# Attachment 1A Recent Event Impact on Neeld Estate Shoreline

### October 2020



### November 2020







# Breezy Point/Neeld Estate Flood Mitigation Plan



#### Neeld Estate Community Meeting

#### April 8, 2017

This product was funded by Calvert County Government under award number NA12NOS4190136, NA24NOS4190125 and NA15NOS4190165 from the Office of Ocean and Coastal Resource Management (OCRM), National Oceanic and Atmospheric Administration (NOAA), through the Maryland Department of Natural Resources Chesapeake and Coastal Service. The statements, findings, conclusions and recommendations are those of the author(s) and do not necessarily reflect the views of NOAA or the U.S. Department of Commerce.









#### Drafted by Tay Harris and David Brownlee

# Purpose and Objectives of the Plan:

- Identify flood and inundation issues;
- Identify flood mitigation options;
- Make recommendations on mitigation measures, both short and long term, to address potential flooding and inundation impacts; and
- Serve as a planning tool to address flood issues and potential inundation issues.



#### Participants:

- Breezy Point/Neeld Estate residents;
- Breezy Point Marina and Breezy Point Beach and Campground (County Park)
- Calvert County Departments of:
  - Community Planning and Building, Environmental Section;
  - Public Safety, Emergency Management Division;
  - Public Works: Engineering and Highways Division, Water and Sewerage Division; and



Calvert County State Health Department.

### Planning Process Timeline:

- May 16, 2015: Public meeting;
- June 2015-December 2016: Preparation of draft BRNE FMP; and
- March 7, 2017 Work session with the BOCC to seek BOCC permission to distribute the BPNE FMP for public review including the Maryland State Clearinghouse 60-day review.



April 8, 2017 – Presentation to Neeld Estate and Breezy Point Community

# Breezy Point/ Neeld Estate Flood Mitigation Plan Study Area



Source: Calvert County Government



### Flood Vulnerability:

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- Neeld Estate is the 5<sup>th</sup> most flood-prone community in the County:
  - 45 structures are flood-prone; and
  - Bay Boulevard, Beach Drive, Lookout Trail, Ridge Road and Shore Drive are flood-prone.
- Breezy Point is the 7<sup>th</sup> most flood-prone community in the County:
  - 23 structures are flood-prone; and
  - Breezy Point Road, Burgess Road, Ridge Road and Willow Street are flood-vulnerable.

Flooding sources: Chesapeake Bay and Plum Point Creek.<sup>6</sup>

# Breezy Point/ Neeld Estate 100-Year Floodplain





Source: Calvert County Government

# Contributing Factors:

- Low land elevations compared to base flood elevations;
- A high water table;
- Stormwater run-off from steep slopes west of both communities and inadequate stormwater management;
- Movement of sand (littoral drift) and shoreline erosion;
- Building homes prior to the County's 1984 initial flood regulation implementation and subsequent stricter regulations passed in 2011 and 2014;
- Storm surge; and



Sea level rise and land subsidence.

# Land Elevations and a High Water Table

- Land elevations are less than 5 feet where flooding occurs;
- AE Zone base flood elevation 4 and 5 feet above sea level; and
- VE Zone base flood level 6 feet above sea level.



Stormwater Run-off & Nuisance Flooding Associated with Steep Slopes





Source: Calvert County Government





Breezy Point & Neeld Estate Historic Shoreline Changes Source: Source: Department of Natural Resources Coastal Atlas

## Littoral Drift and Shoreline Erosion



Groin Field, Jetties & Bulkhead in the Breezy Point & Neeld Estate Source: Calvert County Government

# Homes Built Prior to the Implementation of Floodplain Regulations

- Many structures were built prior to the adoption of the County's floodplain regulations in 1984.
- In 2011 and 2014, the County adopted new floodplain regulations.
- Over time floodplain regulations have become stricter. For example, the law requires:
  - Increased structure elevation (higher elevation of the first floor above the base flood elevation);
  - Elevation of outside A/C units;
  - Anchoring of fuel tanks;
- **CALVERT** Increased venting requirements, etc.

#### **Current Storm Surge**

In Breezy Point

- Category 1 hurricanes may flood portions of Breezy Point Road, Burgess Road and Ridge Road; and
- Category 2, 3 and 4 hurricanes may progressively flood larger portions of Bayview Boulevard, Breezy Point Road, Burgess Road, Highview Road, Hillside Place, Meadow Lane and Scott Street.
- In Neeld Estate, category 1,2,3 and/or 4 hurricanes may progressively flood larger portions of:
  - Bay Boulevard, Bay Parkway, Beach Drive, Cedar Drive, Knoll Road, Lookout Trail, Ridge Road and Shore Drive.



### 2050 2.1-Foot Sea Level Rise Scenario <u>BREEZY POINT</u>

- Portions of Bayview Boulevard, Meadow Lane and Prowse Road; and
- Larger portions of Breezy Point Road, Burgess Road, Ridge Road and Willow Street may become flood-prone.
- Estimated flood-prone structures = 31.





### 2050 2.1-Foot Sea Level Rise Scenario <u>NEELD ESTATE</u>

- Portions of Bay Parkway, Cedar Drive and Knoll Road; and
- Larger portions of Bay Boulevard, Beach Drive, Lookout Trail, Ridge Road and Shore Drive may become floodprone.
- Estimated flood-prone structures = 54.



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# 2100 3.4-Foot Sea Level Rise Scenario



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Neeld Estate October 4<sup>th</sup> 2015

#### BREEZY POINT

- Portions of Highview Road, Hillside Place and Shore Drive, and
- Larger portions of Bayview Boulevard, Breezy Point Road, Burgess Road, Meadow Lane, Prowse Road, Ridge Road and Willow Street may experience severe flooding.
- Estimated flood-prone structures = 36.

#### NEELD ESTATE

- Larger portions of Bay Boulevard, Bay Parkway, Beach Drive, Cedar Drive, Lookout Trail, Knoll Road, Ridge Road and Shore Drive may experience severe flooding.
- Estimated flood-prone structures = 63.

### Wetland Migration by 2050 & 2100



New Wetlands by 2050 circled/orange (assuming a 1.3-foot rise in sea level)



New Wetlands by 2100 circled/dark green (assuming a 3.4-foot inundation increase)



Source: Department of Natural Resources Coastal Atlas

Breezy Point/Neeld Estate Residents' Flooding Concerns – Ranked	Points Given by Residents
#1 Nuisance flooding associated with unmanaged stormwater	182
#2 Sewer service feasibility	167
#3 Neeld Estate Beach erosion	149
#4 Potential costs to Neeld Estate property owners to address Neeld Estate Beach erosion	125
#5 Sewer service-will it happen?	121
#6 Failed septic systems and inadequate lot sizes to accommodate septic systems	117
#7 Rising sea level and associated rising tidal water	89
#8 Lower property values due to flood vulnerability	86



#### Recommendations

#### <u>#1 Nuisance flooding associated with unmanaged</u> <u>stormwater</u>

• Conduct and implement a stormwater management study for Breezy Point/Neeld Estate.

#### <u>#2 Sewer service feasibility and #5 Sewer service – will</u> <u>it happen?</u>

- Residents are encouraged to proceed through the petition process.
- Challenges: land to accommodate system and land application of effluent, and pump stations due to steep slopes west of both communities.



#### Recommendations

#3 Neeld Estate beach erosion and #4 Potential costs to Neeld Estate property owners to address Neeld Estate beach erosion

 Residents are encouraged to work with the owner of the Breezy Point Marina to obtain dredge spoils (from the canal) to replenish the beach.

# #6 Failed septic systems and inadequate lot sizes to accommodate septic systems

 Property owners are encouraged to seek Bay Restoration Funds to upgrade septic systems or install holding tanks, or to hook-up to
CALVERT a new sewage treatment plant.



### Recommendations

# 7 Rising sea level and associated rising tidal water and # 8 Lower property values due to flood vulnerability

- For new/substantially rehabilitated structures in the 100year floodplain, elevate and increase freeboard to:
  - 3 feet 2050 2.1-foot sea level rise (SLR) scenario,
  - 4 feet 2100 3.7-foot SLR scenario (min.), or
  - 5 feet 2100 5.7-foot sea level rise scenario (max.);
- Construct amphibious homes/floating neighborhoods; or
- Retreat (demolish structure/land returns to natural state).



#### General Recommendations

- Address Tidal Overflow from the Breezy Point Canal Through Stormwater Management Measures;
- Establish a Threshold for Which Traditional Flood Mitigation Actions are No Longer Considered Adequate to Address Flooding and Sea Level Rise; and
- Conduct Outreach to Elected Officials and Residents about Increased Flood-Vulnerability and Sea Level Rise.



# Breezy Point/Neeld Estate Flood Mitigation Plan



**Neeld Estate** October 4<sup>th</sup> 2015

#### **Questions?**

**Comments?** 



**Neeld Estate** October 4<sup>th</sup> 2015







Optional slide to place between slides 14 and 15 to explain bigger picture of sea level rise trends

#### Sea Level Rise **East Coast**

Inches

Events

Flood I

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Days

#### GMSL from TPOEX/Poseidon, Jason -1 and Jason-2 satellite altimeter data

Global



- Sea level rise has:
  - Risen 3.5 inches globally.
- now averages 10 or more such days annually. \*Norfolk statistics recorded at the Sewells Point tide gauge
- SOURCES: UCS ANALYSIS; MORALES AND ALSHEIMER 2014; NOAA TIDES AND CURRENTS 2014; NOAA TIDES AND CURRENTS 2013B. Risen more along the East Coast due to land subsidence: 8 inches at



Sewells, VA and 5 inches at Boston, MA. Translates into increased days of tidal flooding annually-Charleston, NC faced 2 to 3 days in the 1970s and now it faces 10 days annually.

#### Local Sea Level Rise and Tidal Flooding, 1970–2012



Sea level has risen by about 3.5 inches globally-but more along the East Coast-since 1970. At Sewells Point, VA, for example, sea level has risen more than eight inches, and at Boston, about five inches. Rising seas mean that communities up and down the East and Gulf Coasts are seeing more days with tidal flooding. Charleston, SC, for example, faced just two to three days with tidal flooding a year in the 1970s. The city

© Union of Concerned Scientists 2014; www.ucsusa.org/encroachingtides

#### Attachment 1C Current Flood-Prone Area



### Attachment 1D

Homeowners Association/Community Property Project Authorization

For Grants Gateway Proposals

#### Homeowners Association/Community Property Project Authorization For Grants Gateway Proposals

HOA/Community Name: Neeld Estate Citizens Association (NECA)

HOA/Community Address: 5120 Shore Dr., Huntingtown Md. 20639

HOA/Community Email and Website: www.neeldestate.com, facebook at Neeld Estate

Based on language from the HOA Declaration of Covenants, Conditions and Restrictions, Amendments, Bylaws or any Notice, what are the community requirements for allowing this project to be implemented on community property? (i.e. number or percentage of member votes, board approval, etc.): The Neeld Estate Citizens Association's (NECA) by-laws stipulate actions of the association follow Robert's Rules of Order and require a quorum of no fewer than ten (10) members in good standing. At the NECA general membership meeting on Wednesday November 17, 2021, the membership was briefed on the grant proposal and requirements and voted to proceed with this grant application. The vote was unanimous and was in accordance with all NECA by-laws.

What was the date of the HOA/community meeting that determined whether or not the community was going to move forward with the project? *November* 17, 2021.

What was presented to the community and by whom? (Please attach information or concepts given to community.): Prior to answering this question, it is important to share some important background information. Roughly one year prior to the decision to move forward (i.e., on November 5, 2020) a decision was made during a NECA general membership meeting to establish a committee to explore ways to preserve the community shoreline. The committee, named the Shoreline Committee, was established in accordance with NECA by-laws and community member Jon Norris was named as chairman. The committee immediately began conducting research and exploring options to preserve the community shoreline. All community members who wished to join the committee were welcomed. The committee held regular meetings which examined various options for shoreline preservation. Committee deliberations were informed by knowledgeable guest speakers, specifically representatives of DNR (Bhaskar Subramanian), University of Maryland Extension/Sea Grant (Jackie Takacs) and Coastline Design, P.C. (Scott Hardaway). Additionally, at every NECA general membership meeting since its November 2020 inception, the Shoreline Committee briefed the NECA membership on its findings and presented options for community consideration, including but not limited to: 1) funding options (i.e., this and the Chesapeake Bay Trust grant programs) and 2) technical options (i.e., Coastline Design, P.C.'s proposal). At the November 17, 2021 decision meeting, the committee chairman educated community members further by revisiting details of the Coastline Design, P.C.'s proposed shoreline solution. The materials that formed the basis of the chairman's presentation to the community members are provided as Attachment 1D-1 in the Other Attachments section. It should be noted that these materials (and more) are available in their entirety to community members at www.neeldestate.com.

What was the number or percentage of approving votes? *The percent of approving votes was* 100%

Does it meet the community requirement to move forward with the project? All NECA by-law requirements to proceed with the grant application process have been met.

Did any community members voice concerns or request contingencies? If so, please explain: There were no areas of concern or contingencies expressed by any NECA member or any other group or individual.

What other methods of communication did you use to inform community members about the benefits and impacts of your project? (*Please attach any letters, emails, workshop handouts, etc.*) Please explain: See Attachment 1D-2 in the Other Attachments section for various email transmissions between the NECA President and the community and the Shoreline Committee Chairman and committee members, all of whom are also community members. Note that the first email transmission, which went to all community members, includes an educational flyer prepared by the Shoreline Committee.

Comments:

sign below:

Applicant Name (Rick Collins) Applicant Entity (NECA)

ard President Name (Eve Shoema

(Board President Name (Eve Shoemake HOA/Community (NECA)

Board Member Name (Kim Phillips)\* HOA/Community (NECA)

\* Treasurer

### Attachment 1D-1

Technical Information & Concepts Given to the Community

#### COASTLINE DESIGN, P.C. P.O. BOX 157 ACHILLES, VA. 23001

Proposal to develop a Shoreline Management Plan for Neeld Estate Citizens Association (NECA)

Plum Point, Calvert County, Maryland May 24, 2021

#### 1.0 Introduction and Statement of Problem

Plum Point is located along the Chesapeake Bay in Calvert County, MD (Figure 1). The Plum Point and adjacent shorelines have gone through significant shoreline change over the years (Figure 2). The NECA shoreline extends from the south jetty (adjacent to the entrance inlet into Breezy Point marina) southward about 1,200 feet to approximately to the end of Bay Parkway. This project shoreline has evolved over the years from having a relatively wide beach 25 years ago to a narrow beach to no beach at all by 2020 resulting in extensive bulkheading and further beach width reduction.

With community concerns about the ongoing and chronic beach loss, an onsite meeting with the Shoreline Committee headed by Jon Norris was held on May 21, 2021. The result of the meeting was for Coastline Design PC to develop a proposal and Scope of Work for shoreline management along the NECA shoreline. The purpose of this proposal is to develop a plan to restore and maintain a protective and stable beach system using a combination of headland breakwater and sand nourishment as well as the potential use of dredge material from the adjacent channel. The impacts of sea level rise (SLR) and Coastal Resiliency will also be addressed.

#### 2.0 Site Setting

The Plum Point coast is oriented roughly north south and a straight line fetch to the NNE of about 50 miles and a fetch to the ESE of about 75miles. This impacts the impinging wind wave climate from strong NE storms with elevated storm surge will transport littoral (shorezone) sands southward. The longer wave period but less frequent SE wind driven waves will move sand north. The Maryland Department of Natural Resources (DNR) data base reports the net littoral drift (sand movement) favors the SE but every NE storm can "counter act" that effect, at least temporarily.

In 1993 there was a wide beach from Bay Parkway northward about 800 feet where the beach narrowed almost up to the existing homes for the last 400 feet. (Figure 3). In 2007 the beach width varies from 40 -50 ft from the homes to the shoreline (Figure 4). In 2010, the north half homes began installing a bulkhead beginning with the fender pilings as seen in Figure 5. The finished bulkhead in 2012 extended from the south channel jetty about 600 feet southward along the coast except for a 35 foot opening to the beach at the end of Ridge Avenue (Figure 6). There was still a beach in front of the bulkhead. By 2020 the beach continued to narrow along shoreline with only a low tide beach along the bulkhead (Figure 7). The project shoreline today is experiencing southward migrating bank erosion and property owners have installed sand bags to abate the problem (Figure 8 and 9).

The tide range at Plum Point is 1.4 feet. According to FEMA (2014), the storm surge levels for the 10 yr, 50 yr and 100 yr storm events are 4.1 ft, 4.5 ft and 4.7 ft above mean low water (MLW). For planning purposes, we should us the 50 yr. water level. Also, according to MD DNR, a 1.3 foot rise in sea level by 2050 can be expected which we will address in the plan.

#### 3.0 Recommendation

If the current erosional trend continues the sand bagged portion may become hardened with the remaining coast following suit. To re-establish a wide, protective and stable beach front along the project shoreline, a series of headland breakwaters with sand nourishment and dune grass plantings is recommended (Figure 10). This might be similar in size and scope as the headland breakwater system along the Breezy Point Marina shoreline. However, the NECA project will be a balance between the effects of the existing hardened and non-hardened shoreline segments, level of protection and costs. Phasing scenarios will also be provided. Project costs per linear foot of shoreline may range from \$1,000 to \$1,300 per foot. These are not atypical for Bay front shoreline projects and will be dependent on the site survey. Water depths along with design lengths, widths and elevations of the structures and sand nourishment will determine quantities of rock and sand required.

#### 4.0 Costs

In order to address the project goals Coastline Design, PC proposes the following:

Task 1: Site Survey and site assessment:

\$9,050

Survey will be in Maryland State Plane horizontal coordinate system with vertical control relative to mean low water (MLW). The nearshore stability will be assessed with a combination of short cores, augers and probes.

Total	\$34,731	
Travel	406	
Task 5: Permit Fees (if applicable)	2,000	
Task 4: Prepare final plans, specifications, construction bid form, cost estimate and acquire local permits, including Critical Areas and Erosion And Sediment Control. (The plans, specifications and bid form constitute the construction bid package.)7,125		
This phase will include a pre-application site visit with MDE and the Corp	DS	
Prepare Joint Permit application (JPA) for submission and act as agent:	8,750*	
Task 3: Pre-final plans and specifications.		
The plan will include a site presentation and input from the shoreline committee.		
Task 2: Preliminary Shoreline Plan (CAD) and cost estimate:	7,400	

\*If the project is not considered a Living Shoreline there maybe a \$1,500 permit fee. Local permit fees maybe as much as \$500. Therefore, and additional **\$2000** should be budgeted for these.

A tentative timeline follows from a Notice to Proceed:

Task 1: 45 days Task 2: 30 days Task 3: 270 days (permit process includes MDE, BPW and Corps). Permits include:

Maryland Dept of Environment (MDE): Water Quality Certification Maryland Board of Public Works (BPW): Wetlands License U.S. Army Corps of Engineers (Corps): Department of the Army Permit

Task 4: 45 days after receipt of state and federal permits from Task 3.

Invoicing will be done by percentage of each task performed as agreed upon by:
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C. Scott Hardaway, Jr. President Coastline Design PC

Jon Norris Chairman NECA Shoreline Committee

If requested Coastline Design PC will assist on the construction phase.

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Task 6: Construction Management, includes weekly project	
inspection during construction:	\$20,000
Task 7: Perform an as-built survey and report	\$4,500

References

FEMA, 2014. Calvert County Maryland, Flood Insurance Study.

Maryland DNR, 2017. Littoral Drift Maps. GIS online database.



Figure 1: Plum Point and adjacent Bathymetry.





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Figure 5. 2010: Fender piles along the beach

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Figure 8: Looking north from the meeting house shore. Beach meeting took place on May 21, 2021.



Figure 9: Looking south from the meeting house shore. Beach meeting took place on May 21, 2021



Figure 10: Plum Point Concept sketch with a 100 ft spur and 3-200 ft headland breakwaters with sand nourishment .

Dune grass will be planted along the backshore and behind each structure. Maybe opportunity for low marsh too in lee of breakwater units.

## **Coastline Design PC Projects**: Examples of Headland Control, Headland Breakwaters and sills

# Headland Control

- Hog Island Headlands, James River, Isle of Wight County, VA. Designed by C. Scott Hardaway, for VA DCR. Project Length = 2,500 ft.
- St. Inigoes, St.Mary's River and Potomac River (fetch = 8 miles to SE), St. Mary's County, MD. Project Design by Coastline Design PC. Project Length = 5,000 ft. Project costs : \$1.0 million.
- Newtown Neck, Potomac River (fetch = > 40 miles to SE), St. Mary's County MD. Design by Coastline Design PC. Project Length = 4 miles, 6,500 feet on open river exposure.
- Jamestown Island, James River (fetch 9 miles to W), James City County, VA. Conceptual Design by C. Scott Hardaway, Jr. Final Design by U.S. Army Corps of Engineers, Norfolk. Project Length = 8,000 ft. Project cost: \$3.0 million
- Smith Island: Martin Is. NWR, Coastline Design PC. This is a Living Shoreline project in the truest sense: Addresses the 3.3 acre annual loss of valuable estuarine ecosystem; establishes over 8 acres of wetland and dune habitat along 20,000 feet of shoreline. Project costs: \$6.9 million
- Smith Island: Rhodes Point Project goals to maintain, restore and protect estuarine habitat as well as provide long term shore protection for the Community of Rhodes Point. Another Living Shoreline design in the truest sense: Addresses the 1.5 acre annual loss of valuable estuarine ecosystem; establishes over 5 acres of wetland and dune habitat along 1 mile of shoreline. Project Costs: \$3.7 million. Coastline Design PC

### **Headland Control**

Placing widely spaced breakwaters and allowing adjacent embankments to erode and evolve into equilibrium embayments can be a cost-effective method of reach management, as seen at Hog Island Wildlife Management Area, James River, Virginia. Installed 1989

Headland control system in Westmoreland County, Virginia, Potomac River, installed 1998.



# **Headland Control**

- St. Inigoes, St. Mary's River: installed 2002
- For Corporation of Catholic Churches, now a Maryland State Park



# St. Inigoes Shore Change



#### Installed 2006

### **Newtown Neck**



Headland control by maintaining archaeological Rich upland ridges and allowing adjacent marsh Shorelines to evolve

#### Jamestown Island James River National Park Service Installed 2004



Google Earth Imagery date June 21, 2011

## Smith Island - Martin NWR Living Shoreline Project



## Smith Island - Martin NWR Reaches B through F



Rhodes Point: Living Shoreline Protection Project -2016



# Design

The proposed plan extends along about 8,000 feet of Bay coast. It includes 18 headland breakwaters 180 to 300 feet in length and a 400 foot structure at the southern mouth of Sheep Pen Gut.

Breakwaters # 16-19 I control the coast north of Sheep Pen Gut.

Creates about 2.2 acres of low marsh and 3.6 acres of high marsh.





Rhodes Point : 10.19.19 Low marsh behind headland BW



#### Chesapeake Bay Headland Breakwaters/sills: Coastline Design PC

- Swan Point, Potomac River (fetch = 15 miles to SE), Charles County, MD, Designed by Coastline Design PC.
- Indian Head Naval Base, Charles County, Md. Designed by Coastline Design PC. Project length = 3 phases over 3.0 miles. Project cost about \$15 million
- Pax River NAS Fuel Pier, Mouth of Patuxent River, (long fetch to NE over 12 miles) St. Mary's County, MD. Designed by Coastline Design, PC.
- Pax River NAS Gate 4, Mouth of Patuxent River, (long fetch to NE over 12 miles) St. Mary's County, MD. Designed by Coastline Design, PC.. Project length = 1,500 ft.
- Pax River NAS, Solomons Annex, Patuxent River (Long fetch to NW of over 14 miles), Calvert County, MD. Designed by Coastline Design PC. Constructed by Coastal Design and Construction, Inc. Project length = 4,000 ft.
- Elms' Beach, Chesapeake Bay, (fetches to N and SE over 30 miles) St. Mary's County, MD. Designed by Coastine Design PC and Constructed by Coastal Design and Construction, Inc. Project length = 1,000 ft.
- Jefferson Patterson Park and Museum, Patuxent River, (fetch = 6.5 miles to W), Calvert County, Va. Designed by Coastline Design, PC.. Project Length = 5,500 ft.
- Strott/Jacobsen sill system ,Chesapeake Bay (fetch = 15.5. miles to ENE), Anne Arundel Co, MD. Designed by Coastline Design.
- Patuxent River NAS: Webster Field sill system, St. Mary's River, St. Mary's County MD, (Fetch = 8.0 miles to S).



The Villages at Swan Point, Site 4 Photo 3/27/12, Post-construction, pre-planting



Swan Point 9/11/13: establishing wetlands vegetation



Indian Head Naval Base: Charles County, MD



Indian Head Naval Base: Charles County, MD, sill system

Solomon's Annex Installed 1999, Google Earth photo Date 10/19/13

# 7/26/12





Jefferson Patterson Park and Museum Installed 1999

For MD Dept of Planning

Jefferson Patterson Park and Museum: S. alterniflora on tombolo and planter breakwater

## Patuxent River NAS Fuel Pier



### Patuxent River NAS Gate 4

For US Navy




## Strott/Jacobsen: Installed January 2012



## For Maryland Department of Natural Resources

## Strott/Jacobsen October 1013



## Webster Field Annex, US Navy installed April 2003



Sand fill with stone sills and marsh plantings at Webster Field Annex, St. Mary's County, Maryland



before installation

### after installation but before planting



the cross-section used for construction.

# Webster Field: 2014



November 2014

## Attachment 1D-2

Other Methods of Communication with the Community

#### Email from NECA President to Community with Educational Flyer and Link to Educational Community Website

From: <u>findmeonthebeach77@aol.com</u> Date: December 9, 2021 at 9:02:21 AM EST Subject: NECA Shoreline Restoration & Protection Project Reply-To: "<u>Findmeonthebeach77@aol.com</u>" <<u>findmeonthebeach77@aol.com</u>>

Good morning,

I'm writing to make you aware of the important work that the NECA Shoreline Committee, under the leadership of Jon Norris, is doing on behalf of the community.

The attached flyer presents the short story and our website (<u>https://www.neeldestate.com</u>) has supporting details to enable you to understand the why, what, how and who.

Several members of the committee are attending Friday's Hilltop House event and they will be happy to answer any questions you may have.

Looking forward to seeing you Friday night!

Eve Shoemaker NECA President

#### Flyer Attachment

## NECA SHORELINE RESTORATION AND PROTECTION PROJECT



## **The Problem**

Our shoreline is increasingly susceptible to coastal hazards including storms, flooding, and sea-level rise. These hazards are contributing to a worsening erosion problem.

## **The Solution**

Restore and protect our shoreline via a combination of proven techniques intended to create what's called a "living shoreline".

- · four headland breakwaters;
- sand nourishment;
- dune grass plantings; and
- possibly, beneficial use dredge material from the adjacent Breezy Point Marina channel.

## **The Benefits**

Breakwater systems have been shown to provide superior shore protection and recreate habitat along eroded shorelines. The resulting living shoreline, which includes grasses and vegetation above/below water, will absorb and reduce wave energy and also help reduce landward impacts from rising water due to global sea rise. The four gapped offshore structures allow for tidal exchange and access by fauna.

The ten waterfront properties at the north end of our neighborhood have bulkheads, aka a hardened erosion solution. Waves crash against the bulkheads creating wave reflection producing more shoreline erosion where the beach is not



Proposed "living shoreline" will absorb and reduce wave energy, minimizing landward impacts from rising water due to global sea rise.

protected. This has necessitated placement of permanent sandbags, another hardened solution, at five homes south of the bulkhead. It is anticipated that these hardened solutions will contribute to erosion continuing to travel from north to south.

Our planned breakwater solution will create a high, wide beach that buffers breaking waves along the shoreline, the cause of overwash and flooding of roads. This flooding is a community problem that's absolutely not limited to waterfront homes. Many low-lying properties flood from shoreline overwash. In the north end of the community, waterfront homes are higher than the properties behind them. Shoreline overwash flood waters become landlocked in these low areas with no way to return to the bay.

Breakwaters represent a long-term solution to our shoreline erosion problem. They are designed to last 50 years and require only periodic maintenance.



#### PROJECT COST AND SCHEDULE

#### **Design Phase:**

(including permitting) \$35K; 16 months starting as early as April 2022.

#### **Construction Phase:**

Projected \$1.6M starting as early as September 2023. Phase length TBD

#### FUNDING SOURCE

#### **Design Phase:**

One of two different grants financed with MD and Federal Government dollars; NECA Shoreline Committee submitting applications on behalf of the community per NECA meeting vote on November 17, 2021. First grant due on December 2, 2021. Second grant due on December 15, 2021.

#### **Construction Phase:**

A different grant financed with MD and Federal dollars. Applications won't be submitted until sometime (TBD) during the design phase.

100% of design and construction phase costs will be covered with grant monies; there will be no cost to Neeld Estate homeowners and residents!

#### CONTRACTOR

#### Design Phase:

Coastal Design, P.C. President, Scott Hardaway, is a recognized shoreline design expert with an extensive portfolio of relevant past projects on the Chesapeake Bay, Patuxent River, etc.

**Construction Phase:** TBD by future competitive bids

### **More Information**

See the Neeld Estate website **neeldestate.com** for more information on our project and other similar successful projects on the Chesapeake Bay and rivers in Maryland and Virginia. Reach out to NECA Shoreline Committee Chair, Jon Norris, with your questions at **jwnorris@comcast.net**.

#### Email from NECA Shoreline Committee Chair to Committee Members about NECA Grant Applications

------ Original Message ------From: "JON W. NORRIS" <<u>iwnorris@comcast.net</u>> To: "collins, lisa" <<u>Ircollins28@gmail.com</u>>, "Herrle, Rick" <<u>patrick.herrle@uscp.gov</u>>, Anne <<u>plumpt@comcast.net</u>>, "Mason, rick" <<u>rick9249@yahoo.com</u>>, "Monias, Mary-Anne" <<u>moniasmom@gmail.com</u>>, "Newton, Nancy" <<u>nancynewton800@gmail.com</u>>, Jay Norris <<u>JayNorris@comcast.net</u>>, Jon Norris <<u>JWNorris@comcast.net</u>>, "<u>pam.berty@gmail.com</u>" <<u>pam.berty@gmail.com</u>>, "pawulak, john" <<u>ipawulak@clunegc.com</u>>, "plitt, mike" <<u>mplitt@comcast.net</u>>, "Reeves, Brett" <<u>kool998@yahoo.com</u>>, "schrader, leslie" <<u>Inschrader@gmail.com</u>>, "shoemaker, eve" <<u>findmeonthebeach77@aol.com</u>> Cc: chris demeter <<u>cpdemeter1@gmail.com</u>> Date: 11/22/2021 10:48 AM Subject: Grant(s) update

Good morning. I wanted to give everyone a quick update on the two grants we are pursuing. Lisa and Rick Collins and Pam Slaughter are currently working on the two grants. They may need assistance from other committee members, in which case they will reach out and let you all know. I have contacted our state senator's office (Mike Jackson) and our county commissioner (Chris Gadway) requesting a letter of support. Thanks and have a Happy Thanksgiving!

Again, this is a complicated process in which we are pressed for time.

Links to the Grants:

1. Due Dec 2 <u>https://cbtrust.org/grants/watershed-assistance/</u>

2. Due Dec

15 https://dnr.maryland.gov/ccs/coastsmart/Pages/grants.aspx (outcome 3).

Jon Norris c. 240-216-8669

#### Email from NECA Shoreline Committee Chair to Committee Members about Meeting to Discuss Shoreline Issues & Potential Solutions

----- Original Message ------

From: "JON W. NORRIS" <<u>jwnorris@comcast.net</u>>

To: "Herrle, Rick" <<u>patrick.herrle@uscp.gov</u>>, "Mason, rick" <<u>rick9249@yahoo.com</u>>, "Monias, Mary-Anne" <<u>moniasmom@gmail.com</u>>, "Newton, Nancy" <<u>nancynewton800@gmail.com</u>>, Jay Norris <<u>JayNorris@comcast.net</u>>, Jon Norris <<u>JWNorris@comcast.net</u>>, "pam.berty@gmail.com" <<u>pam.berty@gmail.com</u>>, "pawulak, john" <<u>jpawulak@clunegc.com</u>>, "plitt, mike" <<u>mplitt@comcast.net</u>>, "Reeves, Brett" <<u>kool998@yahoo.com</u>>, "schrader, leslie" <<u>Inschrader@gmail.com</u>>, "shoemaker, eve" <<u>findmeonthebeach77@aol.com</u>>, lisa collins <<u>Ircollins28@gmail.com</u>> Date: 10/05/2021 9:32 AM Subject: NECA Business & NECA Shoreline Committee Meetings

Hello committee. For those who are available, NECA will be holding a meeting this Thursday at 6 pm in Eve's garage and I would like to have a Shoreline Committee meeting at 5pm in Jay Norris' side yard (2812 Beach Dr.) to recap the various shoreline related issues prior to the membership meeting. Thanks, hope to see you there.

#### Email from NECA Shoreline Committee Chair to Committee Members about Site Visit by and Meeting with Jackie Takacs

----- Original Message ------

From: "JON W. NORRIS" <<u>jwnorris@comcast.net</u>> To: "Herrle, Rick" <<u>patrick.herrle@uscp.gov</u>>, "Mason, rick" <<u>rick9249@yahoo.com</u>>, "Monias, Mary-Anne" <<u>moniasmom@gmail.com</u>>, "Newton, Nancy" <<u>nancynewton800@gmail.com</u>>, Jay Norris <<u>JayNorris@comcast.net</u>>, Jon Norris <<u>JWNorris@comcast.net</u>>, "pam.berty@gmail.com" <<u>pam.berty@gmail.com</u>>, "pawulak, john" <<u>jpawulak@clunegc.com</u>>, "plitt, mike" <<u>mplitt@comcast.net</u>>, "Reeves, Brett" <<u>kool998@yahoo.com</u>>, "schrader, leslie" <<u>Inschrader@gmail.com</u>>, "shoemaker, eve" <<u>findmeonthebeach77@aol.com</u>>, lisa collins <<u>Ircollins28@gmail.com</u>> Cc: Christian Demeter <<u>cdemeter@excite.com</u>>, "Norris, Jay" <<u>jaynorris@comcast.net</u>> Date: 07/17/2021 6:58 AM

Subject: Site visit with Md State Grant reps. Monday July 26 high noon

Good morning committee. I have been in contact with Jackie Takacs from Md Sea Grant and she has suggested a date of Monday July 26 at 12:00 noon to conduct the site visit for the grant evaluation of our shoreline. So, in ref to the "doodle" scheduling poll, please disregard those dates some of you had submitted since we will not be using it and have gone back to the simple but effective "be there or be square" method. Again, the visit will be Monday July 26th at 12:00 noon.

As a reminder, the purpose of this meeting/site visit is to evaluate our shoreline to determine whether it would meet the requirements for a grant from the Chesapeake Bay Trust <u>https://cbtrust.org</u> which could be used for our shoreline preservation project.

Jackie's contact info is:

Watershed Restoration Specialist APT & AEP Coordinator University of Maryland Extension - Sea Grant Extension Program Central Maryland Research and Education Center - Upper Marlboro 2005 Largo Road Upper Marlboro, MD 20774-8508 240-393-6508 jtakacs@umd.edu

Thanks, and I hope to see you there.

Also, Pam can we meet at your house again?

Jon Norris c. 240-216-8669

#### Email from NECA Shoreline Committee Chair to Committee Members about Grant Opportunities

----- Original Message ------

From: "JON W. NORRIS" <jwnorris@comcast.net>

To: "Herrle, Rick" <<u>patrick.herrle@uscp.gov</u>>, "Mason, rick" <<u>rick9249@yahoo.com</u>>, "Monias, Mary-Anne" <<u>moniasmom@gmail.com</u>>, "Newton, Nancy" <<u>nancynewton800@gmail.com</u>>, Jay Norris <<u>JayNorris@comcast.net</u>>, Jon Norris <<u>JWNorris@comcast.net</u>>, "<u>pam.berty@gmail.com</u>" <<u>pam.berty@gmail.com</u>>, "pawulak, john" <<u>jpawulak@clunegc.com</u>>, "plitt, mike" <<u>mplitt@comcast.net</u>>, "Reeves, Brett" <<u>kool998@yahoo.com</u>>, "schrader, leslie" <<u>Inschrader@gmail.com</u>>, "shoemaker, eve" <<u>findmeonthebeach77@aol.com</u>>, lisa collins <<u>Ircollins28@gmail.com</u>>

Cc: Christian Demeter < cdemeter@excite.com >

Date: 06/07/2021 8:25 AM

Subject: Shoreline Grant

Good morning committee. Pam had a few leads for shoreline grant funding and I did some investigating and believe one of the most realistic ways to get grant funding is through the Md. Chesapeake Bay Trust (funds from vehicle ches bay lic plates, etc).

The effort requires a coordination with several gov and non-gov groups, including NECA. Jackie Takas works for Md. Sea Grant and has agreed to assist us with of efforts. She has worked with Scott Hardaway on past projects and highly recommends him.

To receive the grant she said it is very important the shoreline is owned by the community (NECA) and not private individuals. And she wants to do a site visit in July with reps from MD DNR. So several things we need to do:

1. Get the documents showing NECA owns the shoreline.

2. Lock down a date for a site visit from her group, I will forward the doodle poll (scheduling tool) as soon as I get it from her.

I will reach out to Scott Hardaway and relay the info ref. this grant.

Thanks.

Jon Norris c. 240-216-8669

#### Email from NECA Shoreline Committee Chair to Committee Members with Design Phase Proposal and Past Project Information from Scott Hardaway, President of Coastline Design, P.C.

----- Original Message ------

From: "JON W. NORRIS" <<u>jwnorris@comcast.net</u>> To: "Herrle, Rick" <<u>patrick.herrle@uscp.gov</u>>, "Mason, rick" <<u>rick9249@yahoo.com</u>>, "Monias, Mary-Anne" <<u>moniasmom@gmail.com</u>>, "Newton, Nancy" <<u>nancynewton800@gmail.com</u>>, Jon Norris <<u>JWNorris@comcast.net</u>>, "<u>pam.berty@gmail.com</u>" <<u>pam.berty@gmail.com</u>>, "plitt, mike" <<u>mplitt@comcast.net</u>>, "Reeves, Brett" <<u>kool998@yahoo.com</u>>, "schrader, leslie" <<u>Inschrader@gmail.com</u>>, "shoemaker, eve" <<u>findmeonthebeach77@aol.com</u>>, john pawulak <<u>jpawulak@clunegc.com</u>>, lisa collins <<u>Ircollins28@gmail.com</u>>, jay norris <<u>jnorris@fedex.com</u>> Date: 05/26/2021 9:48 PM Subject: Fwd: Re: Project samples

Good evening committee. Attached is the SOW created by Scott Hardaway who several of us met with last Friday. Please review and let me know your thoughts. Additionally, I think we should have a committee meeting in the near future to discuss. I'll check on a meeting location for sometime after the Memorial Day weekend.

#### Jon Norris c. 240-216-8669

----- Original Message ------

From: "scott coastlinedesignpc.com" < scott@coastlinedesignpc.com>

To: " jwnorris@comcast.net" < jwnorris@comcast.net>

Cc: Glenn Gass < glenn.gass1@gmail.com>

Date: 05/25/2021 2:27 PM

Subject: Re: Project samples

Jon: Please find attached a SOW (with figures) for the Neeld Estate/Plum Point shoreline design for your review and comment. Glenn Gass PE is Coastline's design engineer.

Thanks

Scott

757.288.9062 c

On May 25, 2021 12:51 AM jwnorris@comcast.net < jwnorris@comcast.net > wrote:

Hello Scott. We are officially known as the Neeld Estate Citizen's Association (NECA). The committee you met with the other day is the Shoreline Committee created by the association. Thanks again.

#### Jon Norris c. 240-216-8669

On 05/24/2021 1:18 PM scott <u>coastlinedesignpc.com</u> < <u>scott@coastlinedesignpc.com</u>> wrote:

Hey Jon: My pleasure. I'm finishing up the SOW. Whom should I prepare this for? Right now I have the *Plum Point Property Owners Assocation*, but I suspect this is not correct.

Thanks

Scott

On May 24, 2021 9:47 AM jwnorris@comcast.net < jwnorris@comcast.net > wrote:

Good morning Scott. I just sent your packet to the committee. Thanks again for meeting with us and making the trip up to Plum Point. I'll be standing by for your scope of work document. And please let me know if you need anything from me.

#### Jon Norris c. 240-216-8669

On 05/21/2021 7:42 AM scott <u>coastlinedesignpc.com</u> < <u>scott@coastlinedesignpc.com</u>> wrote:

Jon: I put together some background info on Plum Point to share for the meeting. Got a hard copy for reference but it's better viewed on a computer.

Thanks

Scott

757.288.9062 c

On May 20, 2021 8:58 AM <u>jwnorris@comcast.net</u> < <u>jwnorris@comcast.net</u>> wrote:

Good morning Scott, I wanted to just confirm we are still set to meet tomorrow (May 21st) at 12:00 noon. We can meet at 2817 Beach Dr. Huntingtown Md (for your gps), which is along the waterfront. Thanks again.

#### Jon Norris c. 240-216-8669

On 05/08/2021 3:49 PM scott <u>coastlinedesignpc.com</u> < <u>scott@coastlinedesignpc.com</u>> wrote:

Hey John: Here are a few breakwater projects Coastline Design PC has worked on over the years. I'll get back with some potential dates this month for a site visit to Plum Point.

Thanks

Scott

757.288.9062 c