

**SECTION 510, CHESAPEAKE BAY ENVIRONMENTAL  
RESTORATION AND PROTECTION PROGRAM**

**NORTH BEACH EROSION CONTROL AND SHORELINE  
RESILIENCY PROJECT  
COLONIAL BEACH, VIRGINIA**

**PROJECT SCOPING REPORT**



**U.S. Army Corps of Engineers  
Baltimore District  
October 2024**

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# SECTION 510, CHESAPEAKE BAY ENVIRONMENTAL RESTORATION AND PROTECTION PROGRAM

## PROJECT SCOPING REPORT

### North Beach Erosion Control and Shoreline Resiliency Project

Colonial Beach, Westmoreland County, Virginia

October 2024

RESULT: Due to minimal habitat restoration benefits, limited estimated damage to public works, and estimated project costs that are high relative to estimated project benefits, USACE recommends that the project is not justified under Section 510. It has been determined that there is no federal interest in pursuing this project.

SPONSOR: Colonial Beach Department of Public Works, Westmoreland County, Virginia.

LOCATION AND DESCRIPTION: Colonial Beach is located in Westmoreland County, Virginia along the Potomac River. The project area is located within the Lower Potomac Watershed and Frontal Potomac River-Upper Machodoc Creek sub-watershed (10-digit hydrologic unit code (HUC) 0207001106) within the Lower Potomac Watershed (HUC 02070011). Shoreline areas around Colonial Beach have undergone improvements since the early 1980s. Previous erosion protection projects have been sponsored and completed by the U.S. Army Corps of Engineers (USACE) under the authorities of Section 103 of the River and Harbors Act of 1962 and Section 111 of the River and Harbors Act of 1968. Projects consisted of installation of segmented breakwaters, terminal groins, and sand replenishment. In the mid-1990s, the Virginia Department of Transportation (VDOT) constructed an additional riprap revetment along a large section of Colonial Beach's shoreline. Prior to that, a mix of different types of materials had been placed along the shore to abate erosion.

The North Beach Erosion Control and Shoreline Resiliency project is located in the Town of Colonial Beach Central Area shoreline along the Potomac River, where the northern portion of the boardwalk is at risk due to erosion caused by storm and wave action (Figure 1). The study area contains the Potomac River shoreline from approximately Maryland Avenue to approximately 50 feet north of Virginia Avenue (Figure 2). Colonial Beach requested assistance for the North Beach Erosion Control and Shoreline Resiliency project by letter (Appendix A). The project was concurrently investigated under Section 103, Coastal Storm Risk Management, of the Continuing Authorities Program; however, this project is not justified under that program.

Colonial Beach is located in Westmoreland County, VA along the Potomac River. The project area is located within the Lower Potomac Watershed and Frontal Potomac River-Upper Machodoc Creek sub-watershed (10-digit hydrologic unit code (HUC) 0207001106) within the Lower Potomac Watershed (HUC 02070011). Areas around Colonial Beach have undergone improvements since the early 1980s. Previous erosion protection projects have been sponsored and completed by the U.S. Army Corps of Engineers (USACE) under the authorities of Section 103 of the River and Harbors Act of 1962 and Section 111 of the River and Harbors Act of 1968. Projects consisted of installation of segmented breakwaters, terminal groins, and sand replenishment. In the mid-1990s, the Virginia Department of Transportation (VDOT) put in an additional riprap revetment along a large section of Colonial Beach's shoreline. Prior to that, a mix of different types of materials had been placed along the shore to abate erosion.

**PROBLEM:** This portion of the shoreline has experienced accretion and erosion, with shoreline rates of change from Very Low Accretion (+1 to 0 ft/yr) to Very Low Erosion (0 to -1 ft/yr) from 1937 through 2009 (Milligan et al. 2012). A public concrete boardwalk and ancillary lighting features are at risk due to the erosion of the shoreline. The boardwalk and lighting fixtures are at risk of being damaged or destroyed by wave action. Additionally, a storm drain inlet at the end of Virginia Avenue silts in when water is high. This inlet conveys storm water away from Virginia Avenue and outfalls into the Potomac River.

**AUTHORITY:** Section 510 of the Water Resources Development Act (WRDA) of 1996, as amended, authorizes USACE to provide design and construction assistance to non-federal entities for water-related resource protection and restoration projects affecting the Chesapeake Bay estuary. Specifically, this assistance can include projects for sediment and erosion control, ecosystem restoration, and protection of essential public works, among other purposes. As stated previously, this project was also evaluated under Section 103, Coastal Storm Risk Management, of the Continuing Authorities Program; however, this project is not justified under that program either.

**WITHOUT PROJECT CONDITION:** The north section of the beach, which has no direct shoreline protection and is separate from previous projects, may continue to erode or accrete as it has for the past several decades. Approximately twelve residential houses exist within the FEMA 100-year floodplain associated with the proposed area of improvements. There was no direct evidence of residential flooding caused by storm surge at the time of the site visit in July 2022. Additionally, a site visit revealed that the concrete boardwalk has been covered with riverbed gravel, presumably placed by wave action, suggesting the potential for accretion of the shoreline, rather than just erosion. See attached site photos.

The shoreline is classified by the U.S. Fish and Wildlife Service as estuarine and marine habitat, specifically "estuarine, intertidal, unconsolidated shore, sand, irregularly flooded"

(E2US2P), and “estuarine, subtidal, unconsolidated bottom” (E1UBL) (Cowardin, 1979). This means that the shoreline is primarily sandy with little to no vegetation. Colonial Beach is a designated bird sanctuary and has recorded ospreys, American bald eagles, herons, kingfishers, terns, ducks, and swans among many other species (CBVA, 2024). Colonial Beach is close to Westmoreland State Park, Caledon State Park, and Rappahannock River Valley National Wildlife Refuge.

Without project improvements, tides and storm surge may continue to erode the shoreline and potentially damage an existing above-ground electric line and utility poles used for lighting the concrete boardwalk area in the vicinity of Virginia and Maryland Avenues. In addition, a storm drain inlet, at the end of Virginia Avenue, conveys storm water away from Virginia Avenue and outfalls into the Potomac River. The outfall regularly silts in with high water. Colonial Beach Department of Public Works (DPW) routinely cleans out the inlet and drainage pipe, and in 2015 constructed a rip-rap apron at the outlet of the drainage pipe.

**PROPOSED PROJECT:** The Town of Colonial Beach along with a local consulting organization, Bayshore Design LLC, drafted conceptual plans of a proposed shoreline stabilization project in 2015. The plan view of the proposed stabilization is included in Appendix B. These plans formed the basis for the current proposed project. The project as proposed by the Town would provide approximately 280 linear feet of shoreline restoration and stabilization. Approximately 740 cubic yards of sand fill would be placed along an existing concrete boardwalk/seawall that runs along the shoreline. The sand fill would be graded and planted to create approximately 13,000 square feet (0.30 acres) of tidal wetlands and beach area. The sand fill would be protected with 180 linear feet of stone breakwater that would be placed approximately 50-feet offshore and roughly parallel to the shoreline. The construction would also involve modifications to the storm drainpipes. The property for the project lies within land owned by The Town of Colonial Beach. If the project included components on private lands, the sponsor would be responsible for acquiring this land, as well as any easements, relocations, rights-of-way, or disposal areas that may be required. The Town of Colonial Beach would monitor and maintain the project.

**SHORELINE RESTORATION OPPORTUNITIES:** The proposed plan may:

- Reduce coastal erosion along areas adjacent to Virginia Avenue and Maryland Avenue by implementing items outlined in the ‘proposed project’ section;
- Protect a concrete boardwalk used by residents;
- Protect an above-ground electric line and utility poles used as lighting for the boardwalk; and
- Restore coastal habitat by creating 13,000 square feet (0.30 acres) of tidal wetland habitat and beach area.

COST AND TIMEFRAME OF STUDY: As shown in Table 1, construction of the proposed plan was estimated to be \$1,048,000 with a total project cost of roughly \$2,276,000 (FY23 costs). The Project Scoping Report (PSR) phase cost is 100 percent federal (\$25,000). As stated previously, due to minimal habitat restoration benefits likely to be realized, limited estimated costs to the community associated with potential damage to public works, and the estimated project costs, which are high relative to estimated project benefits, USACE has found that the project is not justified under Section 510. Additionally, this project is not justified as evaluated under Section 103, Coastal Storm Risk Management, of the Continuing Authorities Program. Costs for similar projects were reported in the 2021 Chesapeake Bay Comprehensive Plan (USACE 2021) in 2017 dollars to be from \$92 per linear foot to \$1,280 per linear foot for beach/dune restoration; \$1,280 per acre to \$722,000 per acre for tidal wetland; and \$800 per acre to \$133,000 per acre for bayside riparian buffer.

In the event this project was to move forward to the planning phase under the Section 510 Program, which would include preparation of a feasibility report and NEPA document (begins at approval of PSR and ends at Project Partnership Agreement (PPA) execution) work for that phase would also be 100 percent federally-funded (\$175,000). If a PPA is executed, the planning phase (\$175,000) would be retroactively cost shared 75 percent federal and 25 percent non-federal. Cost-sharing for design and construction of the project would be 75 percent federal, 25 percent non-federal (\$1,713,250 federal/ \$562,750 non-federal) and would be outlined in a PPA between USACE and the sponsor. In-kind services would be expected to be \$0. The duration of the project would be approximately 3.4 years (Table 1 & Appendix C: Project Cost Summary).

The basis for the cost estimate was quantities and costs generated for similar USACE shoreline stabilization projects in the Northern Virginia area. The quantities and costs were reviewed by the USACE, Baltimore District Project Delivery Team (PDT), including members from the Baltimore District's Cost Engineering Branch. USACE, Baltimore District Engineering Division developed quantities for the project under the Section 510 program. Designs were reviewed by the PDT. District Quality Control was performed in accordance with EC 1165-2-217. A more detailed cost estimate would be prepared during the feasibility study portion of the project if the project were to be approved.

**Table 1: Estimated Project Cost and Schedule**

Task	Cost			Estimated Time for Completion
	Federal	Non-Federal	Total	
Scoping <sup>1</sup>	\$25,000	\$0	\$25,000	6 months
Planning Phase <sup>2</sup>	\$131,250	\$43,750	\$175,000	12 months
<b>Scoping and Planning Sub-Total</b>	<b>\$156,250</b>	<b>\$43,750</b>	<b>\$200,000</b>	<b>18 months</b>
Execution of PPA	-----	-----	-----	4 months
<b>Planning, Engineering, &amp; Design (PED)<sup>3</sup></b>	<b>\$180,750</b>	<b>\$60,250</b>	<b>\$241,000</b>	<b>6 months</b>
Construction	\$786,000	\$262,000	\$1,048,000	9 months
Construction Supervision & Administration/Engineering During Construction	\$114,000	\$38,000	\$152,000	During construction phase
<b>Construction Sub-total<sup>3</sup></b>	<b>\$900,000</b>	<b>\$300,000</b>	<b>\$1,200,000</b>	<b>9 months</b>
<b>Sub-total</b>	<b>\$1,237,000</b>	<b>\$404,000</b>	<b>\$1,641,000</b>	<b>37 months</b>
Contingency (44%) <sup>4</sup>	\$476,250	\$158,750	\$635,000	4 months
<b>TOTAL<sup>7</sup></b>	<b>\$1,713,250</b>	<b>\$562,750</b>	<b>\$2,276,000<sup>5</sup></b>	<b>3.4 years (41 months)<sup>6</sup></b>

<sup>1</sup> 100% Federal funding

<sup>2</sup> 100% Federal funding prior to agreement execution. If an agreement is executed, then Planning Phase is retroactively cost shared 75% Federal and 25% non-federal.

<sup>3</sup> 75% Federal and 25% non-Federal

<sup>4</sup> Contingency on Design, and Construction phases only.

<sup>5</sup> Includes the \$200,000 from the Scoping and Planning Phase.

<sup>6</sup> Estimated Time for Completion is dependent upon receipt of future funding for planning, design, and construction phases.

<sup>7</sup> FY23 costs. Due to negative Project Scoping Report, costs were not updated to FY25.

**SECTION 510 ELIGIBILITY:** This proposed project meets minimum criteria for consideration under the Section 510 authority for the ecosystem restoration project purpose as outlined in Table 2, below. However, the need for federal interest in this project has not been met due to the low level of likely benefits, both monetary and natural resource-related, associated with the proposed action by the federal government. It is questionable that the proposed 0.3 acres of wetland habitat would be stable given likely high use by people taking advantage of newly created beach, and that existing breakwaters and beach directly south of the project area that does not appear to have any vegetation. Also, it has not been demonstrated that the shoreline in this area has experienced a net loss due to erosion.

**Table 2. Section 510 Eligibility**

How Does the Proposed Project Meet the Critical Needs and Priorities Identified in the Chesapeake Bay Comprehensive Water Resources and Restoration Plan (CBCP)? When practicable, please identify reference page(s) from the CBCP plan wherein the proposed project or project area's subwatershed or watershed is discussed.	The project is formulated to address ecosystem restoration and will assist in the protection of a public work. Colonial Beach is located within the Lower Potomac Watershed (8-digit HUC # 02070011). The Lower Potomac area is identified in the CBCP Final Planning Analyses Appendix as one of many watersheds having the greatest overlap of wetland restoration opportunities and socioeconomic resources.
Which purpose(s) identified in Section 4010(a) of WRRDA 2014, as amended by Section 314 of WRDA 2022 for the Section 510 Program would this project seek to address?	The project seeks to provide protection of eroding shorelines while restoring up to 0.3 acres of shoreline and near-shore habitat. While public works would be protected by the proposed project, they are not essential public works.
Does the total project cost, inclusive of feasibility and design costs, fall within the per project cost limit of \$15 million? Please provide breakdown for feasibility, design and construction.	Yes, the total project cost would fall below the limit of \$15 million. See Table 2 for project cost breakdown.
How will the project improve water quality or quantity or use natural hydrologic features and systems?	The proposed project would help the Town to curtail possible erosion and provide aquatic and riparian habitat improvements. Vegetative plantings would include species adaptable to coastal conditions such as, Saltmeadow cordgrass ( <i>Spartina patens</i> ), American beachgrass, ( <i>Ammophila breviligulata</i> ), and Atlantic coastal panicgrass ( <i>Panicum amarium</i> ), among others. Natural and native vegetative plantings would further assist with stabilization of the shoreline, provide habitat to benthic invertebrates, fish, and shellfish, provide nutrient removal and retention and offer visual aesthetics to the shoreline.

**RECOMMENDATION:** The proposed project may reduce shoreline erosion possibly threatening the stability of a concrete boardwalk and electrical lighting. The proposed project may restore up to 0.3 acres of shoreline and near-shore habitat. In 2015, a cost estimate was provided by Bayshore Design, for repairs to the concrete boardwalk in the vicinity of Colonial Avenue and Virginia Avenue at \$120,000. While USACE does not have a current dollar estimate for repair of the electric lines and poles, it is presumed that the total figure for restoration of these utilities would be considerably less than the Section 510 Project proposed by the Town. Published shoreline change rates for the area state that this section of shoreline has either very low accretion or very low erosion. Estimated project costs are high relative to estimated project benefits, assuming that the shoreline



is eroding. Furthermore, while these utilities are public works, it has not been established that these are essential public works, leaving ecosystem restoration as the sole purpose under which this project could be pursued through Section 510. Restoration of the shoreline will provide minimal habitat benefits relative to project costs as discussed above. Therefore, whereas the project is eligible under Section 510 based on the intended project purpose, USACE has concluded that the project is not justifiable under Section 510 due to the lack of demonstrated benefits to the Chesapeake Bay.

**CONCLUSION:** Proactive measures by the Town of Colonial Beach should be continued by the Town, such as routine cleaning out of the inlet on Virginia Avenue whenever it becomes overloaded with sediment and silt.

#### **REFERENCES:**

A Framework for Coastal Flood Planning: Colonial Beach, VA. University of Virginia, School of Architecture. Fall 2020.

[https://raft.ienvirginia.edu/system/files/Framework%20for%20Coastal%20Flooding\\_Colonial%20Beach%20VA.pdf](https://raft.ienvirginia.edu/system/files/Framework%20for%20Coastal%20Flooding_Colonial%20Beach%20VA.pdf)

Colonial Beach Virginia (CBVA, 2024). Town of Colonial Beach, VA. 'Nature and Wildlife'. <https://visitcbva.com/nature/>.

Cowardin, L. M., V. Carter, F. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deep-Water Habitats of the United States. United States Fish and Wildlife Service, Washington DC.

Milligan, D.A., C.A. Wilcox, C.S. Hardaway, Jr., M.C. Cox, 2012. Shoreline Evolution: Westmoreland County, Virginia Potomac River and Rappahannock River Shorelines. Virginia Institute of Marine Sciences, William & Mary. <https://doi.org/10.21220/V5B027>

Resilience Adaptation Feasibility Tool (RAFT). February 2020. Colonial Beach Scorecard Report.

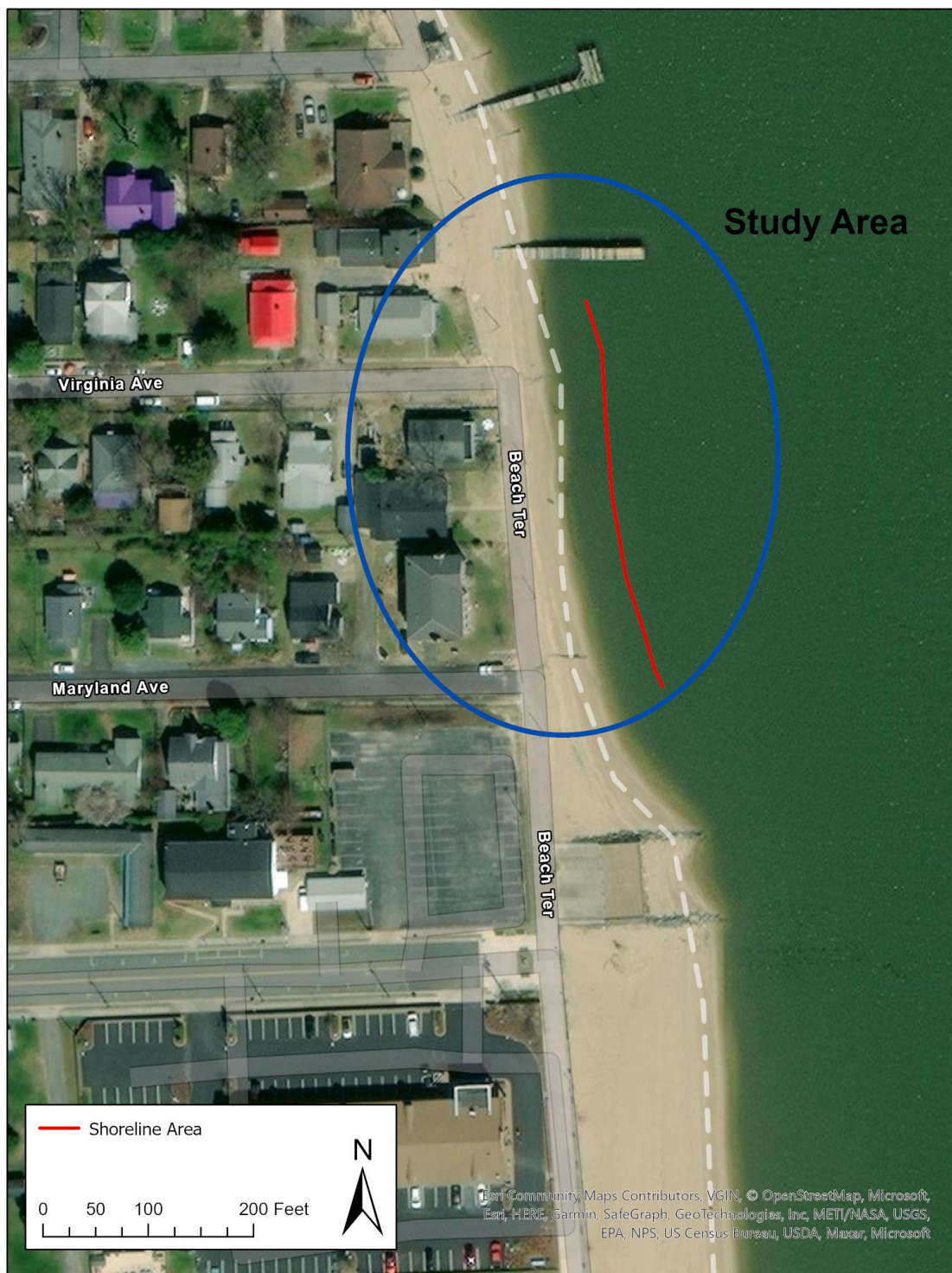
<https://raft.ienvirginia.edu/system/files/COLONIALBEACH.ScorecardReport%28final%29.pdf>

U.S. Army Corps of Engineers (USACE), 2021. Chesapeake Bay Comprehensive Water Resources and Restoration Plan. <https://www.nab.usace.army.mil/Missions/Civil-Works/chesapeake-bay-comprehensive-plan/>



**Figure 1:** The proposed project is located in the Town of Colonial Beach, Westmoreland County, Virginia.





Concrete boardwalk  
covered with  
riverbed gravel



**Photo 1:** Standing east of Virginia Avenue, facing north toward Lincoln Avenue.

Concrete boardwalk  
covered with riverbed  
gravel/beach.



**Photo 2:** Standing east of Virginia Avenue, facing south toward Maryland Avenue.





**Photo 3:** Stormwater inlet at end of Virginia Avenue, silted in from adjacent beach.



Partially submerged  
outfall pipe.  
(October 2012)

**Photo 4:** Stormwater inlet/outlet at end of Virginia Avenue.  
*Source: Google Street view (October 2012)*

Fully submerged  
outfall pipe.  
(July 2022)



**Photo 5:** Approximate location of outfall pipe from Virginia Avenue stormwater inlet.

## APPENDIX A: Letter of Interest



# Colonial Beach



## VIRGINIA

Estee S. Pinchasin, Colonel  
U.S. Army Commander  
U.S. Army Engineer District, Baltimore  
2 Hopkins Plaza  
Baltimore, Maryland 21201  
ATTN: Planning Division

Dear COL Pinchasin:

In accordance with the provisions of Section 510 of the Water Resources Development Act of 1996, the Town of Colonial Beach, Virginia, is requesting U.S. Army Corps of Engineers assistance in executing the North Beach Erosion Control and Shoreline Resiliency Project. This project is located in the Town of Colonial Beach Central Area shoreline along the Potomac River, where the northern portion of the boardwalk is at severe risk due to storm and wave action erosion. This project will help the Town curtail this excess erosion and provide valuable aquatic and riparian habitat improvements.

We are fully aware of the following non-Federal requirement associated with projects under the Section 510 authority. We are fully aware of the non-Federal requirements associated with projects under the Section 510 authority. We understand that all project costs in excess of those associated with the project scoping phase will be cost shared 75% Federal and 25% non-Federal.

We understand that the non-Federal sponsor is responsible for costs of all lands, easements, relocations and disposal areas. If this amount is less than our 25% share of the total project cost, we will provide in-kind services and/or a cash contribution to achieve the 25% cost share.

We are aware that this letter serves as an expression of non-Federal intent to cooperate on this project and is not a contractual obligation. Either party may discontinue this effort at any point prior to construction.

This project provides an opportunity to expand upon a previous project from the 1990s with the U.S. Army Corps of Engineers that did not extend to the North section of our beach, which has continued to erode severely for decades. The housing, utility, environmental, and infrastructure assets which exist in this area are in immediate threat at each surge tide or storm, including a Dahlgren testing range station supporting the Department of Defense. We are hopeful that the U.S. Army Corps of Engineers is willing and able to join us to execute the construction of this project for the good of our community.

Regards,



India Adams-Jacobs, MPA  
Town Manager

[iadamsjacobs@colonialbeachva.net](mailto:iadamsjacobs@colonialbeachva.net)  
<https://colonialbeachva.net/>

Tel. 804-296-6385

315 Douglas Ave  
Colonial Beach, Va 22443



## APPENDIX B: Concept Plans

N

— POTOMAC RIVER —

FLOOD

EBB

**PROPOSED BEACH NOURISHMENT (SHOWN SECTIONED)**  
 — APPROX. 740 CU YDS. HIGH QUALITY SAND, GRAIN SIZE 0.5 TO 0.7 MM  
 — TOTAL AREA: 13,000 S.F.

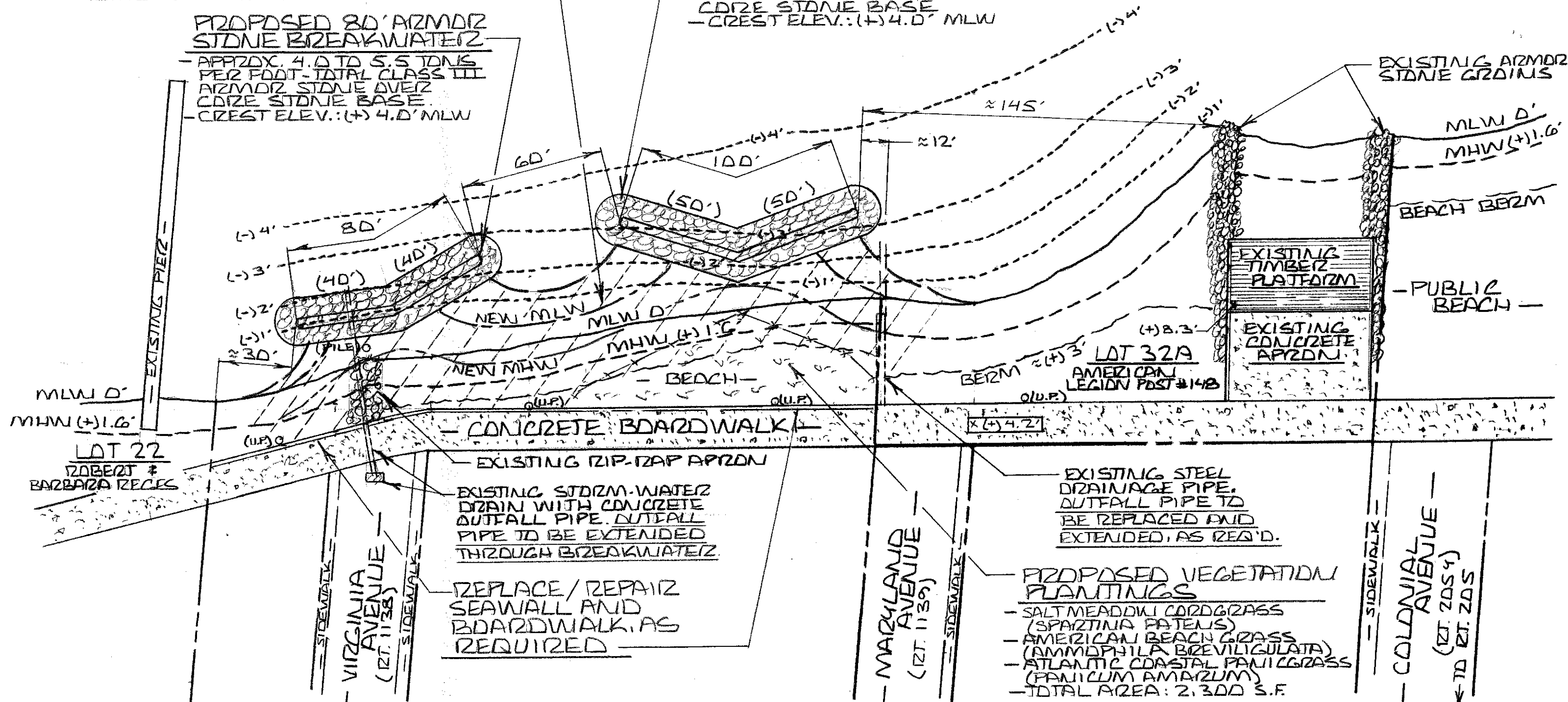
**PROPOSED 80' ARMOR STONE BREAKWATER**

— APPROX. 4.0 TO 5.5 TONS PER FOOT - TOTAL CLASS III ARMOR STONE OVER CORE STONE BASE  
 — CREST ELEV.: (+) 4.0' MLW

**PROPOSED 100' ARMOR STONE BREAKWATER**

— APPROX. 5.5 TO 7.0 TONS PER FOOT - TOTAL CLASS III ARMOR STONE OVER CORE STONE BASE  
 — CREST ELEV.: (+) 4.0' MLW

MLW CONTOURS



**PROPOSED BREAKWATERS & BEACH NOURISHMENT - SITE PLAN**

SCALE: 1" = 40' 0"

DATUM: MEAN LOW WATER (MLW D')

TIDE RANGE: 1.6'

BAYSHORE DESIGN, LLC  
 P.O. BOX 339 - KINSALE, VA 22488  
 PHONE: 804/472-4439 - FAX: 804/472-3036  
 EMAIL: CRAIG@BAYSHOREDESIGN.COM

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DATE:

1-28-15

DRAWN BY:

PALUBINSKI

SCALE:

1" = 40'

SHEET:

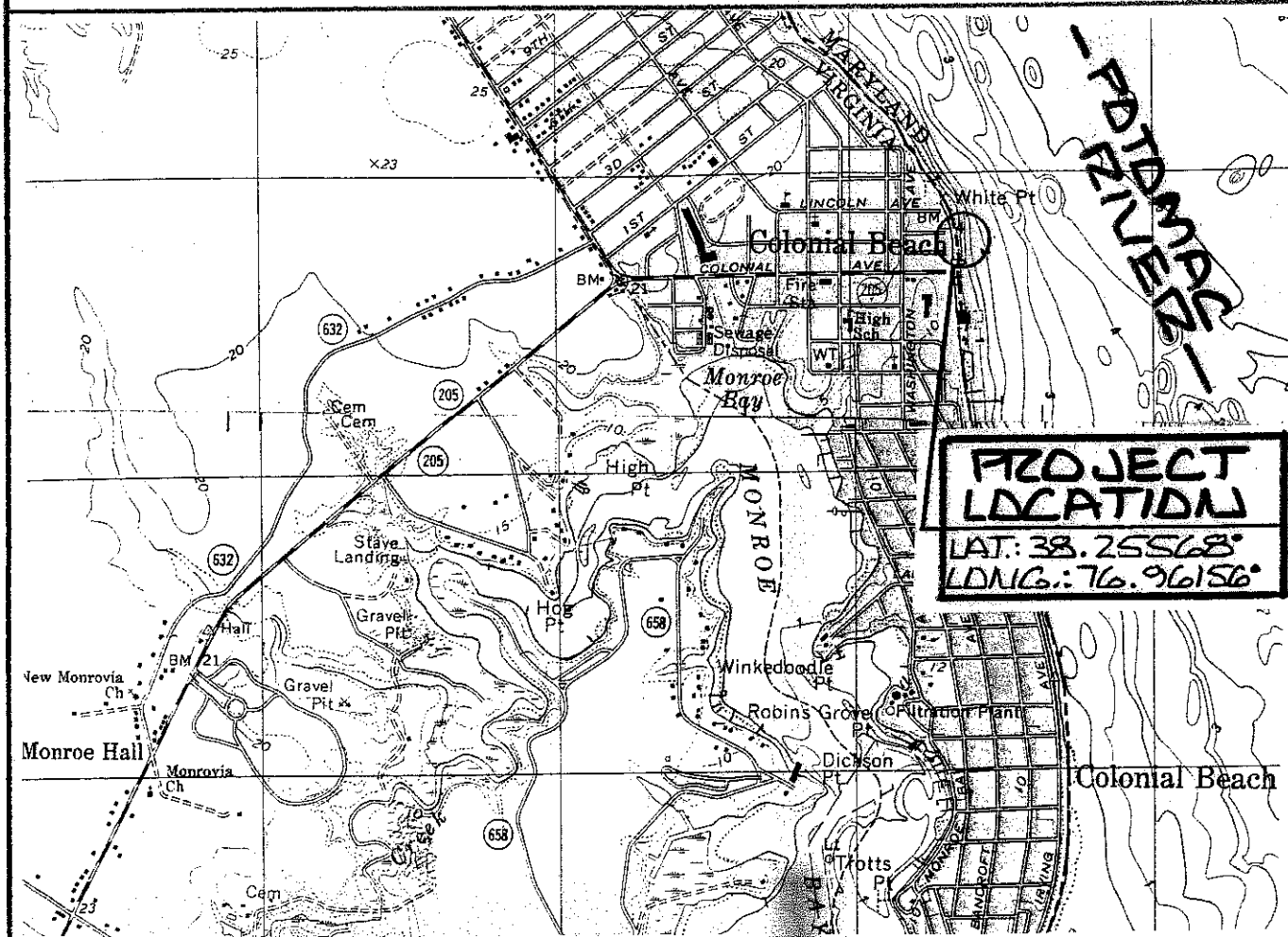
1 OF 3

**PROPOSED SHORELINE STABILIZATION PROJECT**

**TOWN OF COLONIAL BEACH BOARDWALK AND BEACH - MARYLAND AVE. TO VIRGINIA AVE.**



1. SALT MEADOW CORDOGRASS (SPARTINA PATENS), AMERICAN BEACH GRASS (AMMOPHILA BREVILIGULATA), AND ATLANTIC COASTAL PANICGRASS (PANICUM AMARIZUM)  
TO BE PLANTED 18" APART FROM (+) 3.0' MLW BEACH ELEVATION TO THE LANDWARD LIMITS OF BEACH GRADE (AT SEAWALL)
2. SALT MEADOW CORDOGRASS SHOULD BE PLANTED FROM LATE FEBRUARY THROUGH EARLY JUNE OR PER INSTRUCTION INSTRUCTION FROM THE VEGETATION CONTRACTOR OR SUPPLIER.
3. AMERICAN BEACH GRASS AND ATLANTIC COASTAL PANICGRASS SHOULD BE PLANTED FROM LATE OCTOBER THROUGH APRIL OR PER INSTRUCTION FROM THE VEGETATION CONTRACTOR OR SUPPLIER.
4. FERTILIZING IS RECOMMENDED AT THE TIME OF PLANTING. USE APPROX. ONE (1) DUNCE PER PLANT OF SLOW RELEASE OSMOCOTE FERTILIZER (TO BE PLACED IN HOLE WITH PLANT); PER INSTRUCTION FROM CONTRACTOR OR SUPPLIER.
5. ANY DEBRIS AND TRASH THAT MAY ACCUMULATE IN THE PLANTING AREAS SHOULD BE PERIODICALLY REMOVED AND DISPOSED OF PROPERLY.
6. ADDITIONAL VEGETATION TO BE PLANTED, AS REQUIRED, TO REPLACE ANY PLANTS THAT DO NOT SURVIVE AND PROLIFERATE.
7. ANY APPEARANCE OF PHragmites AUSTRALIS (REED GRASS) WITHIN PLANTING AREAS TO BE ERADICATED PER INSTRUCTION FROM WETLANDS PROFESSIONAL.



VICINITY MAP  
SCALE: 1" = 3,000'

COLONIAL BEACH NORTH-  
SOUTH, VA-MD QUADRANGLE

P.O. BOX 339 - KILSALE, VA 22488  
PHONE: 804/472-4439 - FAX: 804/472-3036  
EMAIL: CRAIG@CRAIGSHOREDESIGN.COM

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SHEET:  
3 OF 3

# PROPOSED SHORELINE STABILIZATION PROJECT

TOWN OF COLONIAL BEACH  
BOARDWALK AND BEACH -  
MARYLAND AVE TO VIRGINIA AVE.

Appendix C: Project Cost Summary

### Abbreviated Risk Analysis

Project (less than \$40M): **Section 510 Colonial Beach**  
 Project Development Stage/Alternative: **Alternative Formulation**  
 Risk Category: **Moderate Risk: Typical Project Construction Type**

FID

Meeting Date: **8/31/2022**

Total Estimated Construction Contract Cost = \$ **1,048,000**

	CWWBS	Feature of Work	Estimated Cost	% Contingency	\$ Contingency	Total
	01 LANDS AND DAMAGES	Real Estate			\$ -	\$ -
1	06 FISH AND WILDLIFE FACILITIES	Section 510 Colonial Beach	\$ 1,048,000	55%	\$ 578,000	\$ 1,626,000
2				0%	\$ -	\$ -
3				0%	\$ -	\$ -
4				0%	\$ -	\$ -
5				0%	\$ -	\$ -
6				0%	\$ -	\$ -
7				0%	\$ -	\$ -
8				0%	\$ -	\$ -
9				0%	\$ -	\$ -
10				0%	\$ -	\$ -
11				0%	\$ -	\$ -
12	All Other	Remaining Construction Items		0.0%	\$ -	\$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	\$ 241,000	15%	\$ 35,000	\$ 276,000
14	31 CONSTRUCTION MANAGEMENT	Construction Management	\$ 152,000	14%	\$ 22,000	\$ 174,000
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)				\$ -	

Totals						
	Real Estate	\$ -	0%	\$ -	\$ -	\$ -
	Total Construction Estimate	\$ 1,048,000	55.15%	\$ 578,000	\$ 1,626,000	
	Total Planning, Engineering & Design	\$ 241,000	14.52%	\$ 35,000	\$ 276,000	
	Total Construction Management	\$ 152,000	14.47%	\$ 22,000	\$ 174,000	
	Total Excluding Real Estate	\$ 1,441,000	44%	\$ 635,000	\$ 2,076,000	

Confidence Level	Base	50%	80%
Range Estimate (\$000's)	\$1,441k	\$1,822k	\$2,076k

\* 50% based on base is at 5% CL

**Fixed Dollar Risk Add:** (Allows for additional risk to be added to the risk analysis. Must include justification. Does not allocate to Real Estate.