MIDDLE PENINSULA
PLANNING DISTRICT COMMISSION

November 28, 2022

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. Matthew Wells,

Enclosed is one application for a flood protection and prevention project that involves implementation of nature-based shoreline solutions. The project is currently at the construction stage. Construction projects are requesting funds to implement projects which have approved permits or are nearing permit approval prior to construction of a nature-based flood protection solution.

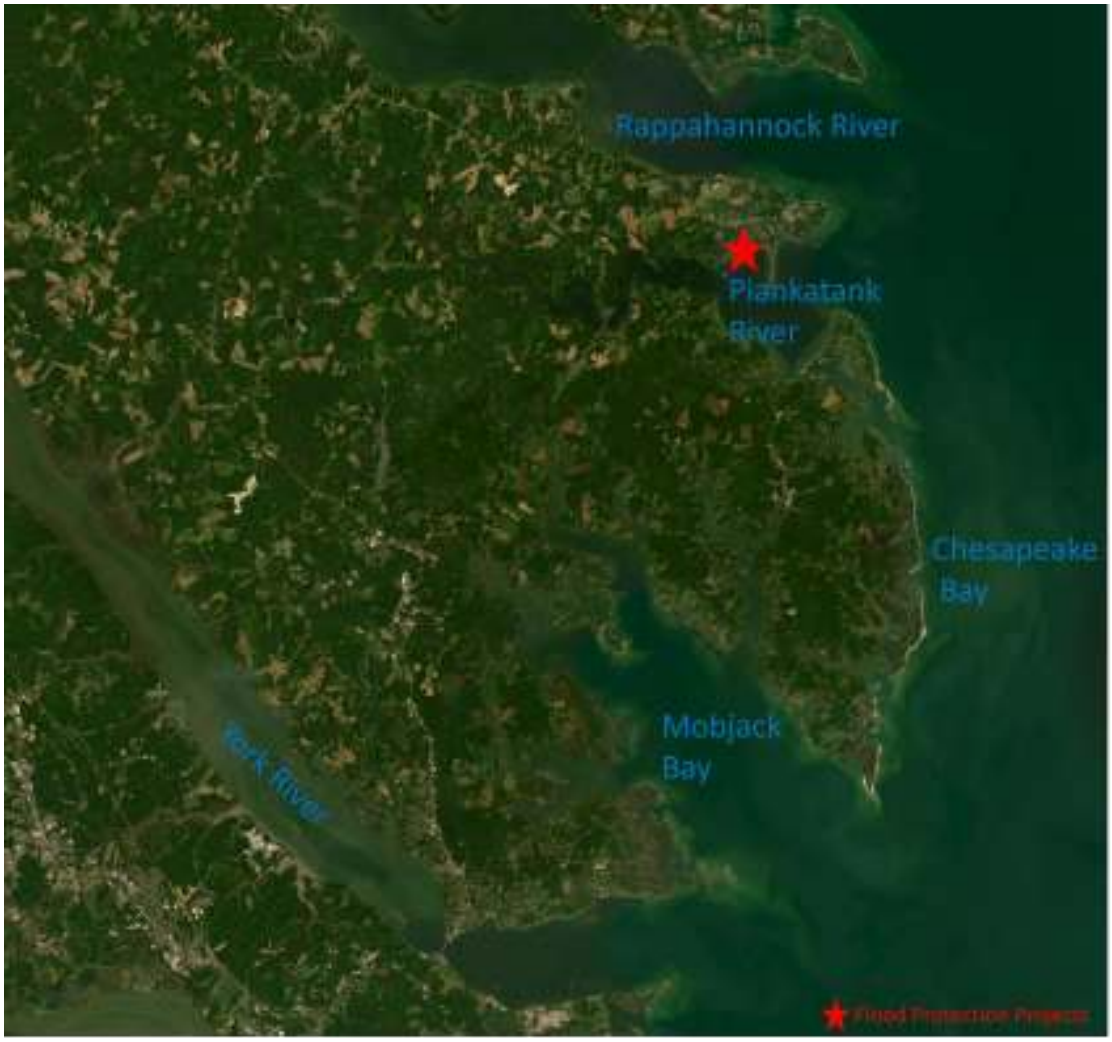
The application has been modified to include additional information as requested by DCR staff for the Supplemental Round 3 of funding. The primary modifications include addressing adverse impacts to adjacent properties, review of the project by a Certified Floodplain Manager, and additional information for how the project will be maintained over the lifespan of the project, and additional language emphasizing the flood protection benefits of the project.

Below is a short summary and map showing the location of the proposed construction project in the areas of the Middle Peninsula within the Piankatank River watershed:

A. **Moore Creek Nature Based Shoreline Management Construction Project** (CID): 510098 Total Cost (from individual project application): $86,652
This project proposes to construct a nature-based solution on a private property located on Moore Creek in Middlesex County. The nature-based solution will involve the installation of 50 linear feet (LF) by 4 feet high of Envirolok Bags planted with marsh grass; a 179 LF perimeter of ReadyReefs to mean low water, backfilled sand and planted with marsh grass to make a living shoreline; and 143 LF by average of 3' high more Envirolok bags will be stacked to prevent erosion higher up the bank.

The total project cost for the Piankatank River watershed construction application is **$86,652** and MPPDC staff are requesting **$69,322** from DCR to support this work.

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



We consider helping both public and private entities manage flooding a critical and essential function of government.

Thank you for considering the enclosed proposed projects. If you have any questions about the enclosed, please contact me by email at llawrence@mppdc.com or by phone at 804-758-2311.

Sincerely,

Lewis Lawrence
Executive Director

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Virginia Department of Conservation and Recreation Virginia Community Flood Preparedness Fund
Flood Prevention and Protection Project

PROJECT TITLE: Moore Creek Nature Based Shoreline Management Construction

Project Name of Local Government: Middle Peninsula Planning District Commission

Category of Grant Being Applied for (check one):

____Capacity Building/Planning X Project _____Study

NFIP/DCR Community Identification Number (CID): Middlesex County (510098)

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
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 X **No** ____

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): Middlesex County
NFIP Community Identification Number (CID#) (See appendix F): 510098

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): 51119C0240

Total Cost of Project: $86,652

Total Amount Requested: $69,322

INTRODUCTION –

This project proposes to construct a nature-based solution on a private property located on Moore Creek in Middlesex County. The nature-based solution will involve the installation of 50 linear feet (LF) by 4 feet high of Envirolok Bags planted with marsh grass; a 179 LF perimeter of ReadyReefs to mean low water, backfilled sand and planted with marsh grass to make a living shoreline; and 143 LF by average of 3' high more Envirolok bags will be stacked to prevent erosion higher up the bank.

FEMA, Virginia General Assembly, DCR's Floodplain Management Program, and the Middle Peninsula 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 and work there. These hazards include flooding, drought, hurricanes, landslides, wildfires and more. 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 (www.FightTheFloodVA.com). This proposal is a Nature-based solution which utilizes and incorporates sustainable planning, design, environmental management, and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience. Further, this proposal incorporates natural features and 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. 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 (*FEMA Building Community Resilience with Nature Based Solutions,* June 2021).

This project will be a partnership between the MPPDC and one private property owner and is supported by Middlesex County (See the community support letter in **Attachment 1**).

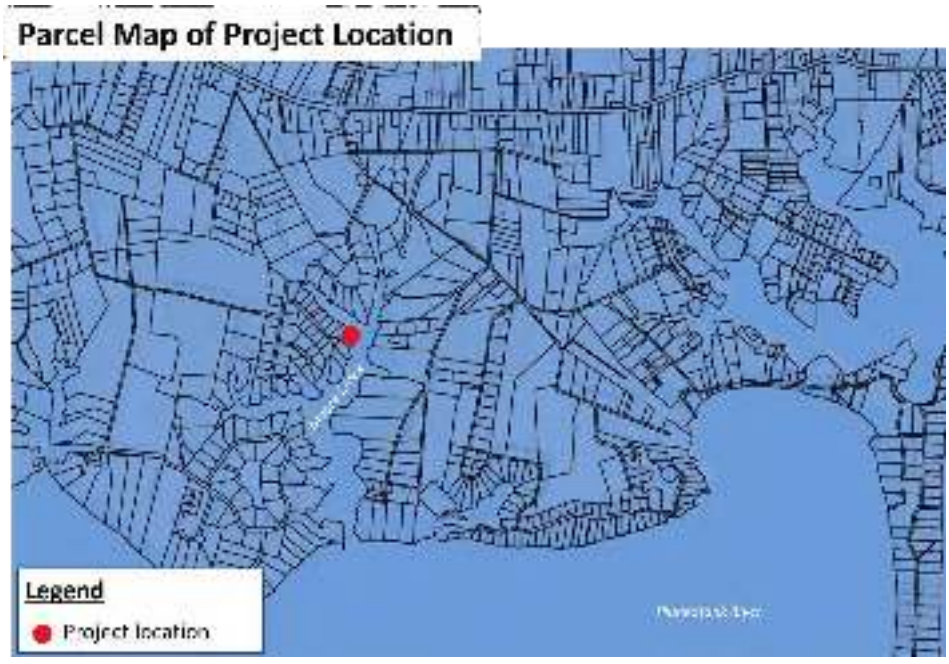
- A link or copy to the approved resilience plan: https://fightthefloodva.com/wp-content/uploads/2021/08/Approved-8_19_DCR-packet_letterandplan.pdf
- Middle Peninsula All Hazards Mitigation Plan (2016): https://www.mppdc.com/articles/reports/AHMP_2016_FEMA_Approved_RED.pdf within the plan please see Section 4 (page 25). This Section includes historical hazard data within the region.
- Here's a link to the Middlesex County Comprehensive Plan: https://www.co.middlesex.va.us/DocumentCenter/View/1275/Middlesex-County-Comprehensive-Plan-Revised-3-3-20-PDF?bidId=

PROJECT LOCATION INFORMATION –

This project proposes to install living shorelines on one private property on Moore Creek in Middlesex County (**Figure 1 and 2**).

FIGURE 1: COUNTY MAP OF PROJECT LOCATION.

FIGURE 2: PARCEL MAP OF PROJECT LOCATION.



Middlesex County is located at Virginia's Middle Peninsula and is an agriculture, forestry, and water- based economy. The County is comprised of 130 square miles of land 80 miles of shorelines. Based on 2020 Census Data, Middlesex County's population totals 10,625 which. According to DCR guidelines, a portion of the County is considered a low-income geographic area. In **Figure 3** 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 3: MAP OF MIDDLE PENINSULAS LOW INCOME GEOGRAPHIC AREAS QUALIFYING UNDER DCR GUIDELINES.

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.

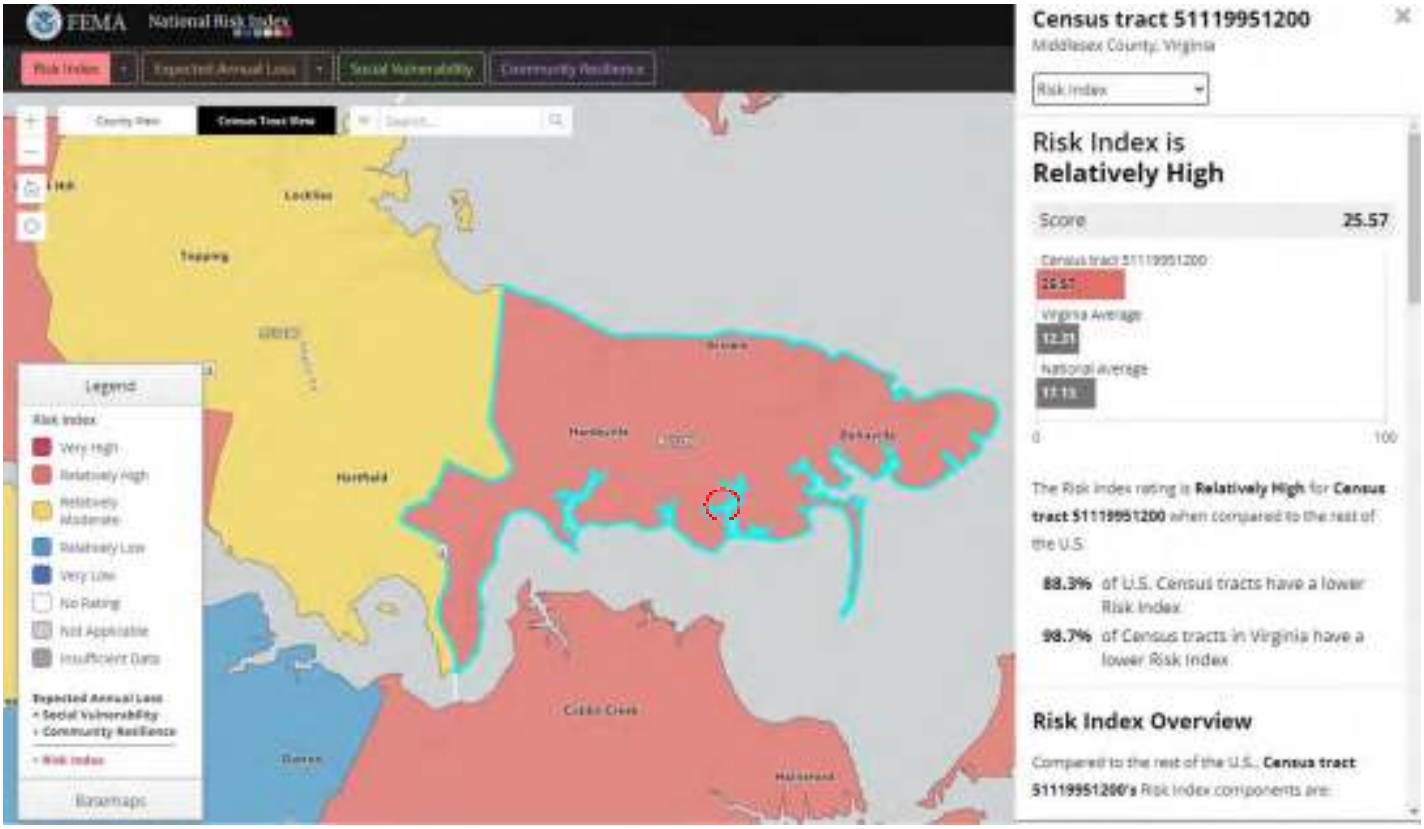
Please see **Figure 4** for a zoomed in map of the project location and the green low-income area overlay. This shows that the project location is within the low-income area.

FIGURE 4: 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 (**Figure 5**). This is also supported by FEMA's National Risk Index which identifies the project area as having a relatively high-risk index **Figure 6**).

FIGURE 5: VIRGINIA'S SOCIAL VULNERABILITY INDEX SCORE MAP FOR THE PROJECT LOCATION.

FIGURE 6: FEMA NATION RISK INDEX OF CENSUS TRACKS WHERE THE PROJECT LOCATION.

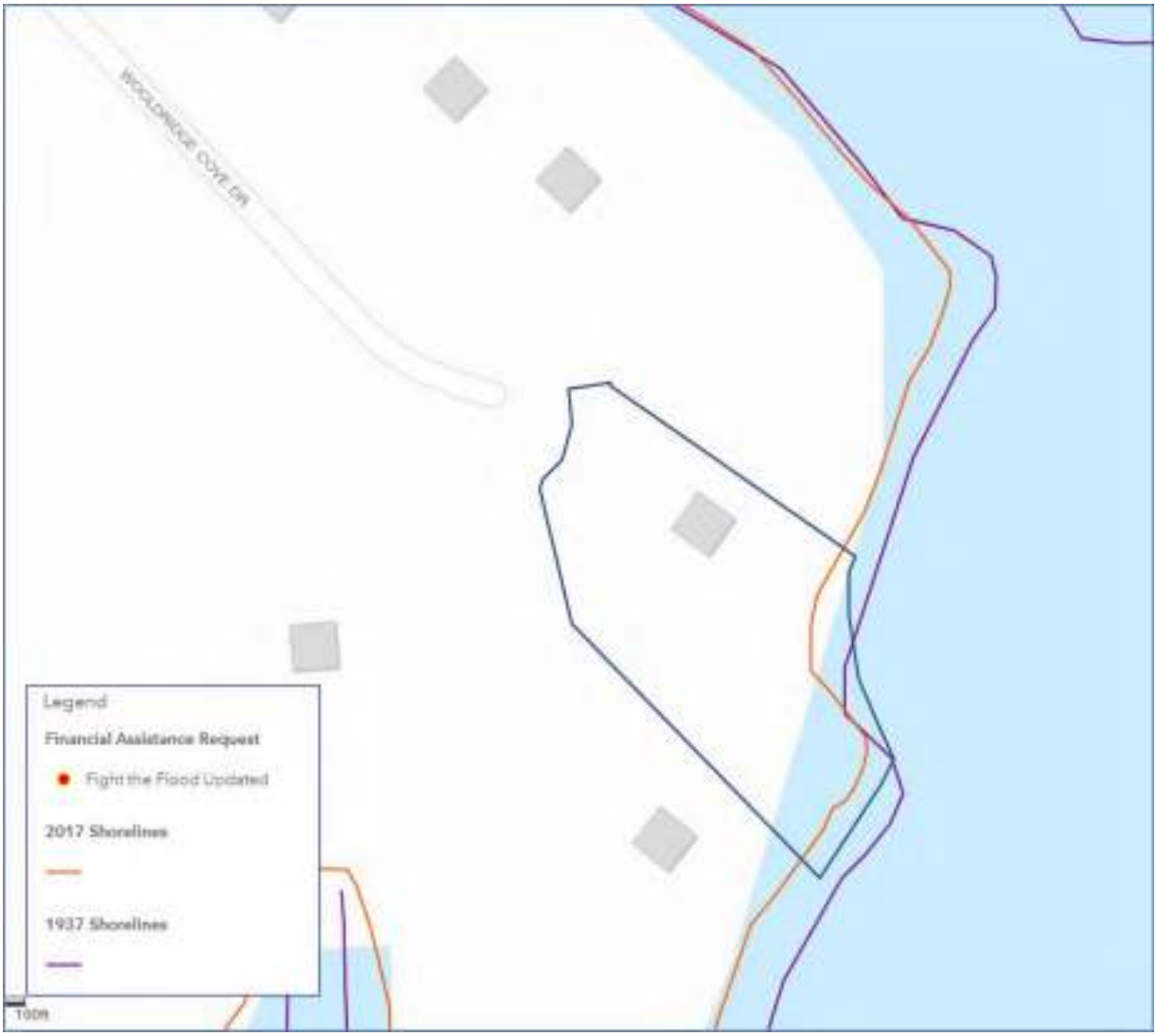


The project is located at 160 Wooldridge Cove Drive Deltaville, VA 23043 (37.54430, -76.35740). A 179-linear foot bioengineered structure, 176 linear feet of living shoreline, and 40 cubic yards of sill fill will be constructed at this project location. Within the project area there is one structure on the property including 1 residential home. The structure is not identified as severe repetitive loss structure or repetitive loss structures. This property is located within the X flood zone; however, since the project location will be on the property's shoreline this falls into the AE Zone (**Figure 7**). Please see **Attachment 2** for the FIRMettes (last mapped 5/18/2015).

FIGURE 7: MAP OF FEMA FLOOD ZONES.

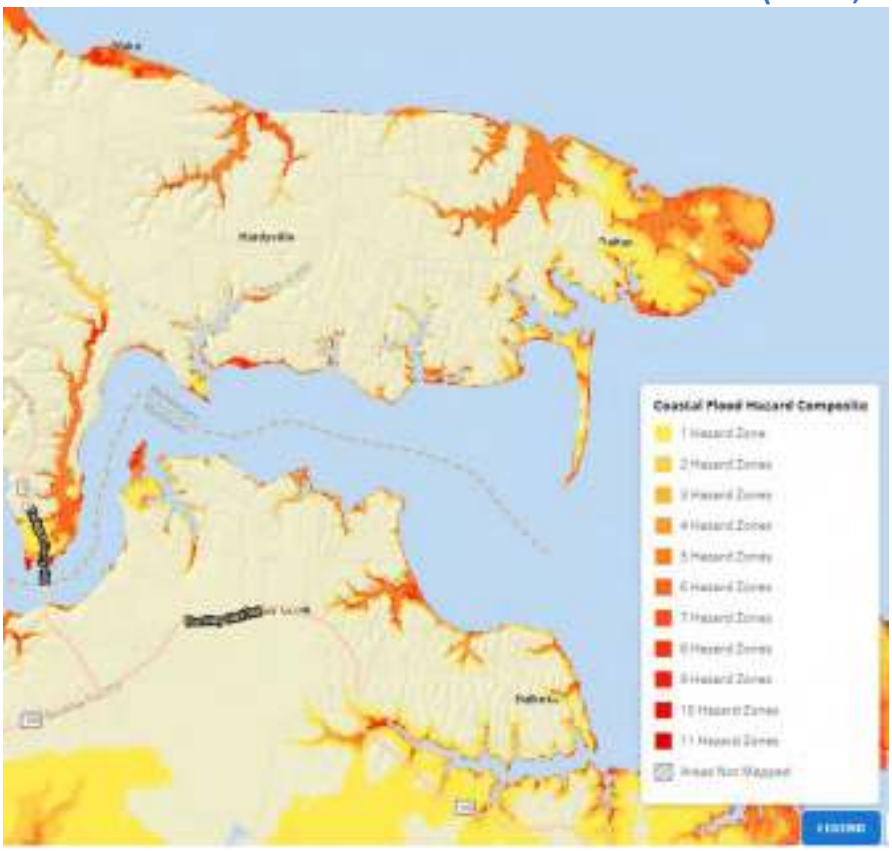
Due to the project site's proximity to the water and relatively low elevation, the site has an extensive history of experiencing flooding events that have resulted in significant impacts to infrastructure and the environment. Based on the historical shoreline data from the Virginia Institute of Marine Science Shoreline Studies Program, **Figure 8** 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 4,363.8 square feet of shoreline. The project location has and continues to be impacted by tropical, sub-tropical, and nor'easter events. **Attachment 3** lists 79 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 8: PROJECT LOCATION AND MAP OF THE SHORELINE CHANGE BETWEEN 1937 AND 2017. PLEASE NOTE THAT THE PROJECT AREA PARCEL IS OUTLINED IN WHITE.



Finally, according to NOAA's Coastal Flood Mapper, this project is at the highest risk of coastal flooding (**Figure 9**).

FIGURE 9: MAP OF PROJECT LOCATION AND RISK OF COASTAL FLOODING (NOAA, 2021).



For more information about this project area please see:

- The Middle Peninsula All Hazards Mitigation Plan identifies all hazards that impact the region -

https://www.mppdc.com/articles/reports/AHMP_2016_FEMA_Approved_RED.pdf .

- Middlesex County Building and Engineering Department administers the NFIP. Here is the link to the current floodplain ordinance: https://www.co.middlesex.va.us/DocumentCenter/View/422/Floodplain-Management- PDF

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.

The need for assistance is two-fold.

First, as Middlesex County borders the Rappahannock and Piankatank Rivers, the County is influenced by the water and is at high risk of coastal flooding, sea-level rise, and storm surge. Sea levels in Middlesex County 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 Middlesex County'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). In addition to sea-level rise, Middlesex County has a history of being impacted by hurricanes and tropical storms. As storms pass over or near the coast, the atmospheric pressure drops, causing a large volume of sea water to build up, eventually being pushed ashore by the storm's winds causing a storm surge. In Middlesex County, strong East and Northeast winds can push water from the Chesapeake Bay into the mouth of the York and Rappahannock Rivers and Mobjack Bay, flooding much of the county's low-lying areas (Middle Peninsula Planning District Commission, 2005). Additionally, when a storm makes landfall at high tide, the storm surge and the added water from the tidal fluctuation combine to create a "storm tide". In Middlesex County, tidal waters fluctuate twice daily from 1.2 feet above mean sea level to 1.2 feet below (FEMA 1987, 6). 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 will build on other local efforts move toward becoming a more resilient community.

Second, at this project location, the shoreline is experiencing flood-induced erosion and undercutting of the bank. The north end of the property currently has Envirolok bags to prevent erosion and now the homeowner is looking to duplicate this effort on the south side of the property to the property line. Based on the photos in **Figure 10** the bank is eroding, and it is threatening the vegetation and trees along the bank. Without offering this section of shoreline some protection with the installation of a nature-based shoreline protection solution, this bank will continue to erode and the vegetation and trees on the shoreline will most certainly be lost. This will ultimately bring water closer to the structures on the property and increase the overall flood vulnerability of the property. Please see **Figure 10** for project location photos and **Attachment 4** for more photos.

FIGURE 10: PHOTOS OF THE PROJECT LOCATION.

Shoreline. Envirolok Bags are shown of the right and on the left is the eroding shoreline where the Envirolok Bags are planned to be installed to the property line.

Close-up of the bank erosion on the shoreline. This is where the Envirolok Bags are planned to be installed.

ALTERNATIVES –

Alternatives are not applicable to this project. A living shoreline is feasible at this location and therefore required per VMRC regulations. This project employs a nature-based solution, and this project cost is not greater than $3 Million.

GOALS AND OBJECTIVES –

This project proposes to remove the failing bulkhead which has hardened the shoreline for years and will be replaced with a nature-based solution. The nature-based solution is based on the DCR Flood Preparedness Fund definition: "*Nature-based solution" means an approach that reduces the impacts of flood and storm events through the use of environmental processes and natural systems. A nature-based solution may provide additional benefits beyond flood control, including recreational opportunities and improved water quality. This includes a project that reduces these impacts by protecting, restoring, or emulating natural features.* The project stie will use Evirolok bags. The Envirolok bag is a nonwoven geotextile produced by needle-punching together 100% synthetic staple fibers, in a random network, forming a high strength, dimensionally stable fabric. The synthetic fibers are specially formulated to resist ultraviolet light deterioration and are inert to commonly encountered soil chemicals. The fabric will not rot or mildew, is non-biodegradable, and is resistant to damage from insects and rodents. For more information about the Envirolok bags and for the permit package for the project area please see **Attachment 5**.

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 approach.
- Objective B: Stabilize the shoreline to ensure that the County's tax base does not erode.

Goal 2: Improve water quality

- Objective A: Construct a living shoreline to capture nitrogen, phosphorus, and sediment.

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.

The MPPDC anticipates that the living shoreline installed at this project location will:

1. **Stabilize the shoreline and reduce the overall erosion rate at the project location**. According to FEMA and NOAA living shorelines are more resilient again storms than bulkheads. With the installation of sills these structures will run parallel to the existing or vegetative shoreline, reduce wave energy, and prevent erosion. This will protect the land and reduce the erosion on the property. 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.

The proposed project was confirmed for the MPPDC by Matthew C. Burnette PG, PH, CFM or Holly White AICP, CFM.

2. **Provide ecosystem services to the community.** Since this project is proposing the installation of living shorelines, this project will have 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 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. Therefore, with a proposed project of 176 linear feet of living shoreline this has the ability of removing 2.14368 pounds of nitrogen per year, 1.51536 pounds of phosphorus per year and 7,392 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, the planting will offer more cover and protection from prey.

3. **Prevent loss of property and life.** 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 Middlesex County, which is local government.

APPROACH, MILESTONES, AND DELIVERABLES –

This project will follow the designs outlined and approved in the Joint Permit Application. Upon issuance of the permits for this project, VMRC has analyzed the upstream and downstream impacts of this project using the best available science, as per state law. Please see **Attachment 5** for the JPA application, Design, and Permit Package. The below table outlines the components of the nature-based solution and what will be installed at the project location, as permitted by Virginia Marine Resource Commission (VMRC).

	Total Project Location
Sill Fill	40 Cubic Yards
Bioengineered Structure	179 Linear Feet
Living Shoreline	176 Linear Feet

The anticipated timeline for this project could be as quick as 1 year, but no more than two years. The timeline range is due to the potential delays in the construction industry or delays caused by COVID, including supply shortages. Having a two-year timeline will offer potential

windows for planting the living shoreline. To explain, the Chesapeake Bay Foundation recommends that perennials and grasses for living shorelines should be planted during peak growing season (in mid-to-late summer) to allow enough time for their root systems to become established before they go dormant in the late Fall. Trees and shrubs should be planted in Spring and Fall when there is adequate rainfall to help them develop strong roots and leafy growth.

Below is the project timeline and project milestones for this project.

- Receive funding notice - December 2022
- Coordinate with property owners and the project contractor ReadyReef Inc to review project timeline and project expectations – January 2023
- Initiate site preparation at the project location - January 2023 to July 2023
- Construction of the living shoreline – June 2023 to September 2023
- Project Close out – December 2023

Concerning Adverse Impacts

Additionally, the applicant and the property owner recognize the importance to do no harm to land owned by the Commonwealth nor the adjacent property owners as result of the construction elements of this project. The proposed project will be constructed under the auspices of experienced contractors who understand that adverse impacts must be avoided and considered in the design and implementation of the project. The proposed project will work with the permitting agency, designers, and contractors to ensure that the project is built to and functions at the level of the design specifications to ensure that no adverse impacts will occur.

RELATIONSHIP TO OTHER PROJECTS –

For over 40 years the Middle Peninsula Planning District Commission (MPPDC) 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.

The proposed project is a priority project generated from the Middle Peninsula Regional Flood Resilience Plan, which was approved by DCR during August 2021. The Flood Resiliency Plan serves as the MPPDC's guiding document for its flood resiliency programs and is comprised of two primary MPPDC-approved policy documents which form the implementation and foundation of the Middle Peninsula flood protection approach and are indirectly and directly supported by multiple specific regional planning documents, both approved by various required federal, regional, or local partners as required by statute.

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 (MPPDC Website)
- 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, MPPDC Approved March 2021
- Middle Peninsula VDOT Rural Long Range Transportation Plan - MPPDC Approved ~annually

Short Term Implementation

- Middle Peninsula Planning District Commission Fight the Flood Program Design MPPDC Commission (approved June 2020 Chairman approved 8/6/21 update)
- Middle Peninsula Planning District Commission Living Shoreline Resiliency Incentive Funding Program-Virginia Revolving Loan Fund Program Design and Guidelines (approved 2015)

As the MPPDC has continuously worked on flooding and coastal resiliency topics, **Attachment 6** lists the projects and short description of relevant projects. 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 MPPDC 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 MPPDC Commission authorized staff to develop the **Middle Peninsula Fight the Flood (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, MPPDC staff have partnered with private property owners that have registered for the FTF program to assist them in finding funding for their shoreline.

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 –

It is important to ensure that the public investment of DCR CFPF funding be protected should the project not withstand future conditions. As such, MPPDC staff will work with legal counsel to develop an agreement to be signed by each party which outlines the terms necessary to ensure the public investment is maintained over the duration of the project.

CRITERIA –
Describe how the project meets each of the applicable scoring criteria contained in Appendix B and provide the required documentation where necessary. Documentation can be incorporated into the Scope of Work Narrative or included as attachments to the application. Appendix B must be completed and submitted with the application.

For local governments that are not towns, cities, or counties, the documentation provided for the criteria below should be based on the local government or local governments in which the project is located and/or directly impacts.

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?**
   YES.
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?**
   YES. Here's the 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?**
   YES. Please see **Attachment 1**
4. **Has the applicant provided evidence of an ability to provide the required match funds?**
   YES. Please see the match commitment letter in **Attachment 8**
5. **Has the applicant demonstrated to the extent possible, the positive impacts of the project or study on prevention of flooding?**
   YES.

BUDGET NARRATIVE -
For applications submitted under MPPDC Round 2 proposals that resides in a low-income area or opportunity zone the following applies to the submitted budget. If the applicant does not, then the following does not apply: For projects within low-income areas and opportunity zones, the budgets are being submitted with budgets that reflect a 70:30 grant to match ratio even though the program manual states that these projects are eligible for 80:20 match for being in low-income areas and opportunity zones. In response to the DCR letter addressed to the MPPDC dated October 20, 2021, which eliminated the ability of MPPDC applicants who reside in a low-income area or opportunity zone to request 80% state funding. We respectfully request that DCR reconsider applying the determination required for Round 1 proposals on the MPPDC Round 2 proposals since the grant manual states that all applicants who reside in a low-income area or opportunity zone should be funded at the level that they qualify for. Should DCR agree to award projects located in low-income areas or opportunity zones at the levels

indicated within the grant manual, the budgets can be adjusted when contracts are awarded to ensure consistency with the grant manual.

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. Also please note that the cost estimates for the construction of this project were supplied by the contractor, Ready Reef, LLC. Please see **Attachment 7**.

In summary:
***Estimated total project cost*:** $ 86,652
***Amount of funds requested from the Fund (70% project total)*:** $ 69,322

Finally, please see the authorization to request for funding in **Attachment 9.**

Budget Narrative (Category D)							Budget (Cat. D)
					Applicant I		
Personnel Salaries/Wages	**DCR %**	**Match %**	**Annual Salary**		**DCR**	**Owner**	**Total**
Staff	[illegible]	[illegible]	$10,000		$6,356	$1,589	$7,944
Personnel	*Lewis's Cheat Sheet*		**DCR**	**Owner**	$6,356	$1,589	$7,945
		Total	80%	20%			
Fringe, 26.21% salaries:		$66,845	53,476.00	13,369.00	$1,666	$416	$2,082
	15%	10,026.75	8,021.40	2,005.35			
Total Personnel		**76,871.75**	**61,497.40**	**15,374.35**	$8,022	$2,005	$10,027
Direct Cost: SubAward/SubContract Agreements					**80%**	**20%**	
Enviro Lock				$29,887	$23,910	$5,977	$29,887
I ft Reef				$17,472	$13,978	$3,494	$17,472
Sand pack and Plaus 1800+2880+2880				$7,560	$6,048	$1,512	$7,560
conveyor sand and equipment rental 2400+ 3626				$6,026	$4,821	$1,205	$6,026
tree removal and yard repair				$900	$720	$180	$900
Legal Procurement and Financing/deeds of Trust				$5,000	$4,000	$1,000	$5,000
0				$0	$0	$0	$0
0				$0	$0	$0	$0
Project financial services (50000/50500/51900/56100)				$5,974	$4,779	$1,195	$5,974
Facility services (52100/52200/52400/54200/54500)				$1,703	$1,363	$341	$1,703
Communication services (53250/53255/53150/57160/57300)				$537	$429	$107	$537
Data services (53100/53101/54200/57900)				$162	$129	$32	$162
Material services (53400/53500/57200/57500)				$633	$507	$127	$633
Consulting services (55100/56500/56400/56700)				$771	$617	$154	$771
				$76,625			
SUBTOTAL: Direct Costs					$69,322	$17,330	$86,652
Total					**$69,322**	**$17,330**	**$86,652**
Other Match:							
Source of Match					$0	$0	$0
GRAND TOTAL					**$69,322**	**$17,330**	**$86,652**

Appendix B: Scoring Criteria for Flood Prevention and Protection Projects

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

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 a town, city, or county</u>, 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	☑ 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 or regional plan for purposes of allowing inundation, retreat, or acquisition of structures.	**50**	
☐ Wetland restoration, floodplain restoration ☐ Living shorelines and vegetated buffers. ☐ Permanent conservation of undeveloped lands identified as having flood resilience value by *ConserveVirginia* Floodplain and Flooding Resilience layer or a similar data driven analytic tool ☐ Dam 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.	**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 theChesapeake 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 witha 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

Appendix D: Checklist All Categories

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

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

Attachment 1: Community Support Letter

Matthew L. Walker
County Administrator
877 General Puller Hwy
Saluda, VA 23149
804-758-4330
m.walker@co.middlesex.va.us

Betty S. Muncy
Assistant County Administrator

Ann Marie S. Ricardi
Assistant County Administrator

County of Middlesex
Office of the County Administrator

July 20, 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 Mr. Lawrence:

Middlesex County supports all eligible applications requesting funding under the DCR Flood Preparedness Fund. Proposals submitted by MPPDC on behalf of our constituents are part of our necessary governmental functions and are 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 (FTF) Program serves as the region's flood resiliency coordination program. The MPPDC Living Shoreline Program Design and the MPPDC FTF Program provide the operational and administrative oversite for resiliency planning, coordination and implementation for our constituents suffering from flooding challenges. These programs assist to secure the tax base of coastal localities and reduce the inherent risk to the delivery of essential governmental services, including public safety, posed by coastal storms and recurrent flooding of all types.

The FTF and the Living Shoreline programs exist to help the owners of flood-prone properties access programs and services to better manage challenges posed by flood water and to direct 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 constituents, to support the public purpose(s) for which the funds, such as the Virginia Community Flood Preparedness Funds, have been allocated.

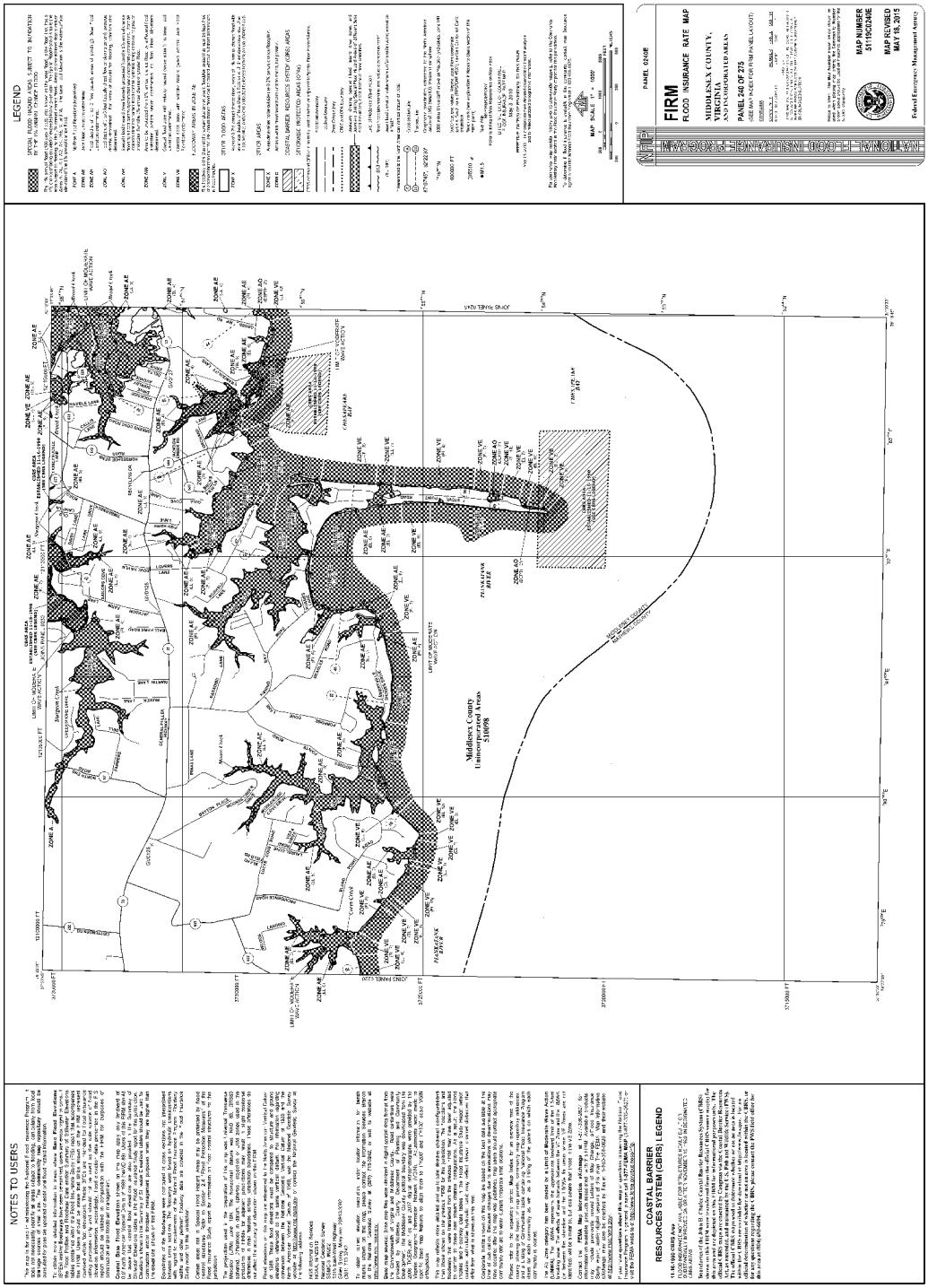
Should you have any questions concerning our support for the work of the MPPDC, I can be reached at 804-758-4330.

Respectfully,

Matt Walker
County Administrator

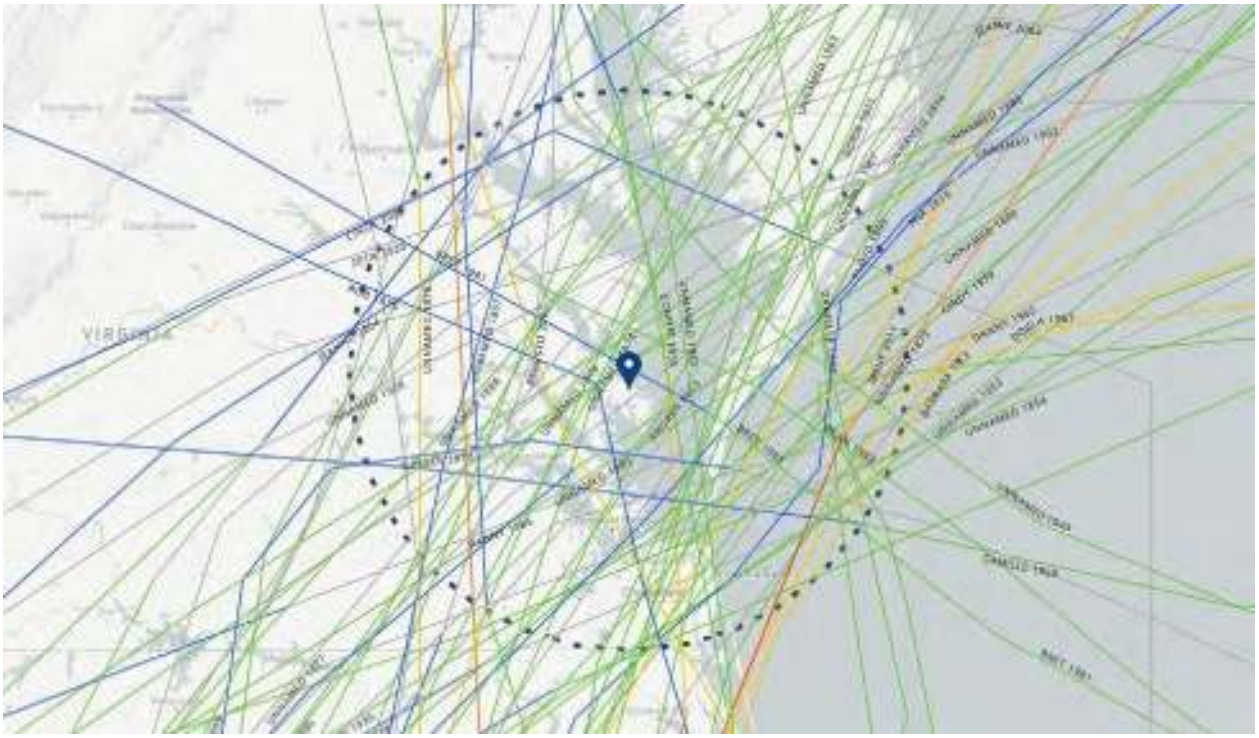
Attachment 2: Project Location FIRMette

(FIRMette #: **51119C0240**)



Attachment 3: List of historic hurricanes impacting the project area.

Hurricane List



Search Filter Criteria

Location: 37.54430, -76.35740

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
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
IRENE 2011	Aug 21, 2011 to Aug 30, 2011	105	942	H3
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
DANIELLE 1992	Sep 22, 1992 to Sep 26, 1992	55	1001	TS
CHARLEY 1986	Aug 13, 1986 to Aug 30, 1986	70	980	H1
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

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
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
DORIA 1967	Sep 08, 1967 to Sep 21, 1967	75	973	H1
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
BARBARA 1953	Aug 11, 1953 to Aug 16, 1953	80	973	H1
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

STORM NAME	DATE RANGE	MAX WIND SPEED	MIN PRESSURE	MAX CATEGORY
UNNAMED 1907	Jun 24, 1907 to Jun 30, 1907	55	-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 1894	Oct 01, 1894 to Oct 12, 1894	105	-1	H3
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
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 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 1879	Aug 13, 1879 to Aug 20, 1879	100	971	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

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

Attachment 4: Photos of shoreline at project location.

Attachment 5: JPA, Design, and Permit Package

From: Chris Davis
To: jpa.permits@mrc.virginia.gov
Cc: [redacted]
Subject: JPA Application attached
Date: Tuesday, December 8, 2020 9:52:11 AM
Attachments: [redacted]

Received by VMRC December 8, 2020 /blh

- DEQ: Permit application fees required for Virginia Water Protection permits – while detailed in 9VAC25-20 – are conveyed to the applicant by the applicable DEQ office (http://www.deq.virginia.gov/Locations.aspx). Complete the Permit Application Fee Form and submit it per the instructions to the address listed on the form. Instructions for submitting any other fees will be provided to the applicant by DEQ staff.
- VMRC: An application fee of $300 may be required for projects impacting tidal wetlands, beaches and/or dunes when VMRC acts as the LWB. VMRC will notify the applicant in writing if the fee is required. Permit fees involving subaqueous lands are $25.00 for projects costing $10,000 or less and $100 for projects costing more than $10,000. Royalties may also be required for some projects. The proper permit fee and any required royalty is paid at the time of permit issuance by VMRC. VMRC staff will send the permittee a letter notifying him/her of the proper permit fees and submittal requirements.
- LWB: Permit fees vary by locality. Contact the LWB for your project area or their website for fee information and submittal requirements. Contact information for LWBs may be found at http://ccrm.vims.edu/permits_web/guidance/local_wetlands_boards.html.

FOR AGENCY USE ONLY	
	Notes:
	JPA # **20-2221**

APPLICANTS
Part 1 – General Information

PLEASE PRINT OR TYPE ALL ANSWERS: If a question does not apply to your project, please print N/A (not applicable) in the space provided. If additional space is needed, attach 8-1/2 x 11 inch sheets of paper.

Check all that apply		
Pre-Construction Notification (PCN) ☐ NWP # _____ (*For Nationwide Permits ONLY - No DEQ-VWP permit writer will be assigned*)	Regional Permit 17 (RP-17) ☐	

County or City in which the project is located: Middlesex County

Waterway at project site: Moore Creek off Piankatank River.

PREVIOUS ACTIONS RELATED TO THE PROPOSED WORK (Include all federal, state, and local pre application coordination, site visits, previous permits, or applications whether issued, withdrawn, or denied)

Historical information for past permit submittals can be found online with VMRC - https://webapps.mrc.virginia.gov/public/habitat/ - or VIMS - http://ccrm.vims.edu/perms/newpermits.html

Agency	Action / Activity	Permit/Project number, including any non-reporting Nationwide permits previously used (e.g., NWP 13)	Date of Action	If denied, give reason for denial

Part 1 - General Information (continued)

1. Applicant's legal name* and complete mailing address: Contact Information:

[redacted]
6525 Monument Avenue
Richmond, VA
23226

Home (804) 370-3561
Work (_)
Fax (_)
Cell (800) 370-3561
e-mail [redacted]

State Corporation Commission Name and ID Number (if applicable) _____

2. Property owner(s) legal name* and complete address, if different from applicant: Contact Information:

Home (_)
Work (_)
Fax (_)
Cell (_)
e-mail

State Corporation Commission Name and ID Number (if applicable) _____

3. Authorized agent name* and complete mailing address (if applicable): Contact Information:

Chris Davis
504 Smoketree Ct
North Chesterfield, VA
23236

Home (____)
Work (_)
Fax (_)
Cell (804) 338-3103
e-mail chris.readyreef@gmail.com

State Corporation Commission Name and ID Number (if applicable) _____

*** If multiple applicants, property owners, and/or agents, each must be listed and each must sign the applicant signature page.**

4. Provide a detailed description of the project in the space below, including the type of project, its dimensions, materials, and method of construction. Be sure to include how the construction site will be accessed and whether tree clearing and/or grading will be required, including the total acreage. If the project requires pilings, please be sure to include the total number, type (e.g. wood, steel, etc), diameter, and method of installation (e.g. hammer, vibratory, jetted, etc). If additional space is needed, provide a separate sheet of paper with the project description.

The project is to install Envirolok Bags planted with marsh grass for 50 LF x 4' high at the shoreline against the steep bank adjacent to the Client's dock on Moore Creek. To the north and south of these bags, a 179 LF perimeter of ReadyReefs out to MLW will be installed, with backfilled sand and planted with marsh grass to make a living shoreline. Against the bank, 143 LF x average of 3' high more Envirolok bags will be stacked to prevent erosion higher up the bank. All work is above MLW, except where reefs diverge out to create 5' gap. No SAVs are present. Any grasses covered by backfill or bags will be replaced. There will be a net gain of 520 ft² of marsh grass. No grading or tree clearing in the RPA is required. Site will be accessed through the yard.

Part 1 - General Information (continued)

5. Have you obtained a contractor for the project? x Yes* ___ No. *If your answer is "Yes" complete the remainder of this question and submit the Applicant's and Contractor's Acknowledgment Form (enclosed)

Contractor's name* and complete mailing address:

ReadyReef Inc
504 Smoketree Ct.
North Chesterfield, VA
23236

Contact Information:
Home (_)_____
Work (_)_____
Fax (_)_____
Cell (804) 338-3103
email chris.readyreef@gmail.com

State Corporation Commission Name and ID Number (if applicable) _____

*** If multiple contractors, each must be listed and each must sign the applicant signature page.**

6. List the name, address and telephone number of the newspaper having general circulation in the area of the project. Failure to complete this question may delay local and State processing.

Name and complete mailing address:

Southside Sentinel
276 Virginia Street
PO Box 549
Urbanna, VA
23175

Telephone number
(804) 758-2328

7. Give the following project location information:
Street Address (911 address if available) 160 Wooldridge Cove Rd
Lot/Block/Parcel# 40 82 41
Subdivision Lucys Cove
City / County Deltaville ZIP Code 23043
Latitude and Longitude at Center Point of Project Site (Decimal Degrees):
37.544195°N / - 76.357231°W (Example: 36.41600/-76.30733)

If the project is located in a rural area, please provide driving directions giving distances from the best and nearest visible landmarks or major intersections. *Note: if the project is in an undeveloped subdivision or property, clearly stake and identify property lines and location of the proposed project. A supplemental map showing how the property is to be subdivided should also be provided.*

From Saluda, take Rt. 33 East towards Deltaville. Turn Right onto Providence Rd, State Rt 633. Follow Rt. 633, but when it takes a 90°right turn, keep going straight as it turns into Lucy Cove Rd. Turn left at Stop Sign onto Sandy Bottom Drive. Turn right onto Wooldridge Cove Drive. House Number 160 is at the end in the cul-de-sac.

8. What are the *primary and secondary purposes of and the need for* the project? For example, the primary purpose may be "to protect property from erosion due to boat wakes" and the secondary purpose may be "to provide safer access to a pier."

The primary purpose is stop erosion at the toe of the bank which is being undercut with soil loss and threat to dock access.
The secondary purpose is to achieve erosion control with the environmental benefit of adding marsh grasses and oysters to the waterfront.

Received by VMRC December 8, 2020 /blh

Part 1 - General Information (continued)

9. Proposed use (check one):
   x Single user (private, non-commercial, residential)
   ___ Multi-user (community, commercial, industrial, government)

10. Describe alternatives considered and the measures that will be taken to avoid and minimize impacts, to the maximum extent practicable, to wetlands, surface waters, submerged lands, and buffer areas associated with any disturbance (clearing, grading, excavating) during and after project construction. *Please be advised that unavoidable losses of tidal wetlands and/or aquatic resources may require compensatory mitigation.*

    Only 20ft² of thin marsh grass will be covered with backfill delivered from the yard. These will be replaced with 540 ft² of new marsh grass plants in the Envirolok bags and on the Living Shoreline.
    No buffer areas will be impacted by traffic over the mulch covered yard.

11. Is this application being submitted for after-the-fact authorization for work which has already begun or been completed? ___Yes x No. If yes, be sure to clearly depict the portions of the project which are already complete in the project drawings.

12. Approximate cost of the entire project (materials, labor, etc.): $_____
    Approximate cost of that portion of the project that is channelward of mean low water:
    $ 130

13. Completion date of the proposed work: June 30 - 2022

14. Adjacent Property Owner Information: List the name and complete **mailing address**, including zip code, of each adjacent property owner to the project. (NOTE: If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.) Failure to provide this information may result in a delay in the processing of your application by VMRC.

    40 82 40
    Arthur and Evelynn Wilton Jr
    PO Box 212
    Deltaville, VA
    23043

    40 82 42
    Gordon White
    PO Box 129
    Hardyville, VA
    23070

Received by VMRC December 8, 2020 /blh

Part 2 - Signatures

1. Applicants and property owners (if different from applicant).
NOTE: REQUIRED FOR ALL PROJECTS

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.
CERTIFICATION: I am hereby applying for all permits typically issued by the DEQ, VMRC, USACE, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit. **In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.**

Applicant's Legal Name (printed/typed) _____ (Use if more than one applicant) _____

Applicant's Signature _____ (Use if more than one applicant) _____

Date _____

Property Owner's Legal Name (printed/typed) (If different from Applicant) _____ (Use if more than one owner) _____

Property Owner's Signature _____ (Use if more than one owner) _____

Date _____

Part 3 – Appendices (continued)

Appendix B: Projects for Shoreline Stabilization in tidal wetlands, tidal waters and dunes/beaches including riprap revetments and associated backfill, marsh toe stabilization, bulkheads and associated backfill, breakwaters, beach nourishment, groins, jetties, and living shoreline projects. Answer all questions that apply. Please provide any reports provided from the Shoreline Erosion Advisory Service or VIMS**.**

NOTE: It is the policy of the Commonwealth that living shorelines are the preferred alternative for stabilizing tidal shorelines (Va. Code § 28.2-104.1). **Information on non-structural, vegetative alternatives (i.e., Living Shoreline) for shoreline stabilization is available at http://ccrm.vims.edu/coastal_zone/living_shorelines/index.html.**

1. Describe each **revetment, bulkhead, marsh toe, breakwater, groin, jetty, other structure, or living shoreline project** separately in the space below. Include the overall length in linear feet, the amount of impacts in acres, and volume of associated backfill below mean high water and/or ordinary high water in cubic yards, as applicable:

   179 LF of ReadyReefs are arrange in linear double rows that mate together. Oyster veneers face seaward. The bottom is firm, so no filter cloth is required. The 6 ft² encroachment below MLW is only necessary due to the requirement for a 5' gap every 100'.

   The Envirolok bags spec sheets and installation diagrams are attached.
   The foundation layer bags are filled with round river rock to allow for hydraulic relief behind the bags. They can be stacked at any angle to match slope.
   Also the installation diagram shows anchoring specs, using geoweb, rebar and earth anchors for structurally fixing the bags to the embankment.
   Sand will be placed behind the bags and packed with them using soil compactor machine.
   Marsh grass sprigs will be planted 1' on center in the backfilled sand to create a Living Shoreline.

2. What is the maximum encroachment channelward of mean high water? 15 feet.
   Channelward of mean low water? 3 feet.
   Channelward of the back edge of the dune or beach? 15 feet.

3. Please calculate the square footage of encroachment over:
   - Vegetated wetlands 20 square feet
   - Non-vegetated wetlands 2102 square feet
   - Subaqueous bottom 6 square feet
   - Dune and/or beach 0 square feet

4. For bulkheads, is any part of the project maintenance or replacement of a previously authorized, currently serviceable, existing structure? ____ Yes____ No.

   If yes, will the construction of the new bulkhead be no further than two (2) feet channelward of the existing bulkhead? _____Yes ____No.

   If no, please provide an explanation for the purpose and need for the additional encroachment.

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Part 3 – Appendices (continued)

5. Describe the type of construction and **all** materials to be used, including source of backfill material, if applicable (e.g., vinyl sheet-pile bulkhead, timber stringers and butt piles, 100% sand backfill from upland source; broken concrete core material with Class II quarry stone armor over filter cloth).
NOTE: **Drawings must include construction details, including dimensions, design and all materials, including fittings if used**.

The ReadyReefs are locally sourced crack resistant concrete substrate with an oyster shell veneer cast in. There is 5" of embedded PVC pipe for attachment/lifting purposes.

The Envirolok bags spec sheets are attached. They are filled with a 25% topsoil and 75% clean sand mix. Marsh grass sprigs are laid between bags with Osmocote fertilizer.

Also attached is an installation diagram showing anchoring specs, using geoweb, rebar and earth anchors for structurally fixing the bags to the embankment.
Sand is locally sourced from Middlesex upland pit, meeting grain size and composition requirements of the USACE.

6. If using stone, broken concrete, etc. for your structure(s), what is the average weight of the:
Core (inner layer) material_____ pounds per stone Class size _____
Armor (outer layer) material _____ pounds per stone Class size _____

7. For **beach nourishment**, including that associated with breakwaters, groins or other structures, provide the following:

- Volume of material
  - 0 cubic yards channelward of mean low water
  - 40 cubic yards landward of mean low water
  - 35 cubic yards channelward of mean high water
  - 5 cubic yards landward of mean high water
- Area to be covered
  - 0 square feet channelward of mean low water
  - 1300 square feet landward of mean low water
  - 35 cubic yards channelward of mean high water
  - 5 cubic yards landward of mean high water
- Source of material, composition (e.g. 90% sand, 10% clay): 93% sand, 7% clay
- Method of transportation and placement:
  Truck from Pit to front yard. Skid steer from front yard to shoreline. Chutes from shoreline to installation points.
- Describe any proposed vegetative stabilization measures to be used, including planting schedule, spacing, monitoring, etc. Additional guidance is available at http://www.vims.edu/about/search/index.php?q=planting+guidelines:

  Marsh grass spigs of Spartina will be placed one foot on center on Living shoreline slope and in Envirolok bag face. The Spartina types are Alterniflora and Patens, each according to its elevation appropriate level. Installation is concurrent with project install and completion. All ReadyReef sites are monitored for marsh grass growth for 2 years according to contract warranty and the time it takes for living shorelines to fully establish themselves.

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Part 3 – Appendices (continued)

Appendix D: Aquaculture Related Structures such as cages and floats. Before completing this appendix, please review the aquaculture requirements summary at: http://mrc.virginia.gov/Shellfish_Aquaculture.shtm.

1. Will the activity be for commercial purposes? _____Yes _____ No.

   If Yes and structures will be placed upon an oyster ground lease, you may qualify for the VMRC General Permit #4 for Temporary Protective Enclosures for Shellfish. For more info see: http://www.mrc.virginia.gov/regulations/MRC_Scanned_Regs/Shellfish_Mix/fr1130_12-0107.pdf. If you qualify for the General Permit #4, or if such structures are proposed that are not on an oyster planting ground lease, or for floating structures of any kind, complete this Joint Permit Application and include the necessary information requested below in question 2 through 11.

   If No, you may qualify for the VMRC General Permit #3, for Noncommercial Riparian Shellfish Growing (i.e. "Gardening") For more information see: http://www.mrc.virginia.gov/forms/VGP3_Aquaculture.doc.pdf. If you qualify for this general permit use the Abbreviated Joint Permit Application For Noncommercial Riparian Shellfish Aquaculture Structures available at https://mrc.virginia.gov/forms/2019/VGP3_Aquaculture_form_2019.pdf ***do not use this Joint Permit Application***.

2. Will aquaculture structures be attached to an existing pier or other structure? ____ Yes ____ No.

3. The plat file # if proposed upon oyster planting ground lease(s)._____

4. The maximum area where enclosures are proposed. _____ square feet

5. The maximum number of enclosures being proposed to be deployed. _____

6. The species of shellfish to be cultured. _____

7. A detailed description of the enclosures to include width, length and height.

8. In addition to the requirements itemized in Part 4 Project Drawings, the following additional information must be included on your project drawings: A general description of the area within 500 feet of deployment area. Provide a drawing that depicts existing marine resources such as SAV, shellfish beds, fixed fishing devices, public grounds, piers, water depths at mean low water, tide range, and the minimum clearance at mean low tide over the enclosures.

9. Provide the date enclosures are proposed to be deployed _____. How will the structures be secured? _____.

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Part 3 – Appendices (continued)

10. List of all riparian land owners within 500 feet of the area where enclosures are proposed along with a map (tax map or other suitable map) depicting the locations of such parcels or riparian property owner acknowledgement forms signed by the riparian land owner with any comments concerning the enclosures deployment request.

11. Proof that the applicant holds a current oyster or clam aquaculture product owners permit, and verification that the applicant is in compliance with Mandatory Harvest Reporting requirements, and verification that the current years oyster ground rent is paid, if structures are proposed on an oyster ground lease.

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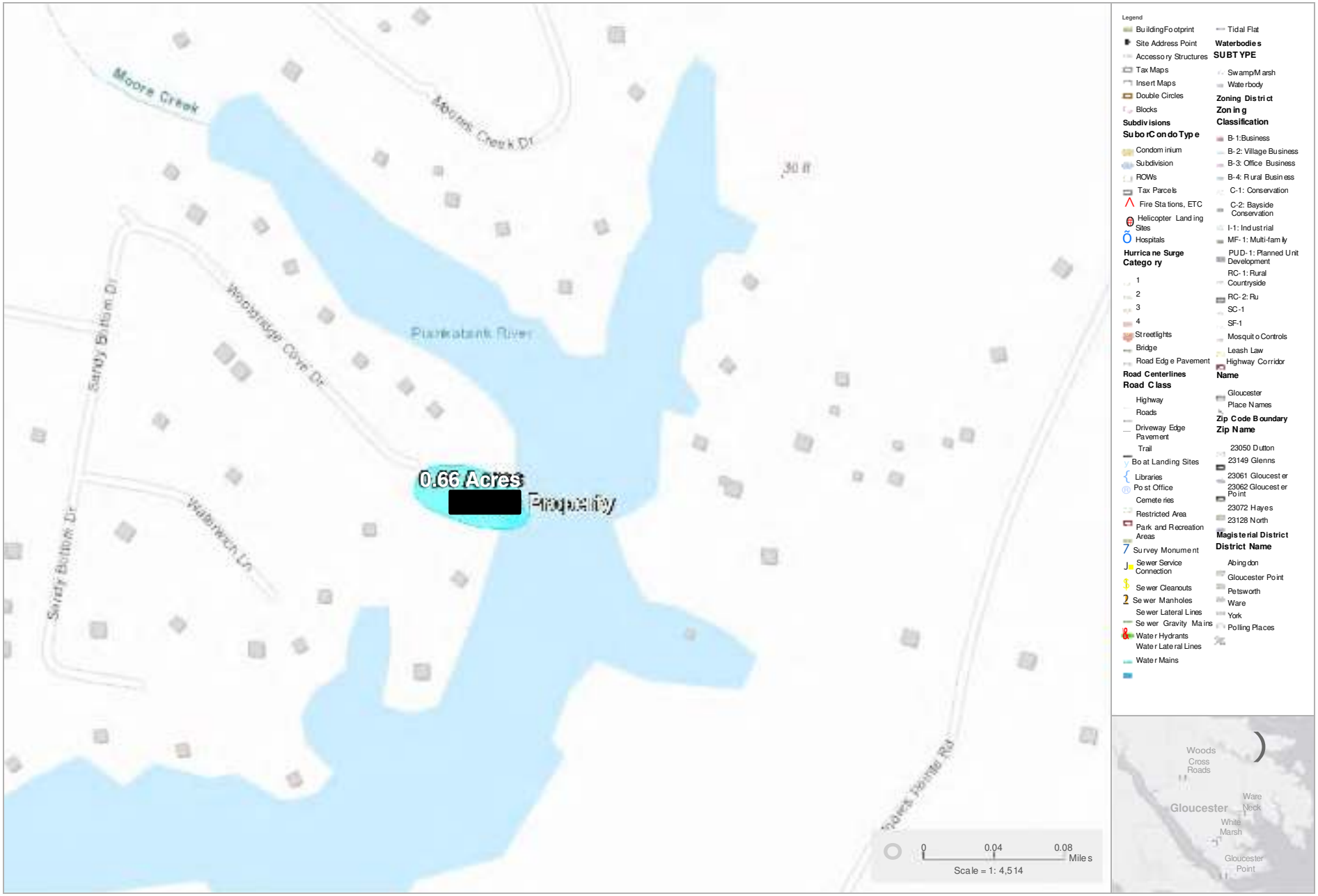
COUNTY OF GLOUCESTER VIRGINIA

[redacted] Local Map

Gloucester County, VA
www.gloucesterva.info



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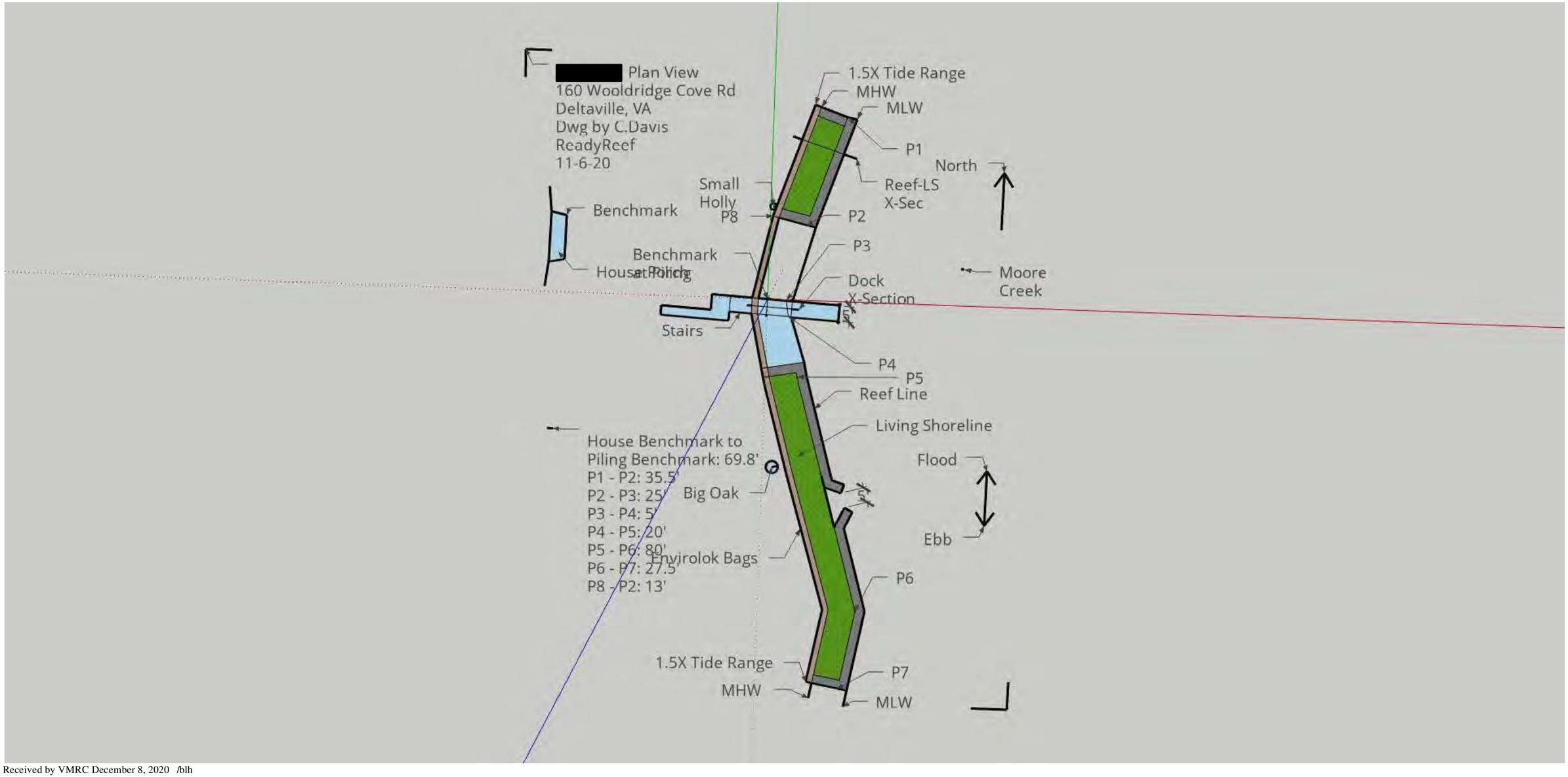
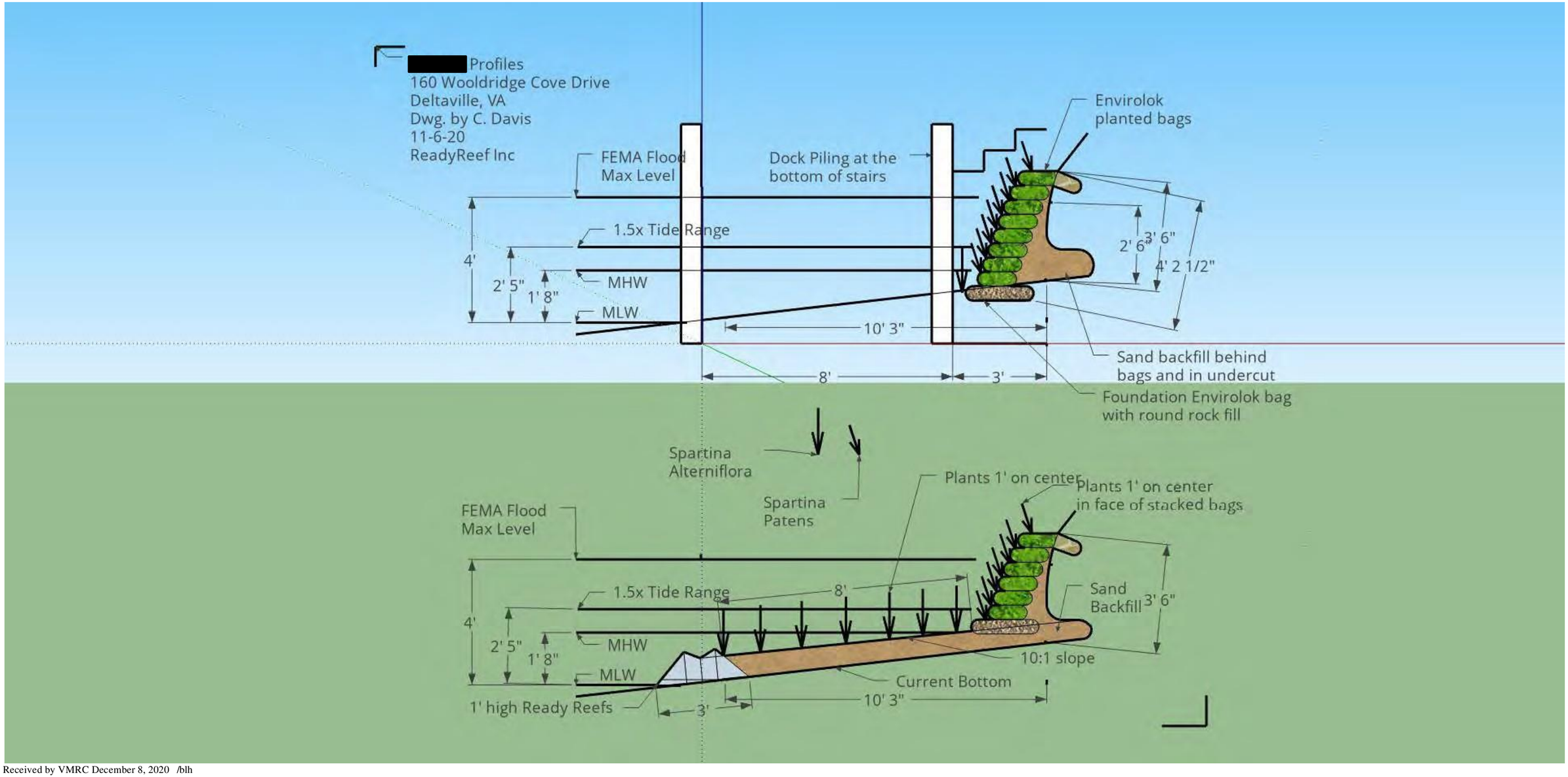




Received by VMRC December 8, 2020 /blh

Envirolok®
Vegetated Environmental Solutions

Envirolok Bag (Tan) Data Sheet

The Envirolok bag is a nonwoven geotextile produced by needle-punching together 100% synthetic staple fibers, in a random network, forming a high strength, dimensionally stable fabric. The synthetic fibers are specially formulated to resist ultraviolet light deterioration, and are inert to commonly encountered soil chemicals. The fabric will not rot or mildew, is non-biodegradable, and is resistant to damage from insects and rodents. The synthetic fiber is stable within a pH range of 2 to 13, making it one of the most stable polymers available for geotextiles today. The Envirolok bag meets the following Minimum Average Roll Values (MARV):

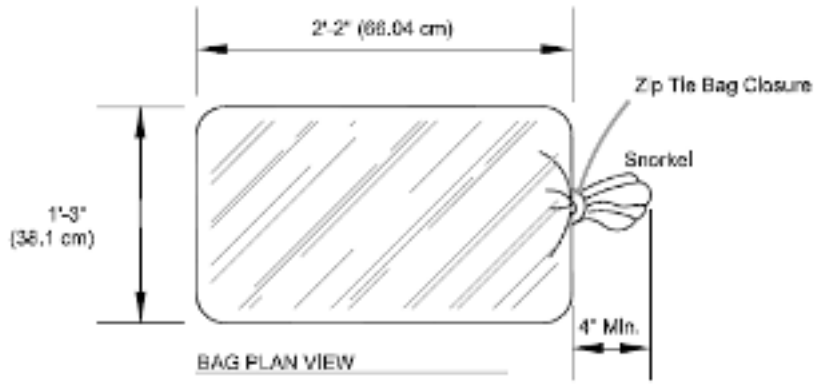
PROPERTIES	TEST METHOD	UNIT	MARV
PHYSICAL			
Weight	ASTM D 5261	oz/yd2	4.0 (Typ) (135.62 g/m2)
Dimensions (unfilled)		35 x 16.5 inches (889 x 419 mm)	
Grab Tensile	ASTM D 4632	lbs.	100 (.450 kN)
Grab Elongation	ASTM D 4632	%	50
Puncture Strength	ASTM D 4833	lbs.	65 (.289 kN)
Mullen Burst	ASTM D 3786	psi	210 (1448 kPa)
Trapezoidal Tear	ASTM D 4533	lbs.	45 (.202 kN)
CBR Puncture Resistance	ASTM D 6241	lbs.	310 (1.379 kN)
UV Resistance After 1,000 Hours	ASTM D 4355	% Strength Retained	70
HYDRAULIC			
Permittivity [1]	ASTM D 4491	sec-1	2
Water Flow Rate [1]	ASTM D 4491	gpm/ft2	140 (5700 l/min/m2)
Apparent Opening Size [2]	ASTM D 4751	U.S. Sieve	70 (.212mm)

1. Handling at the time of manufacturing may change these properties.
2. Apparent Opening Size, (AOS), reported as Maximum Average Roll Value.

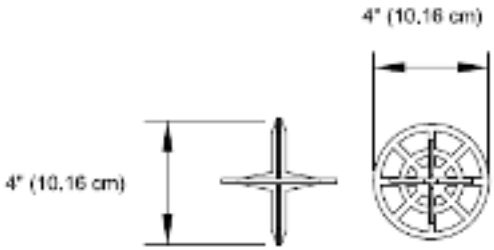
To the best of our knowledge, the information contained herein is accurate. However, it is not a warranty or a guarantee and is provided for reference only. We accept no responsibility for results obtained by the application of this information or the safety or suitability of our products either alone or in combination with other products. Final determination of the suitability of any information or material for the use contemplated, of its manner of use, and whether the suggested use infringes on any patents is the sole responsibility of the user.

Revised Date: 01/01/2017

10101 N. Casey Road, Evansville, WI 53536 Tel. (608) 223-3571 Fax. (608) 884-4640
Email: ecosolutions@envirolok.com Web: www.envirolok.com



BAG PLAN VIEW



ENVIROLOK CONNECTOR PIN (SPIKES)

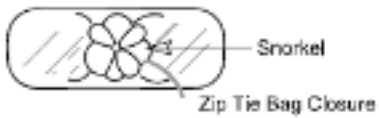
SCALE: 1/2" = 1'-0"

NOTE:

- Two Connector Pins shall be installed per bag, interconnecting the bags vertically
- Connector Pins shall be used to connect the first row of bags to the base setting course.
- Connector Pins shall penetrate each bag and/ or base course minimum of 2".
- Pin locations will vary with the slope of the structure and should be placed in the center of the bag contact area between courses.

BAG ELEVATION

Face Area: 1 sq ft (.093 m^2)



BAG END VIEW

ENVIROLOK BAG SPECIFICATION:

Calculated Unit Fill: 1.25 cu ft (.0354 m^3)/unit

Face Area: 1 sq ft (.093 m^2)

Mattress Face Area: 2.7 sq ft (.25 m^2)/unit

NOTE:

- Quantities required vary based on unit filling and design layout

- One Envirolok Unit consists of:
  - One (1) Envirolok Bag
  - Two (2) Connector Pins
  - One (1) Zip Tie Bag Closure

TITLE

STANDARD UNIT DETAIL

DATE: APRIL 2017

SCALE: 1" = 1'-0"

SHEET: SHEET 1

Envirolok™

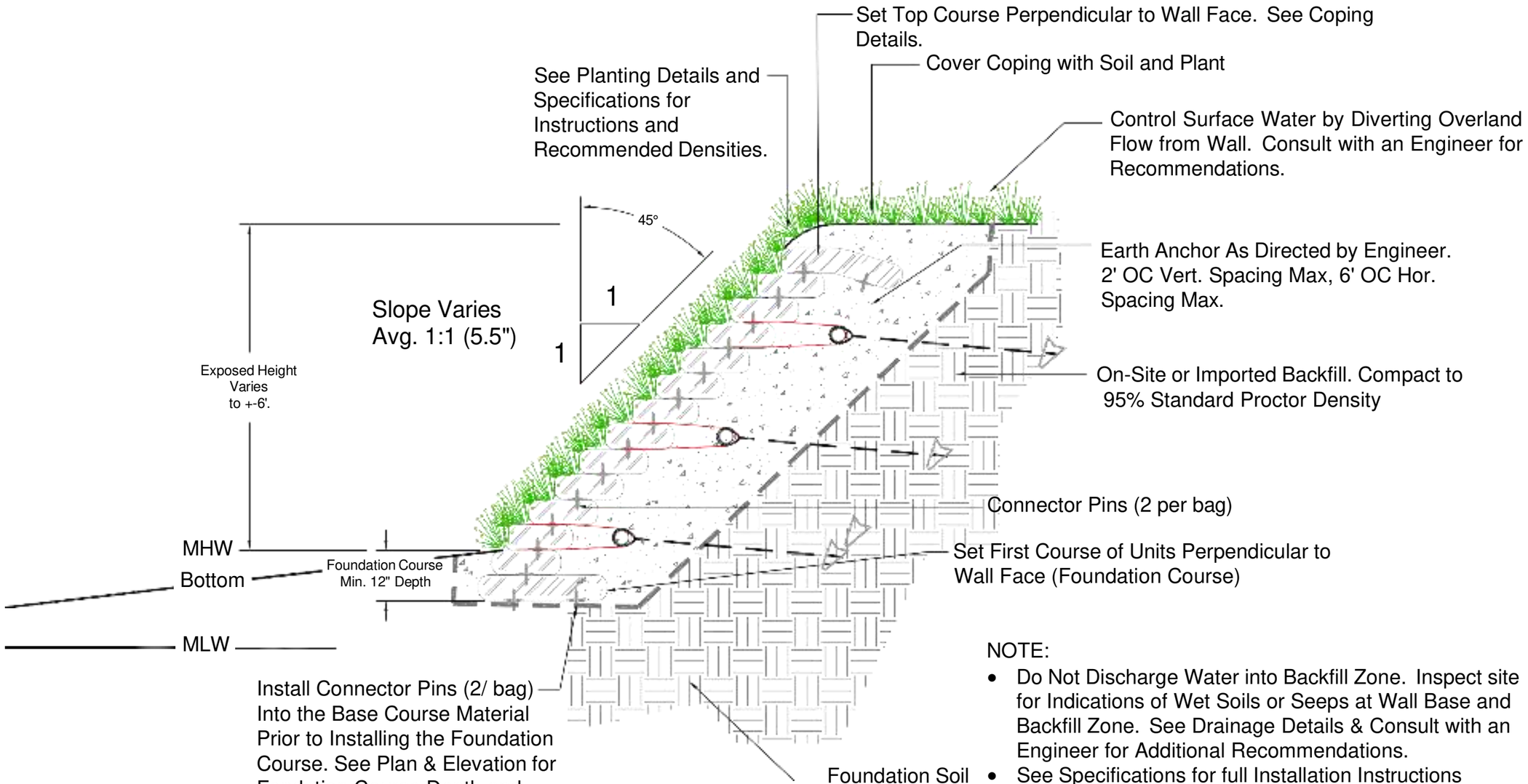
Vegetated Environmental Solutions

10101 N. Cassy Road
Evansville, WI 53536
(P) 608.228.2666

www.enviroloc.com
wood.ullens@enviroloc.com
(F) 608.884.4640

REVISIONS

11.00 x 8.50 in



NOTE:

- Do Not Discharge Water into Backfill Zone. Inspect site for Indications of Wet Soils or Seeps at Wall Base and Backfill Zone. See Drainage Details & Consult with an Engineer for Additional Recommendations.
- See Specifications for full Installation Instructions

TITLE
RICCI RESIDENCE
STABILIZATION DETAIL

DATE: MAY 2019
SCALE: 1/2"=1'-0"
SHEET: SHEET 1 OF 1

Envirolok
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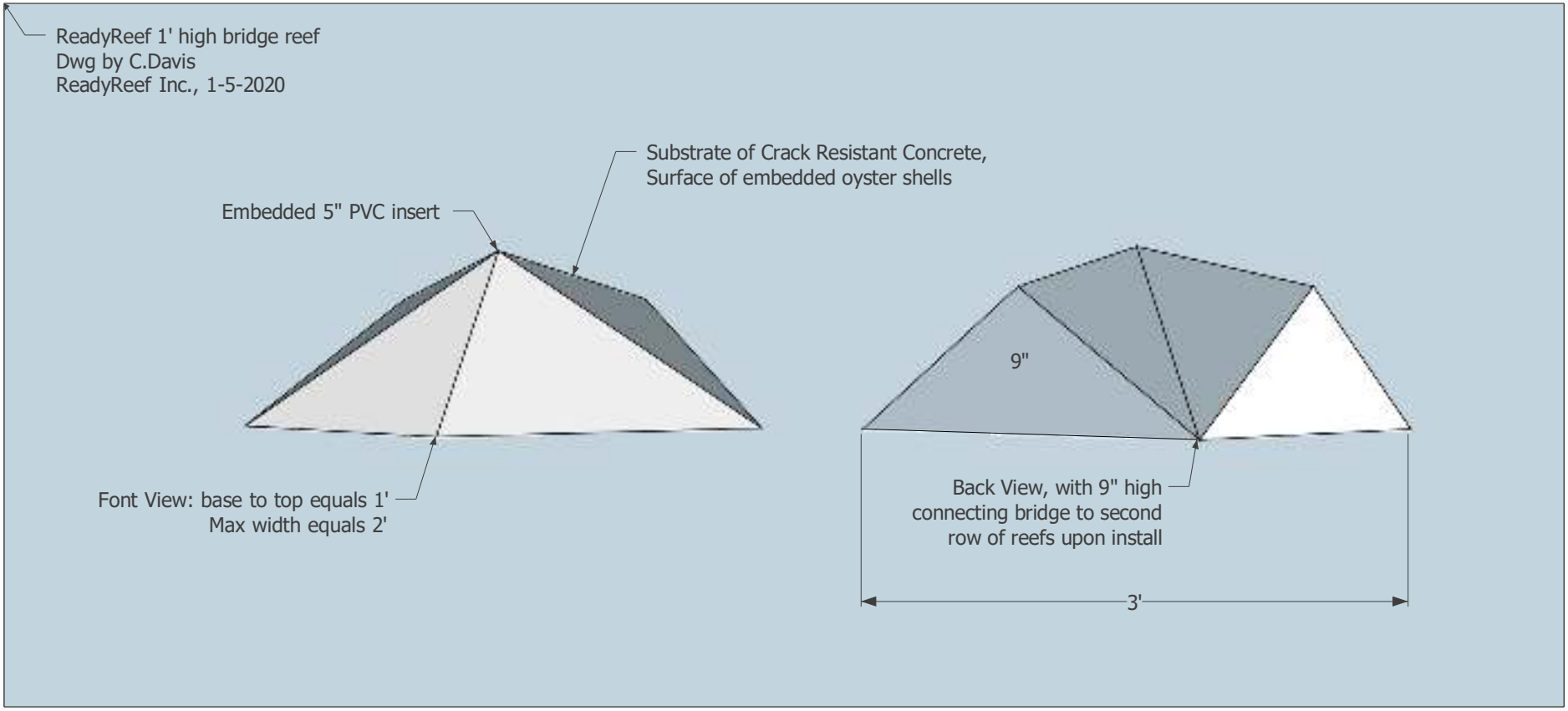
REVISIONS



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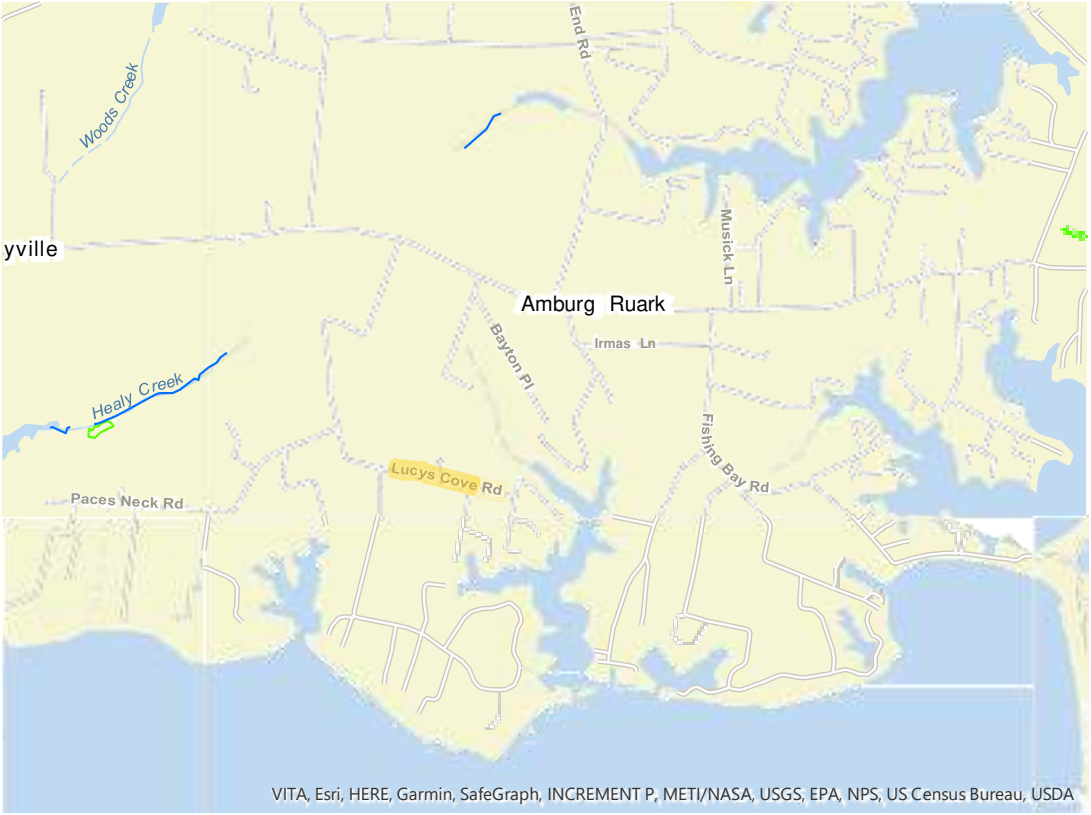

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Revised Date: 01/01/2017

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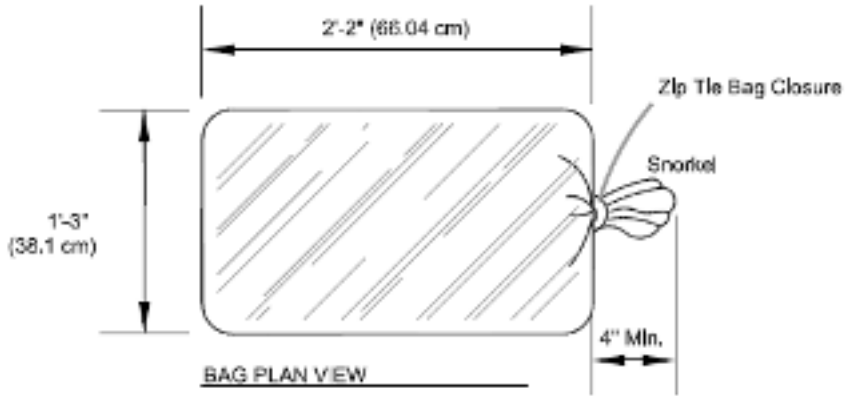
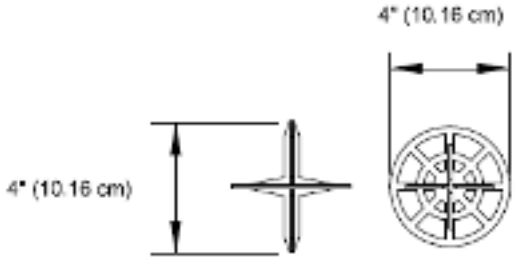


BAG PLAN VIEW



ENVIROLOK CONNECTOR PIN (SPIKES)
SCALE: 1/2" = 1'-0"

NOTE:

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- Connector Pins shall be used to connect the first row of bags to the base setting course.
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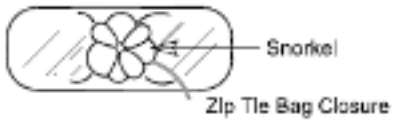
BAG ELEVATION
Face Area: 1 sq ft (.093 m^2)



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- Quantities required vary based on unit filing and design layout

- One Envirolok Unit consists of:
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  One (1) Zip Tie Bag Closure

TITLE
STANDARD UNIT DETAIL

DATE
APRIL 2017

SCALE
1" = 1'-0"

SHEET
SHEET 1

Envirolok™
Vegetated Environmental Solutions

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Evansville, WI 53536
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www.envirolok.com
solutions@envirolok.com
(F) 608.884.4640

REVISIONS

Virginia Marine Resources Commission
Permit Application 20202221
Printed: Thursday October 21, 2021 11:48 AM

Applicant: [redacted]
6525 Monument Avenue
Richmond, VA 23226

Application Number:	20202221	**Engineer:**	Jay Woodward
Application Date:	December 8, 2020	**Locality:**	Middlesex
Permit Type:	VMRC Subaqueous	**Waterway:**	Moore Creek
Permit Status:	Sent Application Fees	**Expiration Date:**	
Wetlands Board Action:	Approved as Proposed	**Public Hearing Date:**	April 13, 2021

Project Description: Living Shoreline

Project Dimensions:

Sill Fill: 40 Cubic Yards
Bioengineered Structure: 179 Linear Feet
Living Shoreline: 176 Linear Feet

Virginia Marine Resources Commission
Photos for Permit Application 20202221
Printed: Thursday October 21, 2021 11:48 AM

Date Photo Uploaded: 2021:04:22

Date Photo Uploaded: 2021:04:22

Virginia Marine Resources Commission
Photos for Permit Application 20202221
Printed: Thursday October 21, 2021 11:48 AM

Date Photo Uploaded: 2021:04:22

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WETLANDS PERMIT

Date of Permit: *April 13, 2021*

Date of Permit's Expiration: *October 13, 2022*

Pursuant to provisions of the Middlesex County Wetlands Zoning Ordinance, the Wetlands Board of Middlesex County, Virginia, hereinafter referred to as the BOARD, hereby grants unto:

[redacted]

6525 Monument Avenue

Richmond, VA 23226

Hereinafter referred to as the PERMITIBE, permission to undertake the following described project:

to install Envirolok Bags planted with marsh grass for 50 LF x 4' high at the shoreline against the steep bank adjacent to the Client's dock on Moore Creek. To the north and south of these bags, a 179 LF perimeter of ReadyReefs out to MLW will be installed, with backfilled sand and planted with marsh grass to make a living shoreline. Against the bank, 143 LF x average of3' high more Envirolok bags will be stacked to prevent erosion higher up the bank. All work is above MLW, except where reefs diverge out to create 5' gap.

For a more complete description of said project, reference is hereby made to PERMITIEE'S Application for the Wetlands Permit Qoint Permit Application Number **2020-2221** which is made a part of this permit).

This Permit is granted subject to the following terms and conclitions:

1. Except as hereinafter provided, all phases of the project shall conform in all respects to PERMITTEE'S application for Wetlands Permit. The duly authorized agents of the BOARD shall have the right to enter upon the premises at any time for the purpose of inspecting work authorized by this permit.

2. PERMI1TEE shall comply with all applicable laws, ordinances, rules and regulations affecting the conduct of the project. The granting of this permit shall not relieve the PERMITIEE of the responsibility of obtaining any and all permits of authority required for the project. **Contact the Virginia Marine Resources Commission, the** U.S. **Army Corps of Engineers, and the Middlesex County Planning, Zoning and Building Departments** for **further permit requirements.**

3. PERMITTEE shall, to the greatest extent practicable, minimize the adverse effects of the project upon adjacent properties and wetlands and upon the natural resources of the County.

4. PERMITIEE is responsible for display of the yellow placard accompanying this permit. Placard must be conspicuously displayed at the work site prior to and tbroughout the construction phase of tbe authorized activity.

5. PERMITTEE agrees to notify the Wetlands Board a minimum of 48 hours to tbe start of the construction activities authorized by this permit.

6. PERMiiTEE shall be responsible for all denuded areas disturbed during and after alteration. These areas shall be returned to its previous condition by re-vegetation or re-stabilization.

7. PERMITIEE is responsible tbat once work is begun on a project, the work shall be completed in a timely and efficient manner. Temporary and permanent erosion and sediment control measures, as approved by Minimum State Standards, must be applied throughout construction.

8. Other terms and conditions peculiar to this project:

9. This permit shall not be transferred without written approval of the BOARD.

10. The project shall be completed within eighteen months of the date of this permit, after which time this permit shall be null and void. Upon proper written application to the BOARD, however, tbe deadline for completion of the project may be extended by the BOARD, at its discretion. Any such request for extension of time shall be made prior to the expiration date of this permit and shall specify tl,e reasons for such extension and the expected date of completion of the project. Extensions shall not be granted for more tban tluee years from the date of this permit.

11. This permit may be revoked at any time by the BOARD upon failure of PERMITTEE to comply with any of the terms and conditions of this permit.

IN WITNESS WHEREOF, the Wetlands Board of Middlesex County, Virginia has caused this permit to be executed in its behalf by Fred W. Dolezal, Chairman of the BOARD. The signature of [redacted] is affixed hereto as evidence of acceptance of the terms and conditions of tbe permit by PERMITTEE.

COUNTY OF MIDDLESEX, VIRGINIA

WETLANDS BOARD

BY: ___

(WETLANDS BOARD CHAIRMAN'S SIGNATURE)

COMMONWEALTH OF VIRGINIA, COUNTY OF MIDDLESEX, to wit:

The foregoing instrument was acknowledged before me this 17 day of May, 2021 by Fred W. Dolezal, Chairman of the Wetlands Board of Middlesex County, Virginia. My commission expires 3/31/22

JODY SIGMON COLLIER
Notary Public
Commonwealth of Virginia
Registration # 7589806
My Commission Expires 3/31/2022

Jody Sigmon Collier
Notary Public

PERMITTEE [redacted]

BY: Christopher M. Davis (AGENT)

(PERMITTEE'S SIGNATURE)

The foregoing instrument was acknowledged before me this 24th day of April 2021 by Christopher M. Davis.

My commission expires 2/28/2023

Tracey Nickelbauser
Notary Public

TRACEY NICOLE FOWSER
Notary Public
Commonwealth of Virginia
7112136
My Commission Expires 02/28/2023

Received by VMRC on May 25, 2021 /lra

Attachment 6: Flood Prevention Project and its Relevance to Other Projects

MPPDC staff have worked throughout the years to understand the policy, research and impacts of flooding (ie. 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 & Sea Level Rise (2009 to 2012)
The MPPDC was funded for a 3 Phase project through the Virginia Coastal Zone Management Program to assess the impacts of climate and sea level rise throughout the region. With over 1,000 miles of linear shoreline, the Middle Peninsula has a substantial amount of coast under direct threat of accelerated climate change and more specifically sea-level. In Phase 1, MPPDC staff assessed the potential anthropogenic and ecological impacts of climate change. Phase 2 focused on the facilitating presentations and develop educational materials about sea level rise and climate change for the public and local elected officials. Finally Phase 3 focused on developing adaptation public policies in response to the assessments.
Phase 1: Middle Peninsula Climate Change Adaptation: Facilitation of Presentations and Discussions of Climate Change Issues with Local Elected Officials and the General Public
Phase 2: Climate Change III: Initiating Adaptation Public Policy Development
Phase 3: Phase 3 Climate Change: Initiating Adaptation Public Policy Development

Emergency Management - Hazard Mitigation Planning (2009 to Present): Since 2009, the Middle Peninsula Planning District Commission has assisted regional localities in meeting the federal mandate to have an adopted local hazard plan. *The Regional All Hazards Mitigation Plan addresses the natural hazards prone to the region, including hurricanes, winter storms, tornadoes, coastal flooding, coastal/shoreline erosion, sea level rise, winter storms, wildfire, riverine flooding, wind, dam failures, drought, lightning, and earthquakes. This plan also consists of a Hazus assessment of hurricane wind, sea level rise* (ie. Mean High Higher Water and the NOAA 2060 intermediate-high scenario), *and flooding (coastal and riverine flooding) that estimates losses from each hazard.* The Middle Peninsula All-Hazard Mitigation Plan 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, OSDS management, storm water management, TMDLs, etc, staff from the Middle Peninsula Planning District Commission (MPPDC) will develop a rural pilot project which aims to identify pressing coastal issue(s) of local concern related to Bay clean up and new federal and state legislation which ultimately will necessitate local action and local policy development. Staff has identified many cumulative and secondary impacts that have not been researched or discussed within a local public policy venue. Year 1-3 will include the identification of key concerns related to coastal land use management/water quality and Onsite Sewage Disposal System (OSDS) and

community system deployment. Staff will focus on solution based approaches, such as the establishment of a regional sanitary sewer district to manage the temporal deployment of nutrient replacement technology for installed OSDS systems, assessment of land use classifications and taxation implications associated with new state regulations which make all coastal lands developable regardless of environmental conditions; use of aquaculture and other innovative approaches such as nutrient loading offset strategies and economic development drivers.

Department of Conservation and Recreation Stormwater Management (2014)
The Virginia General Assembly created a statewide, comprehensive stormwater management program related to construction and post-construction activities (HB1065 - Stormwater Integration). The Virginia Department of Conservation and Recreation requires stormwater management for projects with land disturbances of one acre or more. This new state mandate requires all Virginia communities to adopt and implement stormwater management programs by July 1, 2014, in conjunction with existing erosion and sediment control programs. Additionally, the communities within the MPPDC are required to address stormwater quality as stipulated by the Chesapeake Bay TMDL Phase II Watershed Implementation Plan and the Virginia Stormwater Regulations. The MPPDC Stormwater Program helped localities develop tools specific to the region necessary to respond to the state mandate requirement for the development of successful stormwater programs.

Stormwater Management-Phase II (2014): MPPDC staff and Draper Aden Associates worked with localities (i.e. Middlesex, King William, and Mathews Counties and the Town of West Point) interested in participating in a Regional Stormwater Management Program. While each locality sought different services from the regional program, this project coordinated efforts, developed regional policies and procedures, and the proper tools to implement a regional VSMP.

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 MPPDC developed the MPPDC Living Shoreline Incentives Program to offer loans and/or grants to private property owners interested in installing living shorelines to stabilize their shoreline. 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 MPPDC Living Shoreline Revolving Loan program, 8 living shorelines have been financed and built to date encumbering ~$500,000 in VRA loan funding and ~$400,000 in NFWF grant funding. Living Shoreline construction cost to date range per job $14,000- $180,000. MPPDC oversees all aspects (planning, financing, 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): VIMS Shoreline Studies Program worked with the PAA to (1) install oyster bag sills as shore protection at two PAA sites with the goal of determining effective construction techniques and placement guidelines for Chesapeake Bay shorelines and (2) assess the effectiveness for shore protection with oyster bags on private property through time.

Fight the Flood Program (2020): The Fight the Flood 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.

Attachment 7: Project cost estimates

Budget Narrative (Category D)							Budget (Cat. D)
					Applicant 1		
Personnel Salaries/Wages	**DCR %**	**Match %**	**Annual Salary**		**DCR**	**Owner**	**Total**
Staff	25.25%	5.57%	$70,000		$6,356	$1,589	$7,944
Personnel	*Lewis's Cheat Sheet*		**DCR**	**Owner**	$6,356	$1,589	$7,945
		Total	*80%*	*20%*			
Fringe, 26.21% salaries:		$66,845	53,476.00	13,369.00	$1,666	$416	$2,082
	15%	10,026.75	8,021.40	2,005.35			
Total Personnel		**76,871.75**	**61,497.40**	**15,374.35**	$8,022	$2,005	$10,027
Direct Cost: SubAward/SubContract Agreements					**80%**	**20%**	
Enviro Lock				$29,887	$23,910	$5,977	$29,887
1 ft Roof				$17,472	$13,978	$3,494	$17,472
Sand pack and Plants 1800+1880+1880				$7,560	$6,048	$1,512	$7,560
conveyor stand and equipment rental 2400+ 3626				$6,026	$4,821	$1,205	$6,026
tree removal and yard repair				$900	$720	$180	$900
Legal Procurement and Financing/deeds of Tract				$5,000	$4,000	$1,000	$5,000
0				$0	$0	$0	$0
0				$0	$0	$0	$0
Project financial services (50000/50500/53900/56100)				$5,974	$4,779	$1,195	$5,974
Facility services (52100/52200/52400/54200/54500)				$1,703	$1,363	$341	$1,703
Communication services (52250/52253/55150/57100/57300)				$537	$429	$107	$537
Data services (53100/53101/53200/57900)				$162	$129	$32	$162
Material services (54400/54500/57200/57500)				$633	$507	$127	$633
Consulting services (55100/56300/56400/56700)				$771	$617	$154	$771
				$76,625			
SUBTOTAL: Direct Costs					$69,322	$17,330	$86,652
Total					**$69,322**	**$17,330**	**$86,652**
Other Match:							
Source of Match					$0	$0	$0
GRAND TOTAL					**$69,322**	**$17,330**	**$86,652**

From: Chris Davis <chris.readyreef@gmail.com>
Date: October 25, 2021 at 7:16:50 PM EDT
To: [redacted]>
Subject: Re: Fight the Flood

Envirolok Bags (504 Ft² of surface face) $29,887
(includes plants, foundation layer, one row of earth anchors mid-height)
1' high reefs (192 LF) $17,472
50 cuyds of clean sand $1800
Move/install/pack sand $2880
Living shoreline plants (1152 Ft²) $2880
Rental Conveyor for bags/sand $2400
Equipment fees Total: $3626
(includes)
- Haul Trucks with trailers
- Haul truck drivers
- Barge with zip line
- Goose Fencing

Clean bank/remove trees $500
Repair yard post work $400

Total: $60,405

Prices reflect recent price increases in fuel, business insurance, Envirolok bags, labor

Attachment 8: Match Commitment Letters

[redacted]
P.O. Box 1145
Deltaville, VA 23043

October 10, 2021

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,

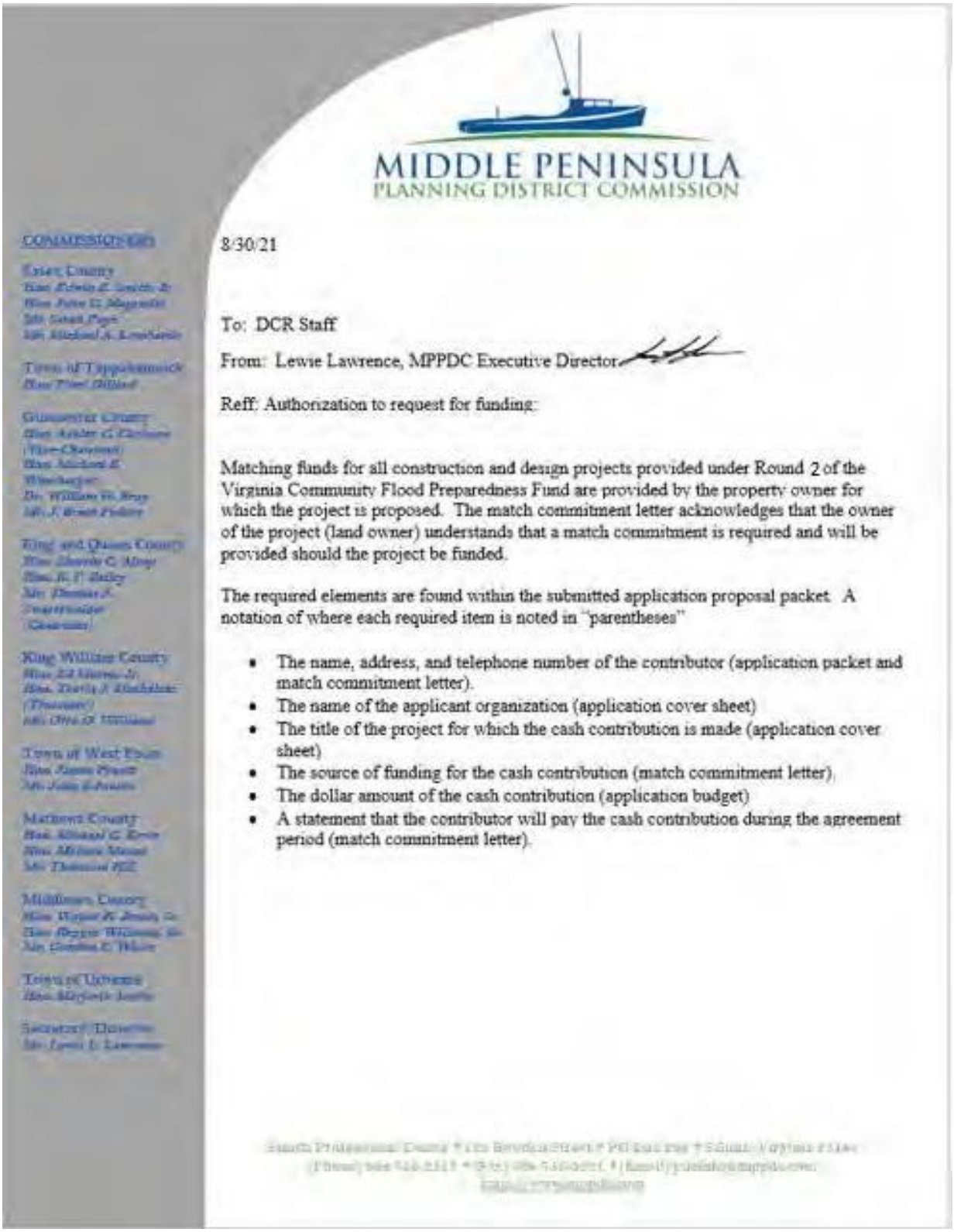
Thank you for considering the application to the Virginia Community Flood Preparedness Fund, involving necessary flood mitigation activities on my property at 160 Wooldridge Cove Drive, Deltaville, VA 23043. I am committed to provide the matching funds necessary in cash or Middle Peninsula Planning District 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) 370-3561 or by email at [redacted]

Sincerely,

[redacted]

Attachment 9: Authorization to request for funding



MIDDLE PENINSULA
PLANNING DISTRICT COMMISSION

COMMISSIONERS

Essex County

Town of Tappahannock

Gloucester County

King and Queen County

King William County

Town of West Point

Mathews County

Middlesex County

Town of Urbanna

Secretary/ Director

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).