

STUDY OVERVIEW

Middle Peninsula State Park Section 510 Program, Chesapeake Bay Environmental Restoration and Protection

Study Authority

Section 510 of the Water Resources Development Act of 1996, as amended, authorizes the Corps to provide design and construction assistance for water-related resource protection and restoration projects within the Chesapeake Bay watershed.

Project types include sediment and erosion control, protection of eroding shorelines, ecosystem restoration, etc.

The Chesapeake Bay Comprehensive Plan provides a list of potential projects for implementation under this program.

Non-Federal Sponsor

The Virginia Department of Conservation & Recreation (DCR)



Location

Approximately 2,000 linear feet of shoreline along the York River in Gloucester County, Virginia.

Located within Middle Peninsula State Park (now a unit of Machicomoco State Park – DCR’s Master Planning process currently underway).



STUDY PURPOSE

Along the shoreline of the York River, existing protection measures, specifically the wooden bulkhead and timber groins, are degrading and no longer effective.

- Erosion is occurring behind the structures and along the marsh habitat that has never been protected.
- Safety hazards posed by these failing structures will become increasingly dangerous, particularly when the park opens to the public.

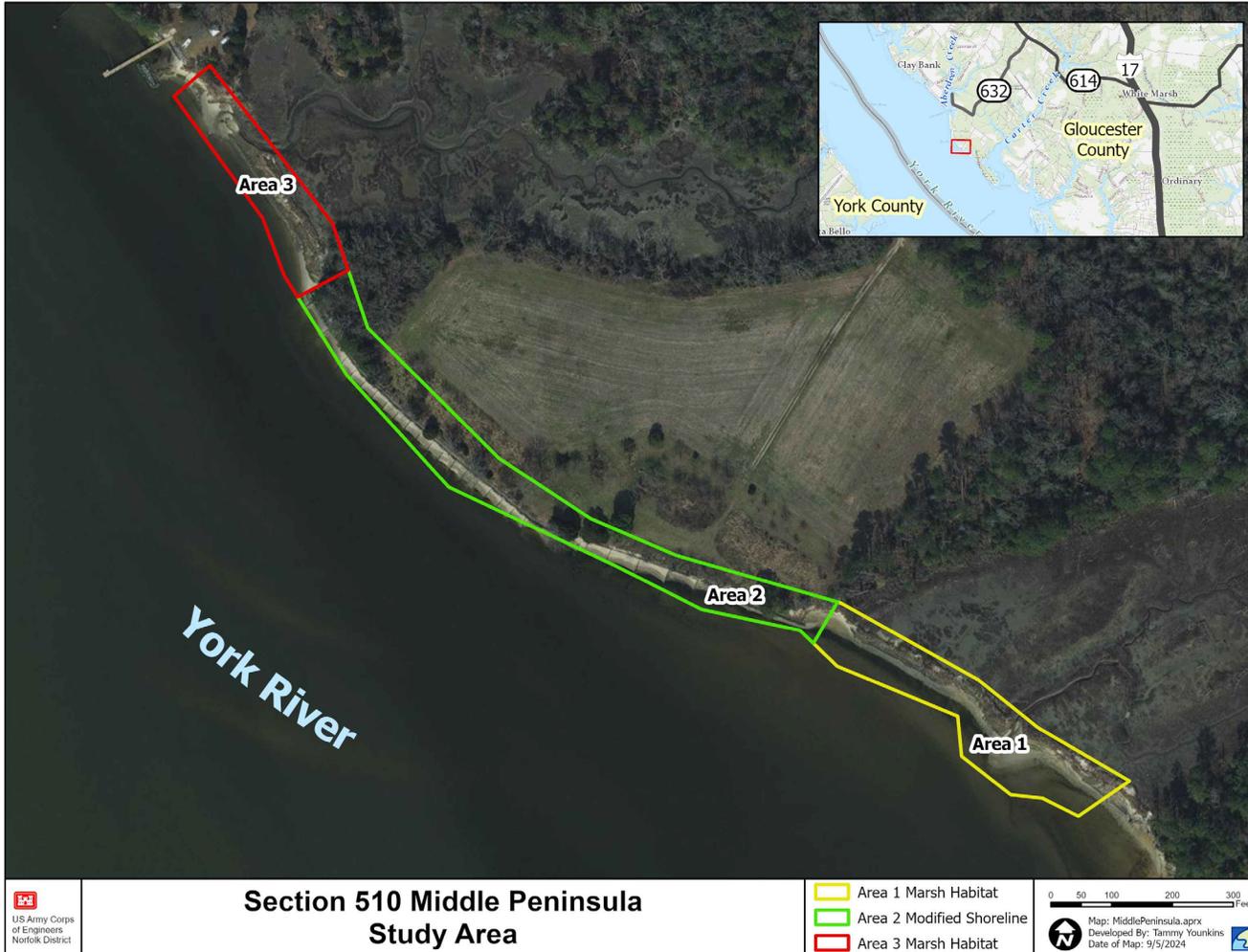
Historic installation of the structures has resulted in loss of shoreline dynamic stability and habitat connectivity.

The primary **objectives** of the study are to:

- Naturalize the shoreline to restore dynamic stability and provide shoreline protection against wind driven wave erosion in the study area over the 50-year period of analysis.
- Restore native aquatic habitat and increase habitat connectivity, quantity, and diversity within the study area over the 50-year period of analysis.



ALTERNATIVE PLANS



1

The *No Action Alternative*, which represents the future without project condition.

Estimated Total Project Cost \$0

2A

Area 2: A combination of sills and breakwaters, with sand fill and vegetation behind. Removal of existing structures.
Area 1/3: Marsh fringe enhancement, toe protection, and subtidal, offshore reef habitat.

Estimated Total Project Cost: \$13,218,000

2B

Area 2: A combination of sills and breakwaters, with sand fill and vegetation behind. Removal of existing structures.
Area 1/3: Marsh fringe enhancement with toe protection.

Estimated Total Project Cost: \$12,753,000

3A

Area 2: A sill system, with sand fill and vegetation behind. Removal of existing structures.
Area 1/3: Marsh fringe enhancement, toe protection, and subtidal, offshore reef habitat.

Estimated Total Project Cost: \$11,424,000

3B

Area 2: A sill system, with sand fill and vegetation behind. Removal of existing structures.
Area 1/3: Marsh fringe enhancement with toe protection.

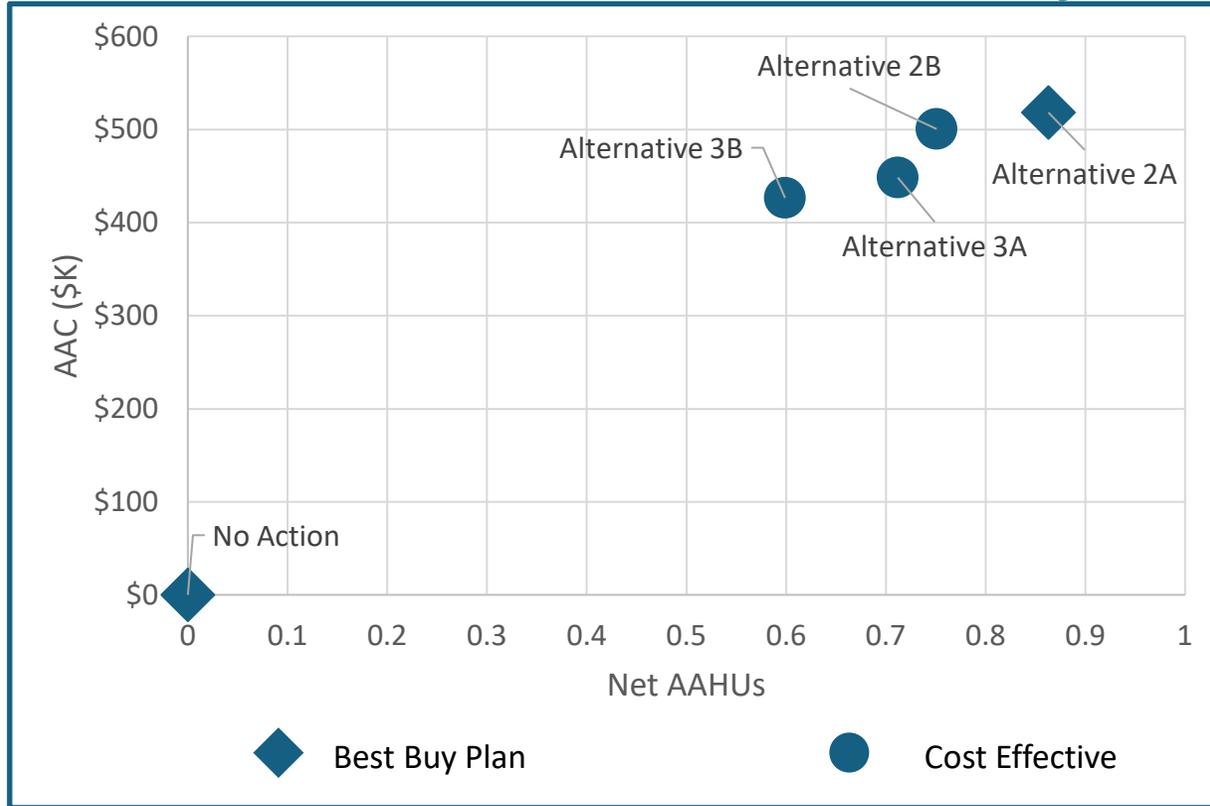
Estimated Total Project Cost: \$10,869,000

*October 2024 Price Levels, FY25 Discount Rate of 3%

ALTERNATIVE EVALUATION



Cost Effectiveness/Incremental Cost Analysis



Alternative	Total AAC*	Net AAHU	CE/ICA Results
1 (No Action)	\$ -	0	Best Buy
2A	\$518,313	0.863	Best Buy
2B	\$500,654	0.751	Cost Effective
3A	\$448,420	0.712	Cost Effective
3B	\$426,578	0.599	Cost Effective

*Notes: October 2024 Price Levels, FY25 Discount Rate of 3%; Total Average Annual Cost inclusive of estimated OMRR&R costs.

Tentatively Selected Plan: Alternative 2A

- Based on the analysis, Alternative 2A is the only **Best Buy Plan** of the action alternatives.
- Maximizes benefits for the alternative plans under consideration.
 - Provides the greatest, and most diverse, ecological and social benefits.
- Alternative 2A is not subject to any additional project risks or uncertainty compared to the other alternatives evaluated.

Total Project Cost (Fully Funded):	\$13,218,000
Federal Share (75%):	\$9,914,000
Non-Federal Share (25%):	\$3,305,000

Cost Effectiveness/Incremental Cost Analysis (CE/ICA) = Benefits measured in terms of environmental output and compared to annualized project costs. The process reveals the most efficient means of obtaining the desired (highest) level of output (benefits).

Net Average Annual Habitat Unit (AAHU) = Average Annual Model Output x Average Acres

Average Annual Cost (AAC) = Annual estimate of the total cost of the project spread over the life of the project (50-years). Inclusive of Operations, Maintenance, Repair, Replacement & Rehabilitation (OMRR&R).

TENTATIVELY SELECTED PLAN ALTERNATIVE 2A

Legend

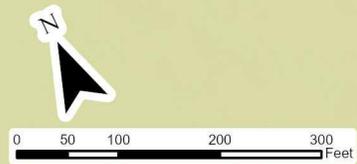
- Private Lease Boundaries
- Measure**
 - Breakwater
 - Habitat Gap
 - Offshore Reef Habitat
 - Sand Fill
 - Sill
 - Toe Protection
 - Vegetation and Sand Fill
 - Marsh Fringe Enhancement
 - Temporary Haul Route
 - Temporary Lay Down

Marsh Fringe Enhancement with Toe Protection and Offshore Reef Habitat

Marsh Fringe Enhancement with Toe Protection and Offshore Reef Habitat

VMRC Private Lease Number: 22791

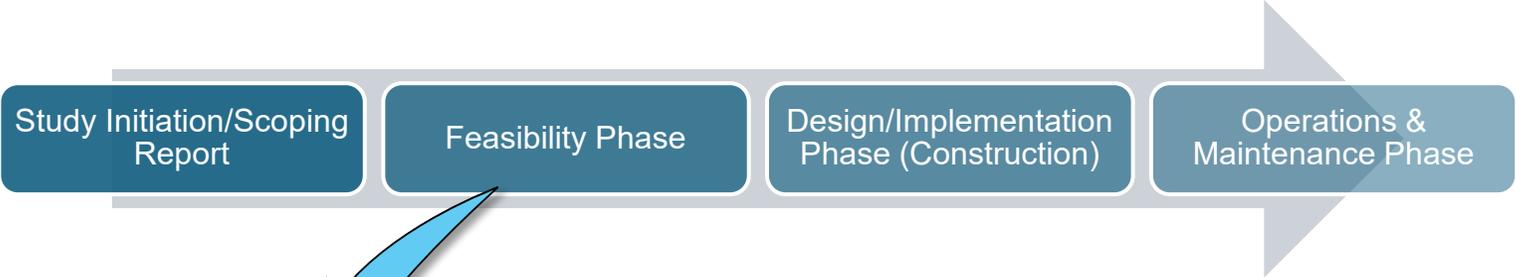
Removal of Existing Structures, Breakwater/Sill System with Vegetation and Sand Fill



STUDY SCHEDULE & COST SHARE



General Section 510 Process



The public has 30 days from Draft Report Release to provide input on the Impact Assessment and Tentatively Selected Plan.

Feasibility Phase Process



Feasibility Cost Share	Design & Implementation Cost Share	OMRR&R	Total Project Limit
Retroactively cost shared 75% Federal and 25% Non-Federal ¹	75% Federal 25% Non-Federal	100% Non-Federal	\$15,000,000 ²

1 - 100% Federal funding prior to signing Project Partnership Agreement.
 2 - Includes initial scoping report and feasibility phase.



*Based on estimated Design and Implementation Schedule

ENVIRONMENTAL & CULTURAL RESOURCES



Ongoing Environmental and Cultural Compliance Efforts

- Clean Water Act
- Coastal Zone Management Act
- Endangered Species Act, Section 7
- Fish and Wildlife Coordination Act
- Magnuson-Stevens Fishery Conservation and Management Act
- National Environmental Policy Act
- National Historic Preservation Act, Section 106

Ecological Modeling for Alternative Evaluation

- New England Salt Marsh Model (USEPA 2006)
 - Quantifies habitat value of coastal salt marshes
- Oyster Habitat Suitability Index Model (Swannack and Reif 2014)
 - Calculates habitat suitability for oyster restoration

Highlights

- Federally Listed Species in Action Area
 - Northern Long-eared Bat
 - Atlantic Sturgeon
 - Green Sea Turtle
 - Kemp's Ridley Sea Turtle
 - Leatherback Sea Turtle
- Cultural and Archaeological Resources
 - Programmatic Agreement for potential impacts to historic resources
 - Cultural resource surveys anticipated during the Design and Implementation Phase
- Full environmental and cultural compliance is anticipated with approval of the Final Integrated Feasibility Report and Environmental Assessment

NATIONAL ENVIRONMENTAL POLICY ACT



What is NEPA?

National Environmental Policy Act (NEPA) 1969 as amended:

- Requires federal agencies to consider and disclose the environmental effects of their proposed actions and **consider public input during the NEPA process.**
- The NEPA process includes both a decision making and public involvement process.
- During the NEPA process, we determined that the project's environmental impacts are not significant, and an Environmental Assessment was prepared.
- The NEPA process must be completed before any decision is made by a federal agency that may affect the human environment.

This meeting fulfills the official NEPA public involvement requirement.

Environmental Topics Evaluated

- Aesthetics
- Air Quality
- Bathymetry, Hydrology, and Tidal Processes
- Benthic Fauna
- Climate Change
- Cultural Resources
- Environmental Justice
- Fishery Resources and Essential Fish Habitat
- Floodplains
- Geology and Soils
- Hazardous, Toxic, and Radioactive Waste
- Noise and Vibration
- Occupational Health and Safety
- Recreation
- Socioeconomics
- Special Status Species
- Vegetation, Wetlands, and SAV
- Water Quality
- Wildlife

Impact evaluations conducted during preparation of the Environmental Assessment have determined that no significant impacts would result from implementation of the Tentatively Selected Plan.

How Can I Provide Comments?

You may fill out a written comment today and drop it in the comment box or send comments via email or mail.

Contact Information

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Study Website

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**Deadline to
provide
comments:
December 6**