 25, 1878	90	963	H2
UNNAMED 1877	Sep 21, 1877 to Oct 05, 1877	100	-1	H3
UNNAMED 1876	Sep 12, 1876 to Sep 19, 1876	100	980	H3
UNNAMED 1874	Sep 25, 1874 to Oct 01, 1874	80	980	H1
UNNAMED 1872	Oct 22, 1872 to Oct 28, 1872	70	-1	H1
UNNAMED 1867	Aug 10, 1867 to Aug 18, 1867	45	-1	TS
UNNAMED 1864	Jul 23, 1864 to Jul 26, 1864	35	-1	TS
UNNAMED 1863	Sep 16, 1863 to Sep 19, 1863	60	-1	TS
UNNAMED 1861	Oct 31, 1861 to Nov 03, 1861	60	992	TS
UNNAMED 1861	Sep 27, 1861 to Sep 28, 1861	70	-1	H1
UNNAMED 1861	Sep 22, 1861 to Sep 29, 1861	70	989	H1
UNNAMED 1859	Sep 15, 1859 to Sep 18, 1859	70	-1	H1

APPENDIX 5

Flood Prevention Project and its Relevance to Other Projects

The Middle Peninsula PDC 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.

Climate Change and Sea Level Rise (2009 to 2012)

The Middle Peninsula PDC 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, Middle Peninsula PDC 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.

Emergency Management – Hazard Mitigation Planning (2009 to Present)

Since 2009, the Middle Peninsula PDC 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 National Oceanic and Atmospheric Administration (NOAA) 2060 intermediate-high scenario), and flooding (coastal and riverine flooding) that estimates losses from each hazard. The Middle Peninsula All-Hazard Mitigation Plan Update 2021 is currently being updated. The 2021 All Hazards Mitigation Plan builds off and updates previous mitigation plans.

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, onsite sewage disposal system (OSDS) management, storm water management, total maximum daily load (TMDL), etc., staff from the Middle Peninsula PDC 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 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 DCR 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 Middle Peninsula PDC are required to address stormwater quality as stipulated by the Chesapeake Bay TMDL Phase II Watershed Implementation Plan and the Virginia Stormwater Regulations. The Middle Peninsula PDC 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)

Middle Peninsula PDC 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 Virginia Stormwater Management Program.

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.

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 Middle Peninsula PDC developed the Middle Peninsula PDC Living Shoreline Incentives Program to offer loans and/or grants to private property owners interested in installing living shorelines to stabilize their shoreline. Currently, loans are available to assist homeowners to install living shorelines on suitable properties. 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). Interest is at the published Wall Street Journal Prime rate on the date of loan closing - currently at 5.25% (11/29/18). Minimum loan amount is \$1,000. Maximum determined by income and ability to repay the loan. Finally, there are currently no grants available in this program. Since 2016 under the Middle Peninsula PDC Living Shoreline Revolving Loan program, 8 living shorelines have been financed and built to date encumbering ~\$500,000 in Virginia Resources Authority loan funding and ~\$400,000 in National Fish and Wildlife Foundation grant funding. Living Shoreline construction cost to date range per job \$14,000- \$180,000. Middle Peninsula PDC oversees all aspects (planning, financing, constriction, and loan servicing) of these projects from cradle to grave.

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.

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.

Oyster Bag Sill Construction and Monitoring at Two Sites in Chesapeake Bay (2018)

Virginia Institute of Marine Science (VIMS) Shoreline Studies Program worked with the Public Access Authority (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.

Fight the Flood Program (2020)

The Fight the Flood (FTF) was launched in 2020 to connect property owners to contractors who can help them protect their property from rising flood waters. FTF also offers a variety of financial tools to fund these projects including but limited to the Septic Repair revolving loan program, Living Shoreline incentives revolving loan fund program, and plant insurance for living shorelines.

APPENDIX 6

Match Commitment Letter



Town Manager
Eric Pollitt

Town Attorney
Diane M. Lank

Town Treasurer
Faye D. Johnson

Town Clerk
Patsy K. Seates

Chief of Police
James G. Ashworth Jr.

TOWN OF TAPPAHANNOCK

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Mayor
Roy M. Gladding

Town Council
Kay Carlton
Marcia W. Jenkins
Fleet Dillard
Kenneth A. Gillis
Troy L. Balderson
Anita J. Latane

Virginia Department of Conservation and Recreation
Attention: Virginia Community Flood Preparedness Fund
Division of Dam Safety and Floodplain Management
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Dear Mr. Clyde Cristman,

Thank you for considering the application to the Virginia Community Flood Preparedness Fund, involving necessary flood mitigation activities on my property at 1154 Tappahannock Blvd. Tappahannock, VA 22560. I am committed to provide the matching funds necessary in cash or Middle Peninsula Planning District Commission (MPPDC) revolving loan funds for this project and understand that the final amount of matching funds required will be subject to the contract amount awarded by VDCR.

Please reach out to the MPPDC, who is submitting this proposal on my behalf, at 804-758-2311 should you have any questions, and they will be able to contact me to coordinate a response. I can be reached by phone at 804-443-3336 or by email at epollitt@tappahannock-va.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric S. Pollitt".

Eric S. Pollitt
Town Manager