

# **STUDY For Round 2**

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 West Point Resilient Bridge Design

**Name of Local Government:** Middle Peninsula Planning District Commission

**Category of Grant Being Applied for (check one):**

Capacity Building/Planning

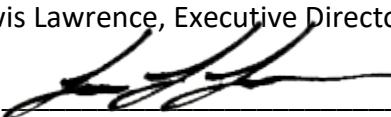
Project

Study

**NFIP/DCR Community Identification Number (CID):** 510082

**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

**Study Grants (Check All that Apply)**

Studies to aid in updating floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.

Revising other land use ordinances to incorporate flood protection and mitigation goals, standards and practices.

Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA). For example, a local government might conduct a hydrologic and hydraulic study for an area that had not been studied because the watershed is less than one square mile. Modeling the floodplain in an area that has numerous letters of map change that suggest the current map might not be fully accurate or doing a detailed flood study for an A Zone is another example.

Studies and Data Collection of Statewide and Regional Significance.

Revisions to existing resilience plans and modifications to existing comprehensive and hazard

Other relevant flood prevention and protection project or study.

**Location of Project (Include Maps):** King and Queen County on land owned by the Town of West Point - Please see the attached corresponding maps for this application.

**NFIP Community Identification Number (CID#) (See appendix F):** 510082

**Is Project Located in an NFIP Participating Community? X Yes " No**

**Is Project Located in a Special Flood Hazard Area? x Yes " No**

**Flood Zone(s) (If Applicable):** AE Zone

**Flood Insurance Rate Map Number(s) (If Applicable):** 51097c0269C

**Total Cost of Project:** \$66,574 90%

**Total Amount Requested:** \$ 59,917 10%

## II. SCOPE OF WORK NARRATIVE

### **INTRODUCTION.**

*This proposal requests funding to assist the Town of West Point with a combination Hydrologic and Hydraulic (H&H) Study and Structural Design and Level of Service study to address ongoing flooding for a publicly owned bridge that was originally built and maintained under a lease agreement where the lessor incurred 100% responsibility for the bridge. The bridge crosses a tidal stream in flood zone AE and is the only public road entry and exit to a public complex utilized by public safety officers for training as well as a site being considered by Virginia Sea Grant-VIMS as a location to establish a resiliency business hub. FEMA indicates that H&H studies are completed to ensure structures are sized correctly to handle floodwaters, while not inadvertently increasing flooding up or down stream. The studies are performed to quantify the volume flow rate of water draining from a watershed (i.e., drainage area), and determine the depth and velocity of flow and forces from flowing water on a surface or at hydraulic structures. H&H studies and LOS studies are essential to mitigate against flood loss in the future*

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 Planning District Commission (MPPDC) 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 MPPDC 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.

The intent of the proposed study is to assess, evaluate and gain understanding of flood risk and protection needs associated with a public bridge with no design or capacity history as the lessor was 100% responsible for the bridge. The study will recommend flood protection signage near the bridge and if the study requires construction recommendations, nature-based features will be incorporated around the bridge.

#### ***PROJECT INFORMATION.***

This proposal requests funding to assist the Town of West Point with a combination Hydrologic and Hydraulic (H&H) Study and Structural Design and Level of Service study to address ongoing flooding for a publicly owned bridge that is owned by the Town of West Point. The Town has owned the property for years, however the bridge was installed and maintained by the tenant under the lease.

The Town has no structural information or flood warning signage on the flood prone bridge. The bridge crosses a tidal stream in flood zone AE and is the only public road entry and exit to a public complex utilized by public safety officers for training as well as a site being considered by Virginia Sea Grant-VIMS as a location to establish a resiliency business hub. FEMA indicates that H&H studies are completed to ensure structures are sized correctly to handle floodwaters, while not inadvertently increasing flooding up or down stream. The studies are performed to quantify the volume flow rate of water draining from a watershed (i.e., drainage area), and determine the depth and velocity of flow and forces from flowing water on a surface or at hydraulic structures. H&H and LOS studies are essential to mitigate against flood loss in the future

The following images show the bridge and its current condition and the tidal stream and habitats adjacent to the bridge.



Image 1- Failing decking due to rising flood waters



Image 2- Elevation is less than two feet above flood level



Image 3 water level



Image 4 tidal wetlands

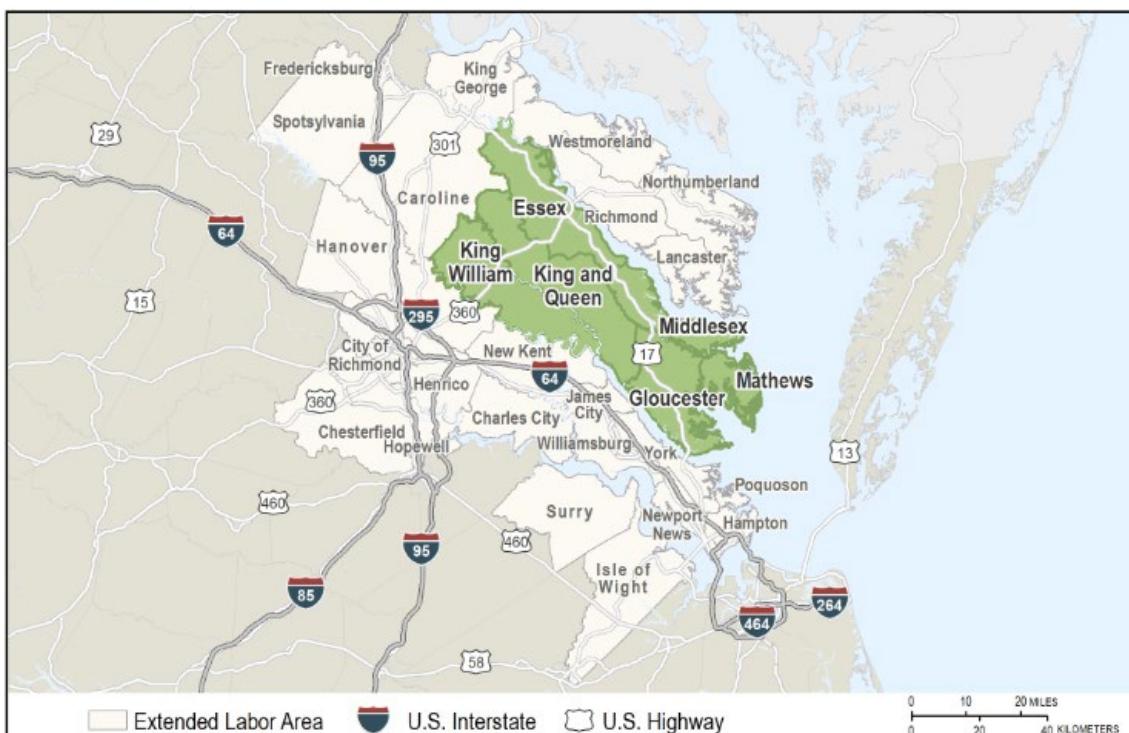
The Town desires to ensure that bridge safety for the public is provided by ensuring adequate study of Hydrologic and Hydraulic (H&H) features and bridge design including flood risk and warnings are understood. The Town is concerned about the impacts of ongoing flooding and the importance of design for service life. The cost of addressing flooding and service life issues is historically significantly lower while the bridge is in service, assuming some understanding of H&H and Level of Service (LOS) is known. The Town of West Point has no understanding of the current H&H and LOS or associated flood risk.

- 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](https://fightthefloodva.com/wp-content/uploads/2021/08/Approved-8_19_DCR-packet_letterandplan.pdf)
  - Please see Page 3-5, notes response 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](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 West Point Comprehensive Plan can be found at: [http://west-point.va.us/pages/department\\_services/dept\\_serv\\_pdfs/2000complan.PDF](http://west-point.va.us/pages/department_services/dept_serv_pdfs/2000complan.PDF)

The Middle Peninsula is the second of three large peninsulas on the western shore of 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**

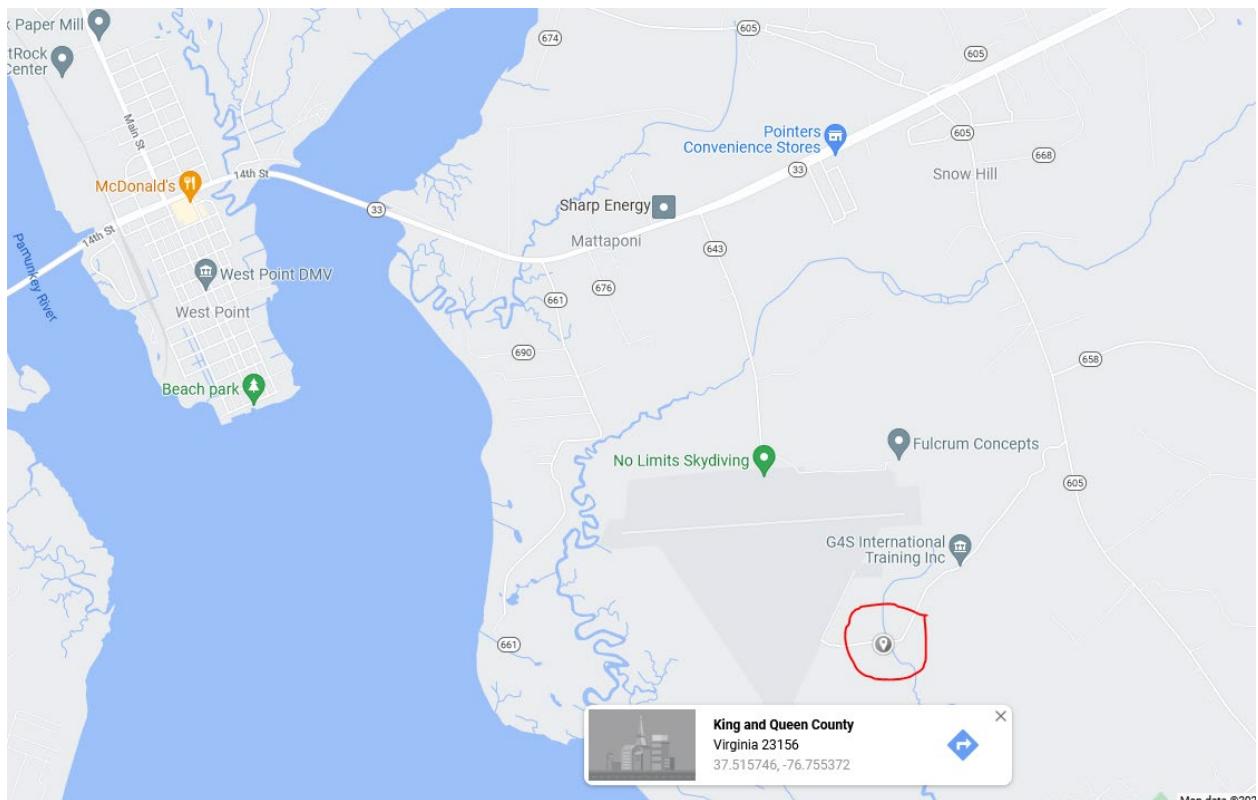


**Figure 2. Middle Peninsula Population**

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
	<b>MPPDC Total</b>	<b>92,886</b>

This project site is located off Route 605 in King and Queen County as depicted in **Figure 3**.

**Figure 3. County Map of Project Location**



**Figure 4. Parcel Map of Project Location  
King and Queen Opportunity Zone**



King & Queen County is part of the Middle Peninsula of Virginia's Coastal Plain and bounded on the southwest by the York and Mattaponi Rivers which separate King and Queen from King William and New Kent Counties. The County comprises 318.1 square miles of land area and 8.9 square miles of water area. Based on 2020 Census Data, King & Queen County's population totals 6,608 which makes it the least populous Middle Peninsula locality. According to DCR guidelines, a portion of the County is considered a low-income geographic area. In **Figure 4** 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.

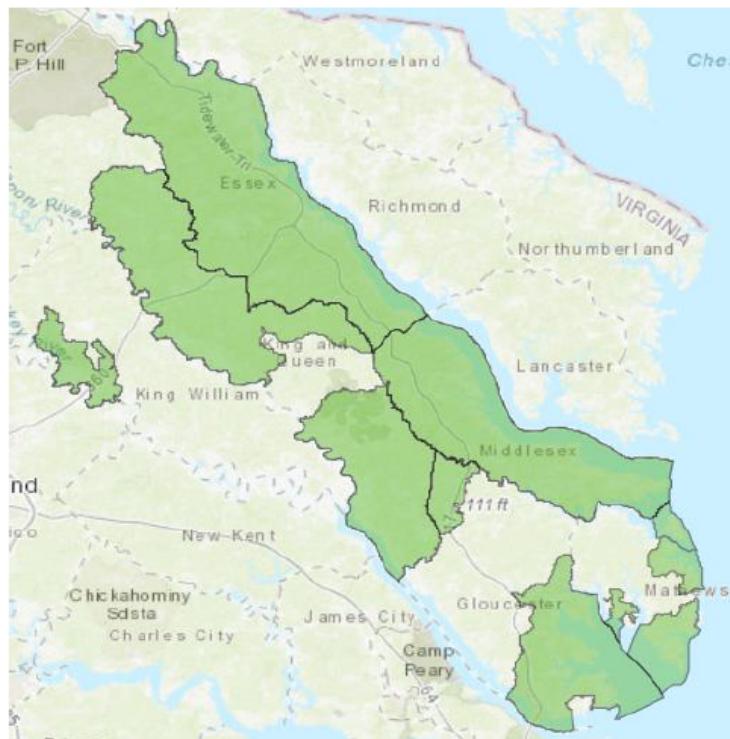
In **Figure 5**, the green areas qualified as low-income "community" areas meeting the 80% Household limits based on US census household income data or are qualified Opportunity Zones. Figure 5. Map of Middle

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.



## Peninsula Low Income Qualifying Geographic Areas

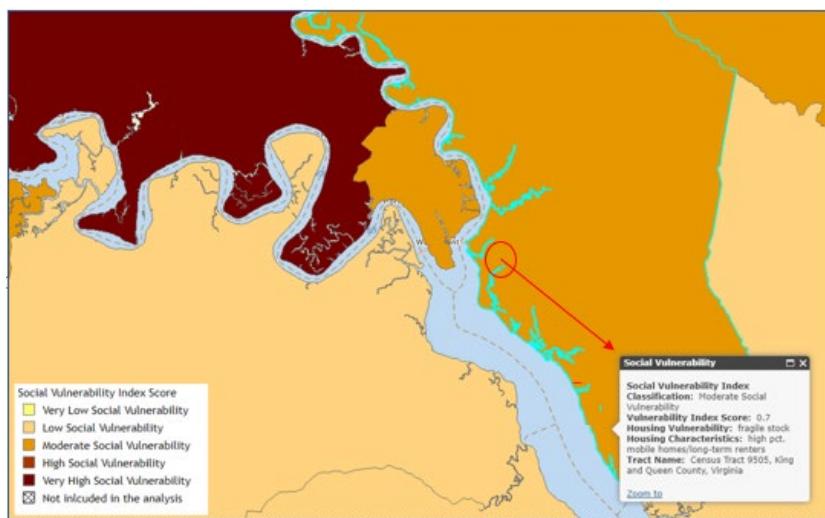
Please see **Figure 6** for a zoomed in map of the project location and the green low-income area overlay. This shows that the project location is within the low-income area.

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



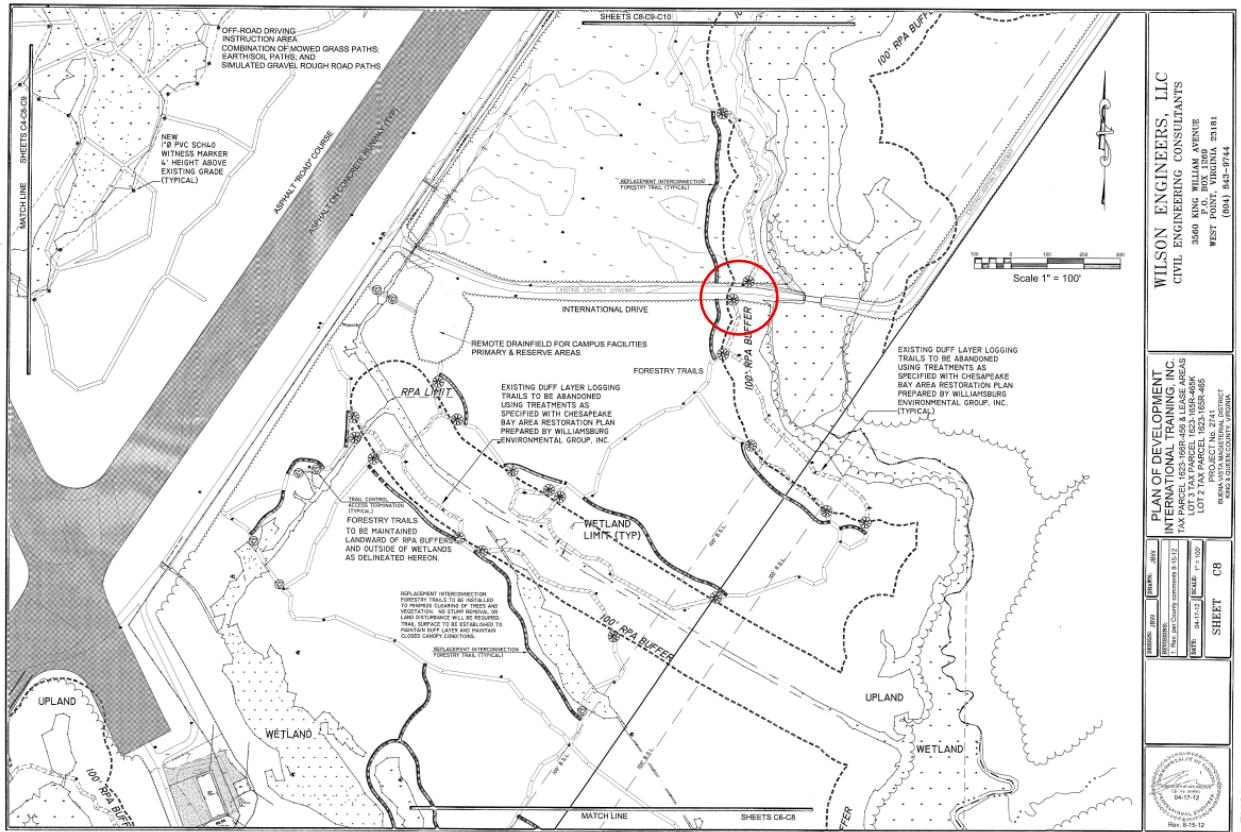
According to the VDAPT Virginia's Social Vulnerability Index Score, this project location has a moderate vulnerability score as seen in **Figure 7**.

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



The project site is located on International Drive as illustrated in the below plan of development from a now defunct project (**Figure 8**).

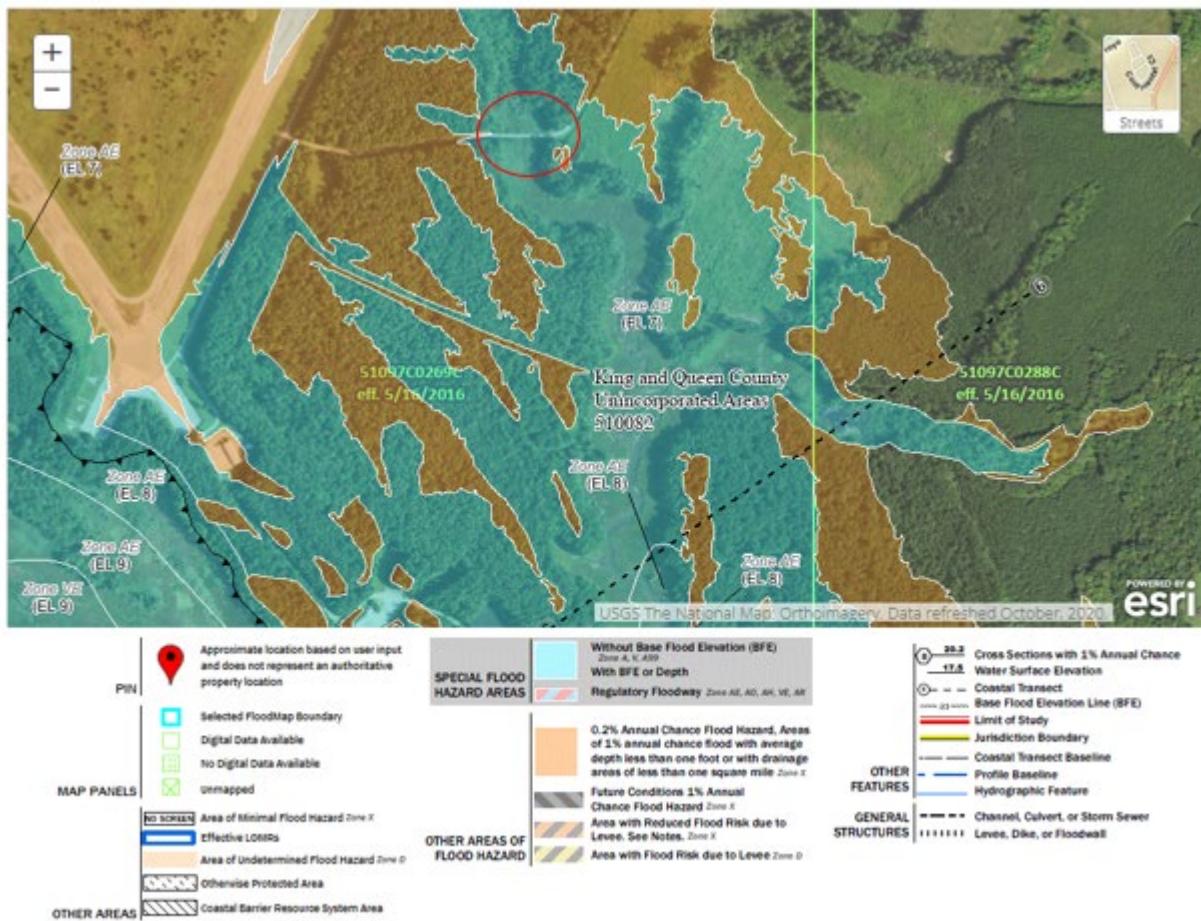
**Figure 8: Outdated Development Plan of the Site from a now defunct project**



The loss history for this property is known.

This site is located within the AE flood zone as seen in **Figure 9**. Please see **Appendix 2** for the FIRMettes (last mapped 5/16/2016) and **Appendix 3** for additional property photos.

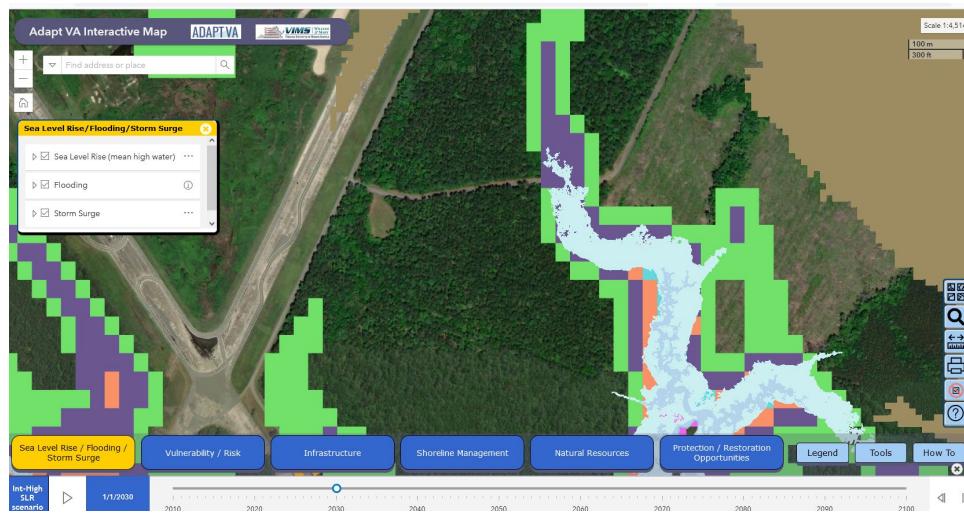
**Figure 9: Map of FEMA Flood Zones of Project Location**



Due to the project site's proximity to the water and relatively low elevation, the site is going to continue and will continue to experience impacts from flooding.

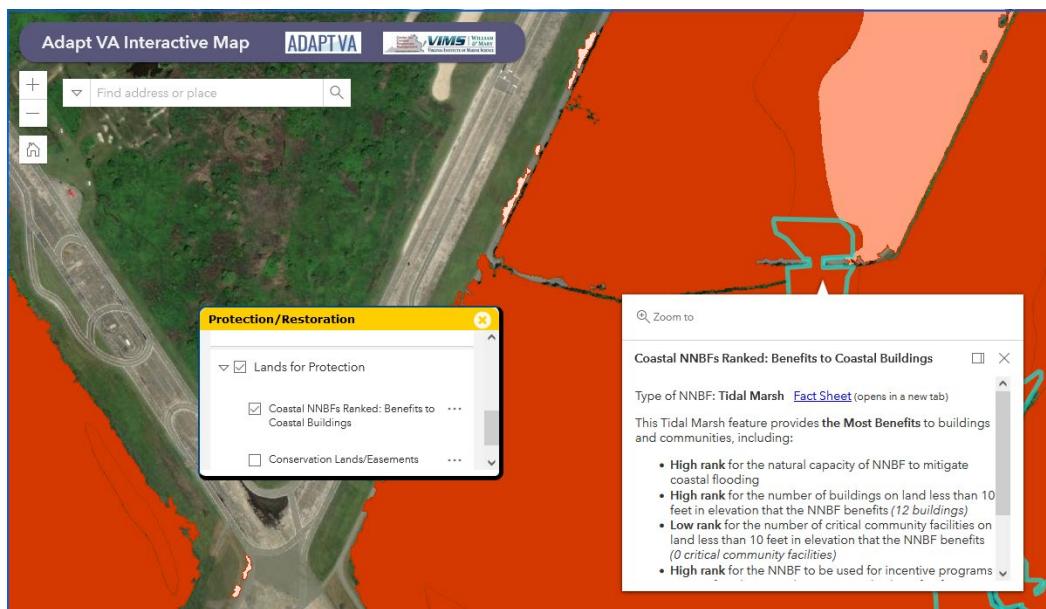
Adapt VA **Figure 10** illustrates the conditions in less than 10 years out, in 2030. The project location has and continues to be impacted by tropical, sub-tropical, and nor'easter events. **Appendix 4** lists FEMA storm events impacting the project area and provides a map with the project location. 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 Sea Level Rise and Flooding: Adapt VA**



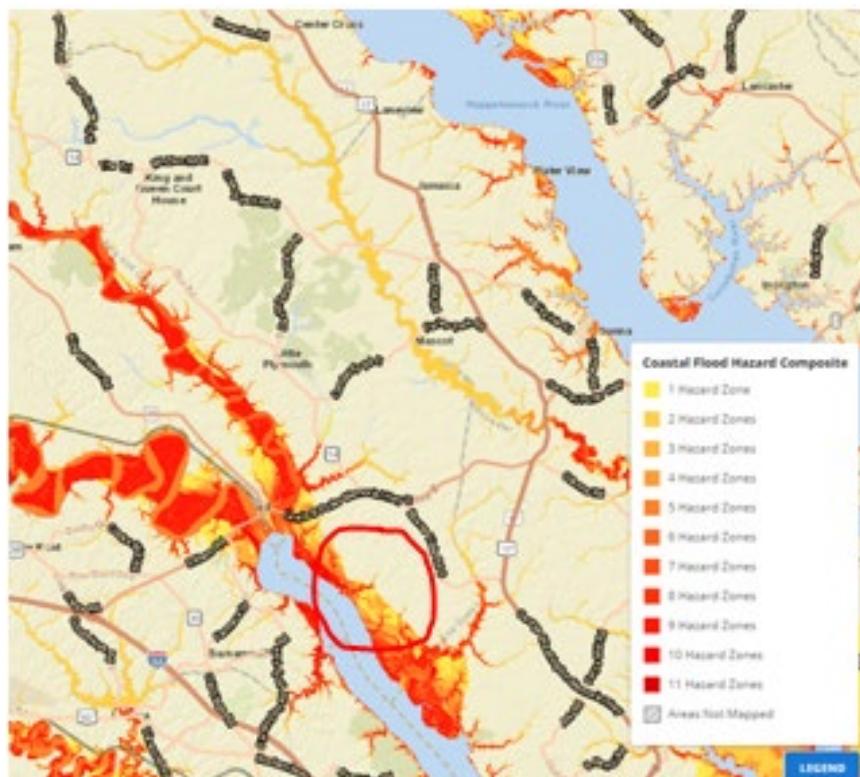
**Figure 11** illustrates the level of benefits to coastal buildings by conducting flood projects in the area.

**Figure 11. Adapt VA Map of Project Location and Elevation for NNBF Benefits**



Finally, according to NOAA's Coastal Flood Mapper, this project is at the highest risk of coastal flooding as seen in **Figure 12**.

**Figure 12. 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](https://www.mppdc.com/articles/reports/AHMP_2016_FEMA_Approved_RED.pdf)
- King & Queen County Building and Zoning Department administers the NFIP. Here is the link to the current floodplain ordinance: [http://kingandqueencounty.elaws.us/code/coor\\_ptii\\_ch3\\_art10](http://kingandqueencounty.elaws.us/code/coor_ptii_ch3_art10)

#### **NEED FOR ASSISTANCE –**

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.

MPPDC is assisting the Town of West Point as the Projects Manager and organizer for this flood project.

The need for assistance is two-fold.

First, as King & Queen County borders the Mattaponi River and the York River, the County is influenced by the water and is at high risk of coastal flooding, sea-level rise, and storm surge. Sea levels in King and Queen have risen over 1 foot since 1950, leading to more frequent and severe coastal flooding, agricultural losses, and property damage. Sea levels are projected to rise between 2-6 feet by 2070, submerging private property and reshaping King and Queen's coastline. Based on tidal gauge data from VIMS, relative sea-level rise rates ranging from 0.11-0.23 in./yr. (2.9-5.8 mm/yr.; period: 1976-2007; 10 stations) within the Chesapeake Bay region, which are the highest rates reported along the U.S. Atlantic coast (Boon et. al., 2010). Also, high tide flooding (also known as sunny day flooding) will become more frequent, putting low-lying homes and infrastructure at risk. Rising sea levels will amplify the impacts of storm surge, allowing waves and severe flooding to reach further inland, damaging homes and property. The County has implemented several preventative measures, property protection policies, public information activities, and emergency service measures to decrease impacts on communities. Therefore, this project is intended to build upon ongoing local and regional efforts to enhance community resiliency.

Second, the project site is subject to flooding with the public road being the single most critical aspect related to public safety for ingress and egress. The Town desires to make improvements to this newly acquired public asset to ensure that all who use the bridge can do so safely with awareness of when flood conditions may exist and to proceed with caution.

### **ALTERNATIVES.**

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

### **GOALS AND OBJECTIVES.**

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.
- Objective B: Stabilize the public asset to ensure that the County's tax base (and by extension the Town's asset) does not succumb to flooding.

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

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

Any modifications to the bridge area will include a nature-based design solution to protect the pristine waterway flowing under the bridge. The design could result in nutrient and sediment reduction benefit to local waters. According to a report titled, [Removal Rates of Shoreline Management Project](#), an expert Panel on Shoreline Management identified the projects that include living shoreline type plants have 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.

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. Showing other localities how to advance forward innovative flood projects is central to showcasing the Fight the Flood program and DCR's Community Flood Preparedness Flood fund.

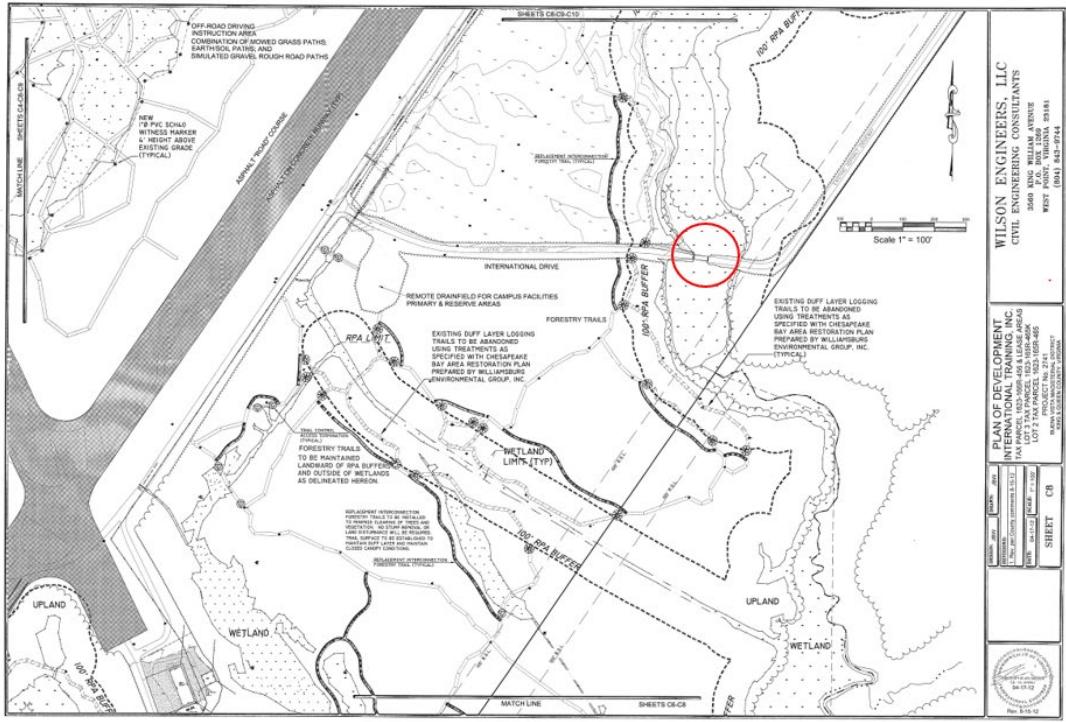
#### ***APPROACH, MILESTONES, AND DELIVERABLES.***

This design proposal application is a structural design build project incorporating flood warning signage and preservation of natural features associated with a public bridge that is owned by the Town of West Point. The Town has owned the property for years, however the bridge was installed and maintained by the tenant under the lease.

The bridge serves as a crossing for pristine tidal wetlands in an AE flood zone. The Town provides public safety training on the 700-acre public complex which the single lane bridge provides the only direct public road access to the facility. The Town has no structural information on the flood prone bridge.

**Figure 13. Project Flood Hazard Area**

The project site is located on International Drive as illustrated in the below plan of development from a now defunct project



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 Town of West Point.

The proposed project should be completed in a 12-month period. The anticipated timeline for the proposed project could be as quick as 3 months, but no more than 12 months. The timeline range is due to the potential delays in project initiation, contractor availability, and permitting.

It is anticipated that the proposed project will commence January 2022 and be completed by December 2022, as seen in Table 1.

Table 1. Project Milestone Schedule

Action Item	M1	M2	M3	M4	M5	M6
<b>Phase 1 – Environmental Scan</b>						
Hold administrative project kick off meeting	X					
Conduct environmental scan of property location in need of a flood resiliency H&H LOS study solution	X					
Select contractor to provide potential solutions	X					
Coordinate with property owner and contractor on project expectations	X	X	X	X	X	
Apply for any necessary permits if needed- NA	X	X	X			
<b>Phase 2 – Solution Study Design</b>						
Discuss structural and nature-based design solutions with contractor and property owner		X	X			
Have contractor develop design and selected solution/recommendations			X	X		
<b>Phase 3 – Strategic Implementation/Construction</b>						
Discuss strategies in moving forward with study finding					X	X
Provide a digital close out report and copy of the completed design solution along with the completed Certificate of Approval Floodplain Management form to the funding agency						X
Hold administrative project close out meeting						X

#### ***RELATIONSHIP TO OTHER PROJECTS.***

In response to emerging flood challenges, the Middle Peninsula PDC launched the Middle Peninsula Fight the Flood (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 Hazard 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 was 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 Middle Peninsula 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 public and 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.***

A maintenance plan is not applicable in this application. The proposed project is to develop a study and its cost does not require ongoing operation and future maintenance.

### ***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](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 including Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex Counties as well as 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 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.

***BUDGET NARRATIVE –***

Below is the estimated budget for the proposed flood prevention study project located in a low-income opportunity zone geographic area. Therefore, on behalf of the Town of West Point, MPPDC staff is requesting 90% funding from DCR, and the Town will provide 10% match. Please see match commitment letters from the property owners in **Attachment 6**.

Title: Town West Point Bridge Flooding				Budget (Cat. D)		
Budget Narrative (Category D)				Applicant 1		
Personnel Salaries/Wages		DCR %	Match %	Annual Salary		Budget (Cat. D)
Staff		22.25%	5.57%	\$70,000		\$5,348
Personnel				<i>Lewie's Cheat Sheet</i>	DCR	Owner
		Total		\$50,000	90%	10%
Fringe, 26.21% salaries;				45,000.00		5,000.00
		15%		7,500.00	6,750.00	750.00
				<b>\$57,500.00</b>	<b>\$51,750.00</b>	<b>\$5,750.00</b>
SubAward/SubContract Agreements					90%	10%
H&H LOS Flood Design				\$50,000	\$45,000	\$5,000
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				\$0	\$0	\$0
				<b>\$50,000</b>		
SUBTOTAL: Direct Costs						
Indirect/IDC/Facilities & Administrative Costs				<b>27.92%</b>	<b>\$9,074</b>	<b>\$8,167</b>
Total						
Other Match:						
Source of Match						
GRAND TOTAL						

**SCORING CRITERIA FOR FLOOD PREVENTION AND PROTECTION PROJECTS.**

---

## Appendix C: Scoring Criteria for Studies

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

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

Studies Eligible for Consideration		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Applicant Name:	MPPDC for the Town of West Point for project located in King and Queen		
Scoring Information			
Criterion	Point Value	Points Awarded	
<b>6. Eligible Studies (Select all that apply)</b>			
Revising floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.	<b>30</b>		
Creating tools or applications to identify, aggregate, or display information on flood risk or creating a crowd-sourced mapping platform that gathers data points about real-time flooding. This could include a locally or regionally based web-based mapping product that allows local residents to better understand their flood risk.	<b>15</b>	15	
Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA).	<b>35</b>	35	
Studies and Data Collection of Statewide and Regional Significance. Funding of studies of statewide and regional significance and proposals will be considered for the following types of studies:			
<input type="checkbox"/> Updating precipitation data and IDF information (rain intensity, duration, frequency estimates) including such data at a sub-state or regional scale on a periodic basis.	<b>45</b>		
<input type="checkbox"/> Regional relative sea level rise projections for use in determining future impacts.	<b>45</b>		
<input type="checkbox"/> Vulnerability analysis either statewide or regionally to state transportation, water supply, water treatment, impounding structures, or other significant and vital infrastructure from flooding.	<b>45</b>		
<input type="checkbox"/> Flash flood studies and modeling in riverine regions of the state.	<b>45</b>		
<input type="checkbox"/> Statewide or regional stream gauge monitoring to include expansion of existing gauge networks.	<b>45</b>		

<input type="checkbox"/> New or updated delineations of areas of recurrent flooding, stormwater flooding, and storm surge vulnerability in coastal areas that include projections for future conditions based on sea level rise, more intense rainfall events, or other relevant flood risk factors.	<b>45</b>	
<input type="checkbox"/> Regional flood studies in riverine communities that may include watershed-scale evaluation, updated estimates of rainfall intensity, or other information.	<b>50</b>	
<input type="checkbox"/> Regional hydrologic and hydraulic studies of floodplains.	<b>45</b>	
<input type="checkbox"/> Studies of potential land use strategies that could be implemented by a local government to reduce or mitigate damage from coastal or riverine flooding.	<b>40</b>	
<input type="checkbox"/> Other proposals that will significantly improve protection from flooding on a statewide or regional basis	<b>35</b>	
<b>7. Is the study area socially vulnerable? (Based on <a href="#">ADAPT VA's Social Vulnerability Index Score.</a>)</b>		
Very High Social Vulnerability (More than 1.5)	<b>15</b>	
High Social Vulnerability (1.0 to 1.5)	<b>12</b>	
Moderate Social Vulnerability (0.0 to 1.0)	<b>8</b>	8
Low Social Vulnerability (-1.0 to 0.0)	<b>0</b>	
Very Low Social Vulnerability (Less than -1.0)	<b>0</b>	
<b>8. Is the proposed study part of an effort to join or remedy the community's probation or suspension from the NFIP?</b>		
Yes	<b>10</b>	
No	<b>0</b>	0
<b>9. Is the proposed study in a low-income geographic area as defined in this manual?</b>		
Yes	<b>10</b>	10
No	<b>0</b>	
<b>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?</b>		
Yes	<b>5</b>	5
No	<b>0</b>	
<b>Total Points</b>		<b>73</b>

**SCOPE OF WORK CHECKLIST.**

<b>Scope of Work Narrative</b>	
<b>Supporting Documentation</b>	<b>Included</b>
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 <a href="#">ADAPT VA's Virginia Vulnerability Viewer</a>	<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
<b>Budget Narrative</b>	
<b>Supporting Documentation</b>	<b>Included</b>
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

The proposed project has an estimated Total budget of \$66,574  
 Requested amount: \$59,917

Title: Town West Point Bridge Flooding				Budget (Cat. D)		
Budget Narrative (Category D)				Applicant 1		
Personnel Salaries/Wages		DCR %	Match %	Annual Salary	DCR	Owner
Staff		22.25%	5.57%	\$70,000	\$5,348	\$594
Personnel					\$5,348	\$594
	<i>Lewie's Cheat Sheet</i>					
	Total	90%	10%			
Fringe, 26.21% salaries;		\$50,000	45,000.00	5,000.00	\$1,402	\$156
	15%	7,500.00	6,750.00	750.00		
Total Personnel		<b>\$7,500.00</b>	<b>51,750.00</b>	<b>5,750.00</b>	<b>\$6,750</b>	<b>\$7,500</b>
<b>Direct Cost: SubAward/SubContract Agreements</b>				<b>90%</b>	<b>10%</b>	
<i>H&amp;H LOS Flood Design</i>				\$50,000	\$45,000	\$5,000
0				\$0	\$0	\$0
0				\$0	\$0	\$0
0				\$0	\$0	\$0
0				\$0	\$0	\$0
0				\$0	\$0	\$0
0				\$0	\$0	\$0
0				\$0	\$0	\$0
Project financial services (50000/50500/55900/56100)				\$5,543	\$4,989	\$554
Facility services (52100/52200/52400/54200/54500)				\$1,580	\$1,422	\$158
Communication services (52250/52255/55150/57100/57300)				\$498	\$448	\$50
Data services (53100/53101/53200/57900)				\$150	\$135	\$15
Material services (53400/53500/57200/57500)				\$588	\$529	\$59
Consulting services (55100/56300/56400/56700)				\$715	\$644	\$72
				<b>\$59,074</b>		
<b>SUBTOTAL: Direct Costs</b>					<b>\$59,917</b>	<b>\$6,657</b>
<b>Total</b>					<b>\$59,917</b>	<b>\$6,657</b>
<b>Other Match:</b>						
<i>Source of Match</i>					<b>\$0</b>	<b>\$0</b>
<b>GRAND TOTAL</b>					<b>\$59,917</b>	<b>\$6,657</b>

Cost estimate for H&H was based on previous H&H studies.

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

**COMMISSIONERS**

## Essex County

*Hon. Edwin E. Smith, Jr.  
Hon. John C. McGruder  
Ms. Sarah Pope  
Mr. Michael A. Lombardo*

## Town of Tappahannock

*Hon. Fleet Dillard*

## Gloucester County

*Hon. Ashley C. Chircoe  
(Vice-Chairman)  
Hon. Michael R.  
Wiesbarger  
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. Monkalski  
(Treasurer)  
Mr. Otto O. Williams*

## Town of West Point

*Hon. James Pruet  
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*

8/30/21

To: DCR Staff

From: Lewie Lawrence, MPPDC Executive Director

Reff: Authorization to request for funding:

Matching funds for all construction and design projects provided under Round 2 of the Virginia Community Flood Preparedness Fund are provided by the property owner for which the project is proposed. The match commitment letter acknowledges that the owner of the project (land owner) 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).

Saluda Professional Center \* 125 Bowden Street \* PO Box 286 \* Saluda, Virginia 23149  
(Phone) 804 758-2311 \* (Fax) 804 758-3221 \* (Email) [pdcinfo@mppdc.com](mailto:pdcinfo@mppdc.com)  
<http://www.mppdc.com>

*Authorization to request for funding:*

- *Signed pledge agreement from each contributing organization*

**See also appendix 6**

Council Members:  
TINA S. GULLEY  
ROBERT J. LAWRENCE  
JOSHUA T. "JACK" LAWSON  
JAMES "JAMIE" PRUETT  
JOHN G. RAGSDALE, II  
CHRISTOPHER P. VINCENT



JAMES H. HUDSON, III  
Mayor  
DEBORAH T. BALL  
Vice Mayor  
JOHN B. EDWARDS, JR.  
Town Manager

## TOWN OF WEST POINT

November 1, 2021

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

RE: Town West Point Bridge Study- H&H, LOS and Safety Study

Dear Mr. Clyde Cristman,

Thank you for considering the Town of West Point's application to the Virginia Flood Preparedness Fund. The Town is committed to providing the required match if the project is funded as requested.

Sincerely,

A handwritten signature in blue ink, appearing to read "John B. Edwards, Jr." followed by "Town Manager".

802 Main Street  
P.O. Box 152, West Point, Virginia 23181  
(804) 843-3330 / Fax (804) 843-4364  
[www.West-Point.va.us](http://www.West-Point.va.us)

#### **IV. SUPPORTING DOCUMENTATION**

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

## APPENDIX 1

Council Members:  
TINA S. GUILLEY  
ROBERT J. LAWRENCE  
JOSHUA T. "JACK" LAWSON  
JAMES "JAMIE" PRUETT  
JOHN G. RAGSDALE, II  
CHRISTOPHER P. VINCENT



JAMES H. HUDSON, III  
Mayor  
DEBORAH T. BALL  
Vice Mayor  
JOHN B. EDWARDS, JR.  
Town Manager

### TOWN OF WEST POINT

August 5, 2021

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

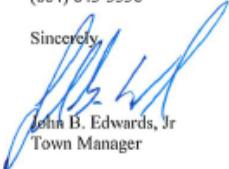
RE: Support Letter for Applications Submitted by MPPDC to Virginia Community Flood Preparedness Fund

Dear Lewie,

The Town of West Point 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 (804) 843-3330

Sincerely,  
  
John B. Edwards, Jr.  
Town Manager

802 Main Street  
P.O. Box 152, West Point, Virginia 23181  
(804) 843-3330 / Fax (804) 843-4364  
[www.West-Point.va.us](http://www.West-Point.va.us)

### Community Support Letter

## APPENDIX 2

### Project Location FIRMette

The flood map for the selected area is number 51097C0288D, effective on 10/21/2021

The flood map for the selected area is number **51097C0269D**, effective on **10/21/2021** [?](#)

#### DYNAMIC MAP



PRINT MAP/  
FIRMette

#### MAP IMAGE



DOWNLOAD  
FIRM PANEL

#### Changes to this FIRM [?](#)

- Revisions (0)
- Amendments (0)
- Revalidations (0)

[Go To NFHL Viewer »](#)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.



## APPENDIX 3

### Additional Property Photos

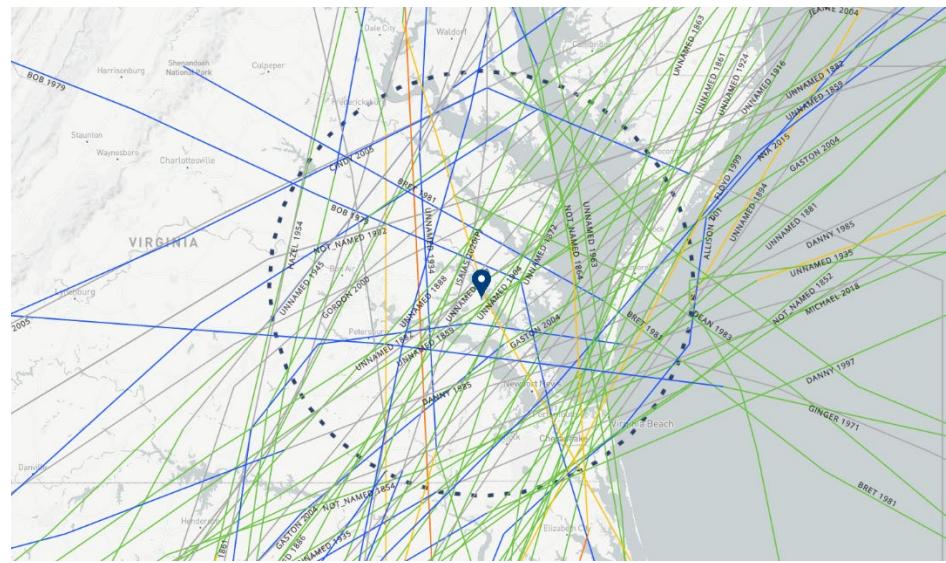


## APPENDIX 4

### List of Historic Hurricanes Impacting the Property Location

List of historic hurricanes impacting the project area.

# Hurricane List



Location: 37.479284, -76.732522

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
ISAIAS 2020(P)	Jul 23, 2020 to Aug 05, 2020	75	987	H1
NESTOR 2019	Oct 17, 2019 to Oct 21, 2019	50	996	TS
MICHAEL 2018	Oct 06, 2018 to Oct 15, 2018	140	919	H5

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
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
CHARLEY 2004	Aug 09, 2004 to Aug 15, 2004	130	941	H4
ALLISON 2001	Jun 05, 2001 to Jun 19, 2001	50	1000	TS
GORDON 2000	Sep 14, 2000 to Sep 21, 2000	70	981	H1
FLOYD 1999	Sep 07, 1999 to Sep 19, 1999	135	921	H4
DANNY 1997	Jul 16, 1997 to Jul 27, 1997	70	984	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
ALMA 1970	May 17, 1970 to May 27, 1970	70	993	H1
CAMILLE 1969	Aug 14, 1969 to Aug 22, 1969	150	900	H5

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1963	Jun 01, 1963 to Jun 04, 1963	50	1000	TS
UNNAMED 1961	Sep 12, 1961 to Sep 15, 1961	55	995	TS
BRENDA 1960	Jul 27, 1960 to Aug 07, 1960	60	976	TS
CINDY 1959	Jul 04, 1959 to Jul 12, 1959	65	995	H1
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 1949	Sep 11, 1949 to Sep 14, 1949	45	-1	TS
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 1935	Aug 29, 1935 to Sep 10, 1935	160	892	H5
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 1904	Sep 08, 1904 to Sep 15, 1904	70	-1	H1
NOT_NAMED 1902	Oct 03, 1902 to Oct 13, 1902	90	970	H2
UNNAMED 1902	Oct 03, 1902 to Oct 13, 1902	90	970	H2

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
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 1894	Oct 01, 1894 to Oct 12, 1894	105	-1	H3
UNNAMED 1889	Sep 12, 1889 to Sep 26, 1889	95	-1	H2
UNNAMED 1888	Sep 06, 1888 to Sep 13, 1888	50	999	TS
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 1881	Sep 07, 1881 to Sep 11, 1881	90	975	H2
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
NOT_NAMED 1867	Aug 10, 1867 to Aug 18, 1867	45	-1	TS
NOT_NAMED 1864	Jul 23, 1864 to Jul 26, 1864	35	-1	TS
UNNAMED 1863	Sep 16, 1863 to Sep 19, 1863	60	-1	TS
NOT_NAMED 1861	Oct 31, 1861 to Nov 03, 1861	60	992	TS
UNNAMED 1861	Sep 27, 1861 to Sep 28, 1861	70	-1	H1
NOT_NAMED 1861	Sep 22, 1861 to Sep 29, 1861	70	989	H1

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1859	Sep 15, 1859 to Sep 18, 1859	70	-1	H1
NOT_NAMED 1858	Aug 11, 1858 to Aug 20, 1858	45	994	TS
UNNAMED 1856	Aug 19, 1856 to Aug 21, 1856	50	-1	TS
NOT_NAMED 1854	Sep 10, 1854 to Sep 14, 1854	65	-1	H1
UNNAMED 1854	Sep 07, 1854 to Sep 12, 1854	110	938	H3
NOT_NAMED 1852	Aug 28, 1852 to Aug 31, 1852	50	-1	TS

## **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

Council Members:  
TINA S. GULLEY  
ROBERT J. LAWRENCE  
JOSHUA T. "JACK" LAWSON  
JAMES "JAMIE" PRUETT  
JOHN G. RAGSDALE, II  
CHRISTOPHER P. VINCENT



JAMES H. HUDSON, III  
Mayor  
DEBORAH T. BALL  
Vice Mayor  
JOHN B. EDWARDS, JR.  
Town Manager

#### TOWN OF WEST POINT

November 1, 2021

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

RE: Town West Point Bridge Study- H&H, LOS and Safety Study

Dear Mr. Clyde Cristman,

Thank you for considering the Town of West Point's application to the Virginia Flood Preparedness Fund. The Town is committed to providing the required match if the project is funded as requested.

Sincerely,

  
John B. Edwards, Jr.  
Town Manager