

## **APPENDIX E: PUBLIC AND AGENCY COORDINATION**

- **Agency Kick-Off Meeting - January 22, 2020**
- **Agency Coordination Meeting - June 22, 2020**
- **Agency Coordination Meeting - September 24, 2020**
- **Agency Coordination Meeting - February 23, 2021**
- **Agency Coordination Meeting - December 6, 2021**
- **Joint Evaluation Committee Meeting - March 31, 2021**
- **MDOT MPA Spotlight Series Presentation**
- **Water Quality Certificate and Tidal Wetlands License  
Public Notice - October 22, 2021**
- **Public and Agency Comments**





**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Kick-off Meeting**

22 January 2020; 10:00 - 12:00 p.m.

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1. Project background
2. Purpose of Design Phase and approach for two islands
3. Initial schedule
4. Current activities
  - a. Scope development
  - b. NEPA/Agency coordination
5. Review of Feasibility Phase biological surveys
6. Discussion of agency perspectives
  - a. Identify Design Phase surveys and data needs
7. Path Forward and Action Items

# MID-CHESAPEAKE BAY ISLANDS ECOSYSTEM RESTORATION PROJECT

## DESIGN PHASE AGENCY COORDINATION KICK-OFF

Angie Sowers

USACE - Planning

22 January 2020

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# AGENDA

- Project background
- Purpose of Design Phase and approach for two islands
- Initial schedule
- Current activities
  - Scope development
  - NEPA/Agency coordination
- Review of Feasibility Phase biological surveys
- Discussion of agency perspectives
  - Identify Design Phase surveys and data needs
- Path Forward and Action Items

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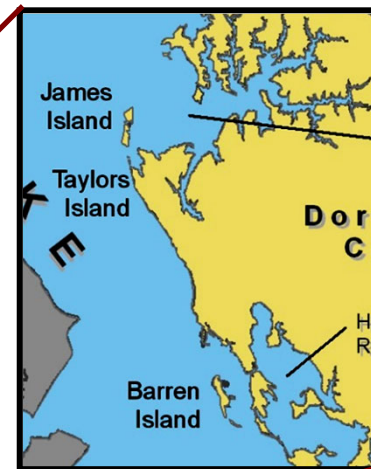
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# Mid-Chesapeake Bay Island Ecosystem Restoration Project Location



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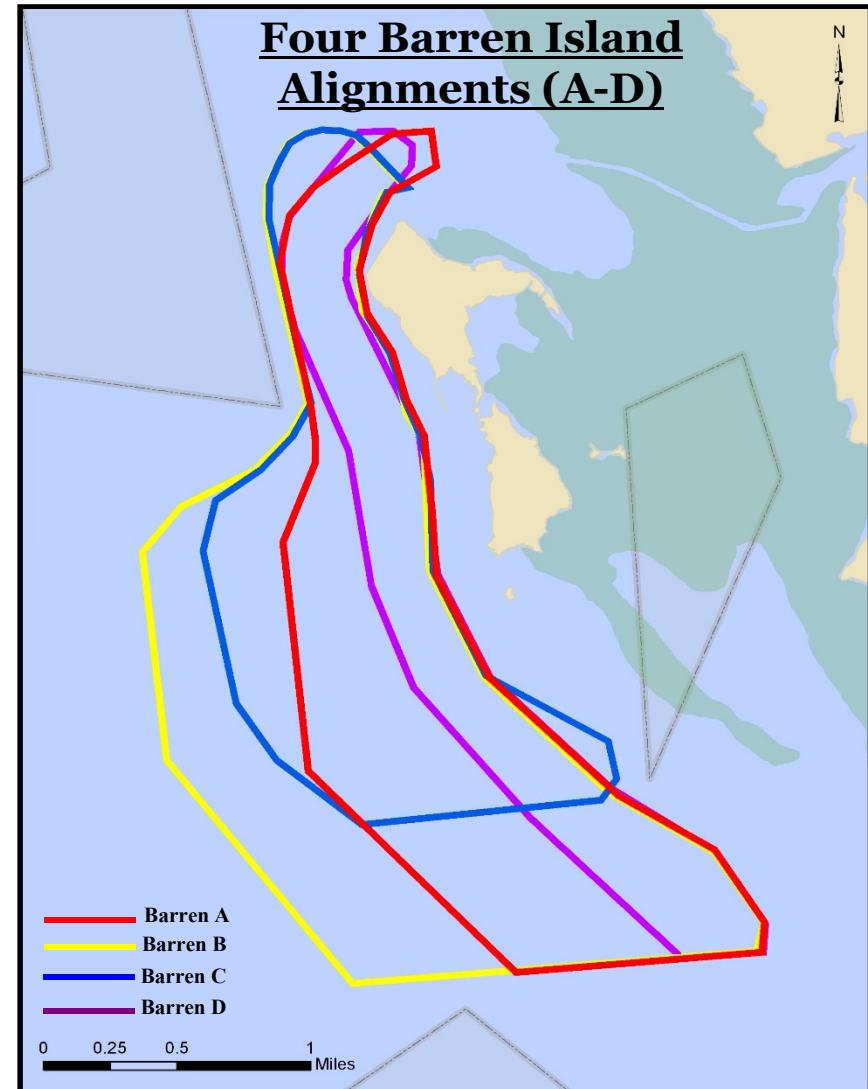
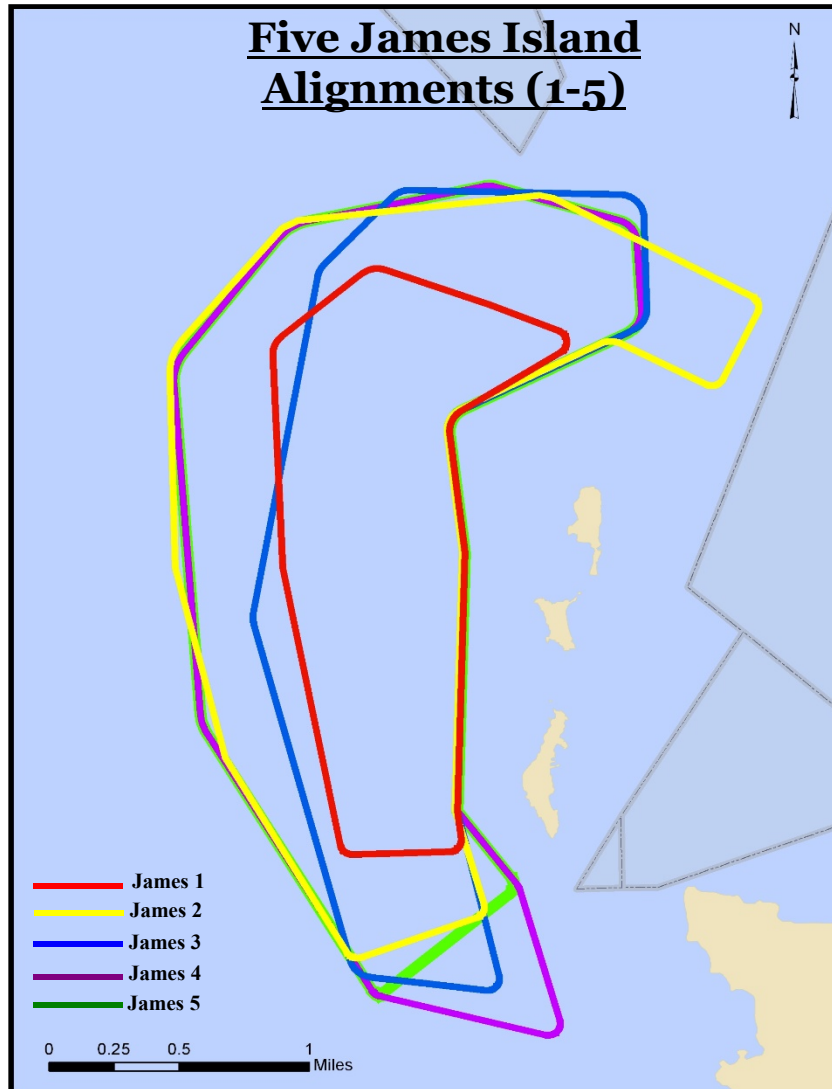
## PROJECT BACKGROUND

- Feasibility study conducted from 2002 to 2009
- ROD signed 2019 concluding the Feasibility Phase
- Planning, Engineering, and Design Phase started late 2019





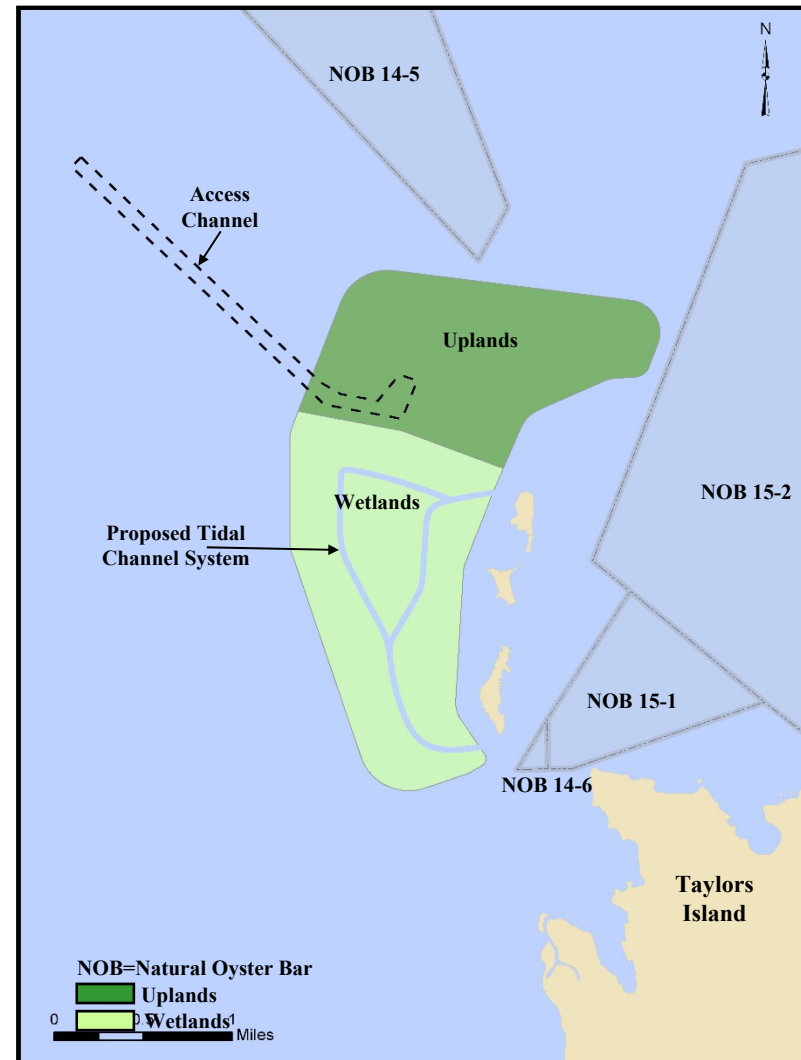
## Alignments Evaluated



## Recommended Plan

### James Island

- 2,072 acres
- 55% wetland, 45% upland
- Upland dike height: 20 ft
- Access Channel Dredging
- Capacity: 90-95 mcy
- Placement Duration: 28-30
- Design Features
  - Tidal channels through wetlands
  - Freshwater ponds
  - Intertidal/unvegetated mudflats
  - Bird nesting structures



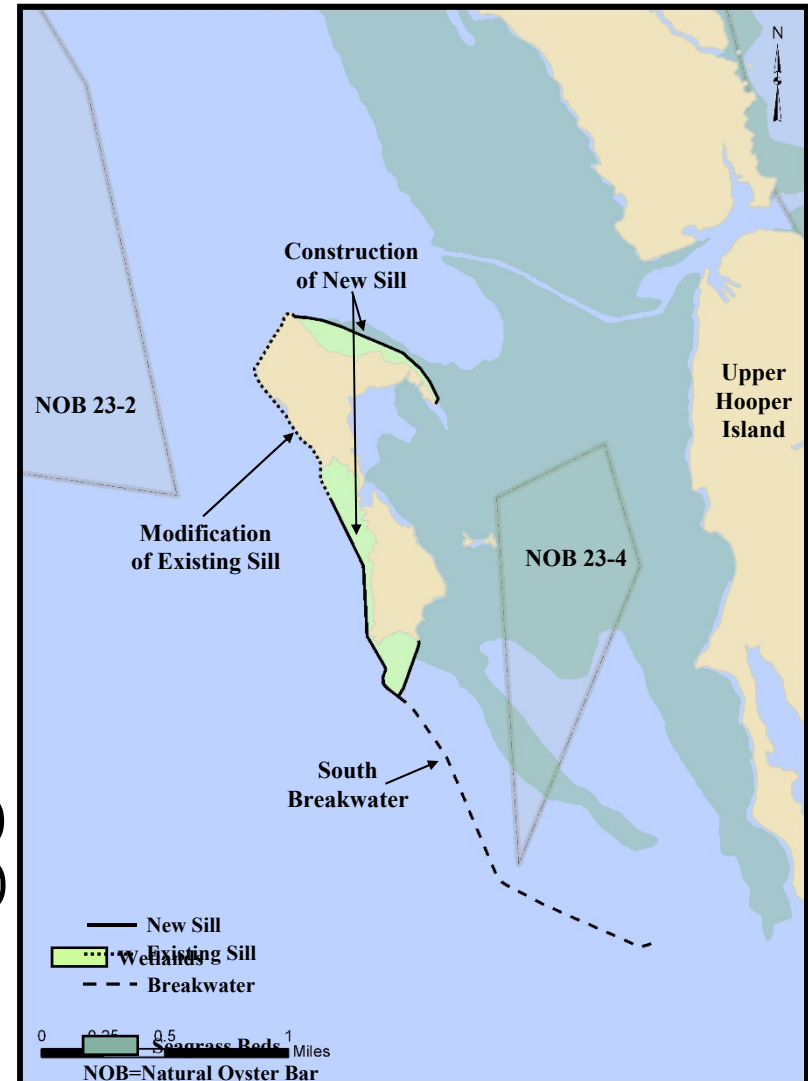
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## Recommended Plan

### Barren Island

- 72 acres of wetland restoration, plus protection of existing island remnants and seagrass beds
- Sill height: 4 ft
- Southern Breakwater height: 6 ft
- Capacity: 0.38 mcy
- Placement Duration: ~7 years
- Design Features:
  - Existing sill modifications (4,900 ft)
  - Northern sill construction (9,760-ft)
  - Southern breakwater construction (8,200-ft)



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## Environmental Compliance



- Draft Feasibility Study/EIS was released in August 2006; ROD signed 2019
- Received highest rating (lack of objections) from US Environmental Protection Agency
- No major objections or comments were received
- During process of updating NEPA in 2017 to enable ROD to be signed, it was decided with relevant agencies to complete update during design phase
  - Essential Fish Habitat
  - Endangered Species Act
  - Fish and Wildlife Coordination Act
  - Clean Water Act – Section 401 and 404
  - Critical Area Commission
  - Cultural



## PURPOSE OF DESIGN PHASE AND APPROACH

*Primary goal* - provide full design, reporting, plans and specifications for procurement of construction services for James and Barren Island.

### *Barren Island*

- Design as a complete standalone project
- Bid all work out under one complete construction contract
- Initiate NEPA as a supplemental EIS, but anticipate a FONSI will be final product (per 40 CFR 1502.9)

### *James Island*

- Similar approach to Poplar Island
- Design for phased construction
  - Initial design efforts - perimeter dikes, access channel, and permanent facilities for construction management
  - Future design work - wetland cell, tidal gut, and upland design features
- Initiate NEPA as a sEIS minus public scoping
  - may become EA if no significant impacts are determined

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# SCHEDULE

## *Barren*

- Development of survey and sampling scopes: winter 2019 – 2020
- Award AE contract: spring 2020
- ERDC modeling: spring/summer 2020
- NEPA update completed by March 2021
- Design Document Report (DDR): spring 2021
- Request CG appropriations for FY22
- Construction begins: summer 2022

## *James*

- Development of survey and sampling scopes: winter 2019 – 2020
- ERDC modeling and in-house design: spring 2020 thru winter 2024
- NEPA: spring 2021 to summer 2022
- Draft Design Document Report (DDR) – winter 2022
- Request CG appropriations for FY24
- Construction begins - summer 2024

# CURRENT RELEVANT ACTIVITIES

- Scope development
  - Hydrographic surveys
  - Soil sampling
  - Aerial photography and mapping
- NEPA
  - Initiate agency coordination
  - Identify existing data
    - Waterfowl area survey (1991 – 2019)
    - Colonial waterbird survey (1985 – 2017)
    - VIMS SAV surveys (1978 – 2018)
  - Determine survey needs



# FEASIBILITY PHASE BIOLOGICAL SURVEYS

- Previous surveys for James and Barren undertaken in summer 2002, fall 2002, winter 2003, and spring 2003
  - Water quality
  - Sediment characterization
  - Plankton – phytoplankton and zooplankton
  - Benthic species – clams, oysters, blue crab, horseshoe crab, macroinvertebrates/benthic community
  - Fish
    - Seasonal sampling
  - Bottom trawling, beach seine, gillnetting, pop net
    - Commercial harvests
  - Avian - Shorebirds and Wading Birds, Waterfowl, Song birds, raptors
  - Terrestrial - Vegetative communities, Invertebrates, Insects (butterflies), Amphibians, Reptiles, Mammals
  - Wetland surveys
  - SAV - spring and summer surveys



# AGENCY PERSPECTIVES AND INPUT

1. Fish and Wildlife Service
2. NOAA/National Marine Fisheries Service
3. Maryland Department of Natural Resources
4. Maryland Department of the Environment



# DESIGN PHASE BIOLOGICAL SURVEYS AND DATA NEEDS

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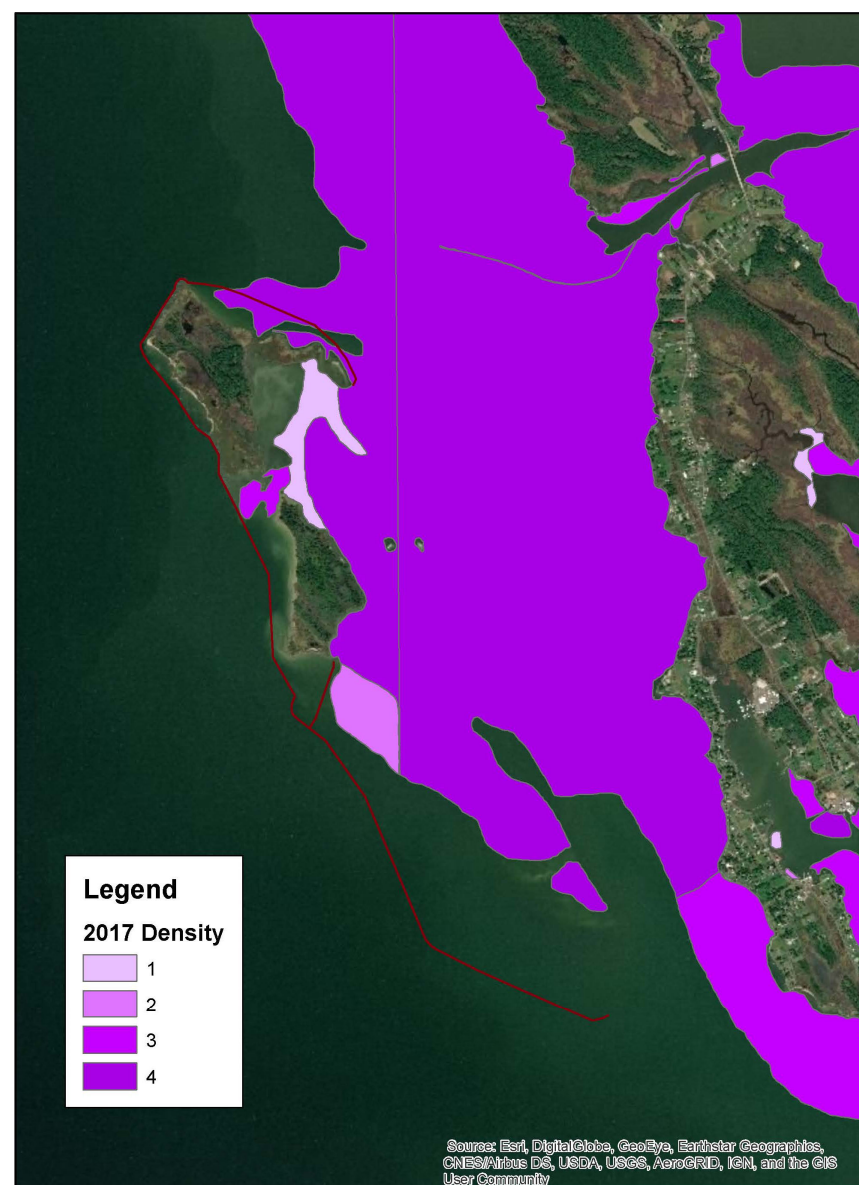
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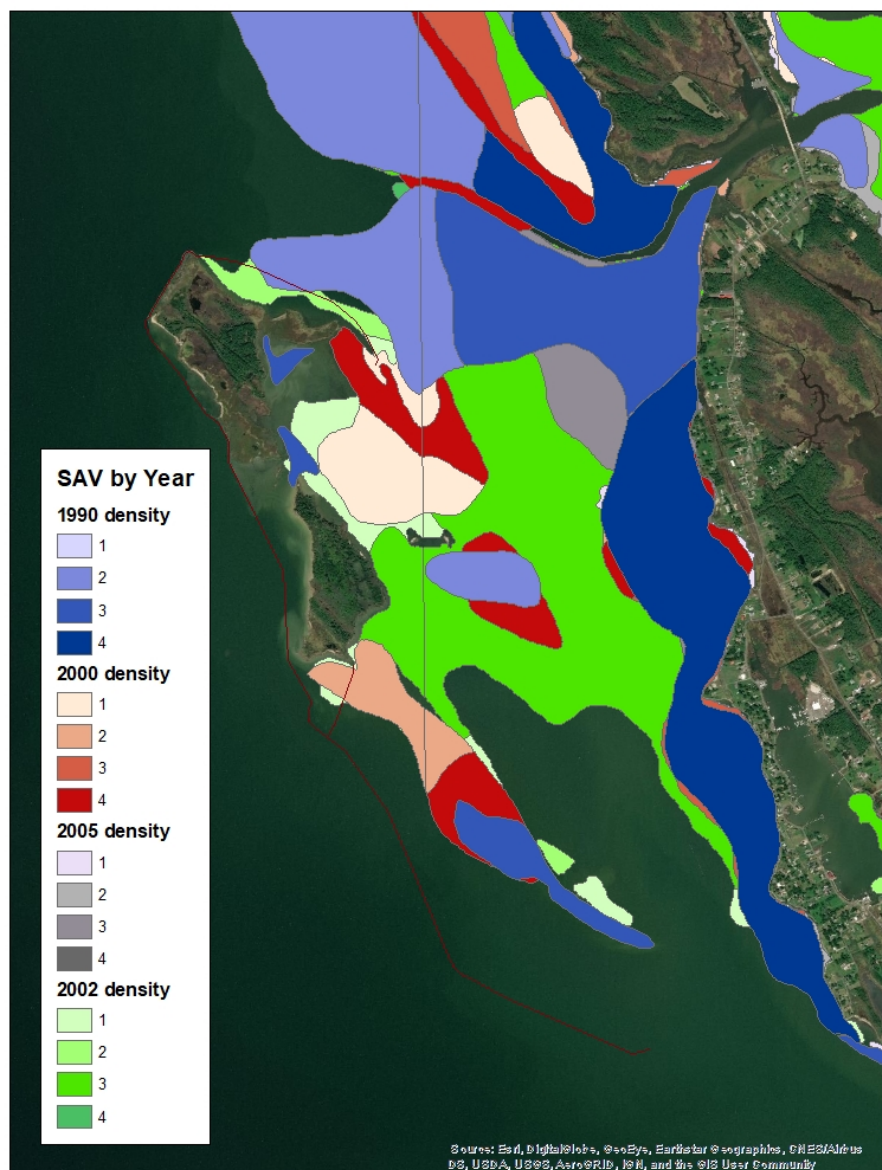
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## PATH FORWARD AND ACTION ITEMS

- Develop scopes for surveys
- Provide input to Barren Island H&H modeling
- Develop habitat map for Barren Island



## **MONITORING** (primarily for future discussion)

- Monitoring activities occurring at Poplar
  - Exterior Sediment Monitoring – MGS
  - Wetland Vegetation – FWS
  - Wetland Soil & Vegetation (in newly constructed wetland cells) – UMCES
  - Exterior Water Quality (separate from discharge monitoring) – MES
  - Turbidity monitoring – only during construction phases
  - Benthics, tissue, and community – EA Eng.
  - Fisheries Use of Proximal Waters – NOAA
  - Wetlands Use by Fish – NOAA
  - Wetlands Use by Wildlife – USGS, FWS
  - Bird Utilization Counts (26 per year) – MES
  - SAV – FWS
  - Shellfish Bed Sedimentation – MGS
  - Interior algae monitoring – MES
  - Terrapins – Ohio University



**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Kick-off Meeting**

**Meeting Minutes**

22 January 2020; 10:00 - 12:00 p.m.

---

**Participants:**

USACE – Charles Leasure, Angie Sowers, Ray Tracy

MPA – Dave Bibo, Amanda Penefiel

MES – Cassandra Carr, Maura Morris

MDE – Heather Nelson, Mary Phipps-Dickerson

DNR – Dave Brinker, Roland Limpert

FWS – Robbie Callahan, Chris Guy, Matt Whitbeck

NMFS staff on phone – Kristy Beard, Karen Greene, Brian Hopper, Dave O'Brien

USACE (Sowers) provided a summary of the project, purpose of the design phase, two island approach, initial schedule, and status of current activities.

Current activities are focused on developing scope of works for various aspects of the project, and initiating NEPA and agency coordination.

Objectives of this meeting were to re-introduce the project to resource agencies, initiate agency coordination, receive initial input and direction from resource agencies as to tasks on which to focus NEPA update, and discuss survey and data needs. USACE (Sowers) provided a summary of Feasibility Phase biological surveys. Ensuing discussion is summarized below:

**NMFS**

1. Conditions have changed - have seen water temperature increases, possible change in species
2. Can check in with NCBO about current data that could characterize current conditions - contact Bruce Vogt
3. With respect to seasonality of future surveys - all four seasons are normally documented
4. SAV is more important to NMFS than island habitat
5. Focus SAV surveys where design will overlap SAV presence. Density will determine if it can be impacted (K. Beard).

**FWS**

1. Benthic invertebrates are a prime concern - very dynamic - will change seasonally - do all 4 seasons
2. It will be important to develop a success metric to lead data collection and future monitoring efforts
  - a. For all data to be collected, think through how the data will be used and how the data will affect design.
  - b. Metrics could be established to either 1) provide the conditions for habitat use or 2) to document use of a habitat by certain species

- i. For species present, the goal would be to sustain or improve populations. In these cases, need to know baseline conditions. e.g., stabilize or Improve heron habitat (shoreline restoration should do this). Perform a spring quantitative survey.
  - ii. For species that do not currently inhabit the islands, the objective would be to set stage for use by providing sustainable habitat. In these cases, there is no baseline to document. e.g., provide nesting habitat for terns, etc. Habitat not used MAY NOT be a failure.
- 3. Survey for predatory mammals, but not others
- 4. Insects not necessary – don't expect to be a metric
- 5. Look at possibility of including intertidal/mudflat habitat within wetland design at breakwater – consider including as a success metric
  - a. Design considerations
    - i. Size: >1 ac, but the larger the better
    - ii. Shape: better volume to edge ratio than long, narrow (Brinker)
  - b. FWS (Callahan): At Poplar, don't design for mudflat, but do track presence because no one has the responsibility to maintain it as a mudflat
  - c. USACE (Leasure): design idea - double breakwater with material confined between - would need to be maintained with SLR, and receive periodic replenishment of confined material; would need to be in lower dynamic environment
  - d. FWS(Whitbeck): we should be cautious to develop design based on needing periodic material because Fishing Creek channel is not regularly maintained
- 6. Shorebirds - monitor only summer
- 7. Eastern narrow mouth toad – State listed as Endangered. Not observed at Barren recently

#### DNR

- 1. Don't see a need to do anything additional for waterfowl
- 2. Will be TOY and restrictions for working around colonial nesting waterbird rookery on southern end of island
- 3. Desire to see southern breakwater with backfilling on east side to provide benefits to nesting birds
  - a. Common tern and royal tern nesting (state endangered species due to habitat loss) occurred on sandspit of southern end of Barren in 1980s
  - b. Suggest creating a few (3) small islands (2-3 acres) amongst segmented breakwaters. Could add visibility and safety to breakwaters
  - c. Mudflats/intertidal zone on east side of breakwaters could be valuable habitat for shorebird migrations
- 4. Opossum Island is gone, but could restore it fairly easily - it is in a low energy environment

#### MDE

- 1. Borings has generated public interest
- 2. Important to document existing water quality and track this overtime - this will promote/be needed for SAV
- 3. CWA - through State - authorization process and public hearing (needs to be advertised for at least 45 days) for construction plans; plan for timeline for WQC

4. MPA - will be leading public outreach - first meeting planned for spring
5. Wetland delineation - demarcate high vs low wetlands and identify impact to any existing habitat by type
6. Will want to see that design USACE presents has the least impacts and the work has been done to avoid and minimize impacts; provide input on modeling done and why certain decisions for design were made

#### SAV

1. FWS - avoid, minimize, and mitigate will apply; must demonstrate the impact we have is unavoidable
  - a. There will be a regulatory mitigation process for loss of SAV changed to wetlands
  - b. Priority would be island over SAV
  - c. Need island to maintain SAV habitat
  - d. SAV came in between island remnants after breakwater was built in 2009/2010
  - e. Clammers have had negative impact on SAV in Poplar Harbor
2. NMFS - EFH perspective - SAV is priority/HAPC, but not saying it is against reclaiming some of Barren Island
  - a. LOOK AT AVOIDANCE
  - b. Can we adjust the design to avoid filling gap? Is the gap sustainable over the long-term?
3. Survey discussion
  - a. FWS- qualitative surveys in spring and summer - a limited number of points to document species
  - b. NMFS – may want to focus surveys in area where design overlaps with where SAV has moved in enable quantification of potential impacts. For most projects they are fine with using a 5 year composite density of VIMS data.
  - c. MDE - recognize that we really only have one year of survey and how that could be factored in considering we have 5 year composite; also think about wanting to know the extent in non-impact area to document increase
  - d. USACE - consider focusing on quiescent areas which could be identified by ERDC modeling
  - e. Always realize that conditions are going to change from what we have considered during plans

#### High vs Low marsh

1. NMFS – wetlands valuable to resources of concern need to be within potential fish habitat range
2. FWS – target an elevation range at the highest of the local tide range to maximize sustainability with SLR of tidal marsh
3. High/Low Marsh ratios will be revisited but unclear of extent they can be changed

#### SUMMARY OF SURVEYS IDENTIFIED TO BE UNDERTAKEN:

1. Water quality – T, salinity, pH, etc. (as before)
2. Benthic species – clams, oysters, blue crab, horseshoe crab, macroinvertebrates/benthic community
3. Sediment characterization (covered by soils surveyed being scoped)

4. Plankton – phytoplankton and zooplankton
5. Fish – sample all four seasons - bottom trawling, beach seine, gillnetting, pop net
6. Avian
  - a. Shorebirds (only summer); wading birds – spring quantitative survey
  - b. Not needed - Waterfowl as current survey data available; song birds or raptors)
7. Terrestrial – predatory mammals
  - a. Vegetative communities (will develop habitat map from aerial data and FWS transects),
  - b. Not needed - invertebrates, insects (butterflies), amphibians, reptiles, non-predatory mammals
8. Wetlands – wetland delineations
9. SAV
  - a. spring and summer to ID species; use 5 years of VIMS survey data to characterize extent
  - b. Areas to consider for focus of surveys
    - i. areas of potential habitat conversion (shallow water to wetland) along/between island remnants
    - ii. areas bordering existing SAV beds to demonstrate positive impact/expansion of beds, and/or
    - iii. areas identify as quiescent by ERDC modeling

#### ACTION ITEMS:

1. USACE – reach out to NCBO to identify whether there is current fish and benthics data available
2. Coordination letters to agencies from USACE
3. USFWS needs a letter addressed to the refuge
4. USACE - draft a scope for FWS for Fish and Wildlife Coordination Act activities
5. USACE - coordinate with NMFS to identify relevant EFH species
6. USACE PL/Env - discuss designs for modeling with ERDC
7. Define NEPA schedule
8. Define agency coordination check-points
9. Input for modelers
10. MES – review feasibility phase records for scopes of aquatic surveys

#### FUTURE DISCUSSION ITEMS:

1. Low/marsh ratio
2. Identify reference marshes



**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

22 June 2020; 1:00 - 2:00 p.m.

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1. Introductions
2. Schedule Update
3. Activities Completed since Kick-off Meeting
  - a. Surveys
  - b. NEPA and Agency coordination
  - c. Biological Surveys
4. Next Steps
5. Wrap-up and Action Items



# MID-CHESAPEAKE BAY ISLANDS ECOSYSTEM RESTORATION PROJECT

## DESIGN PHASE AGENCY COORDINATION UPDATE

Angie Sowers

USACE - Planning

22 June 2020

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# AGENDA

- Schedule
- Activities Completed Since Kick-off Meeting
  - Surveys
  - NEPA and Agency Coordination
  - Biological Surveys
- Next Steps
- Action Items

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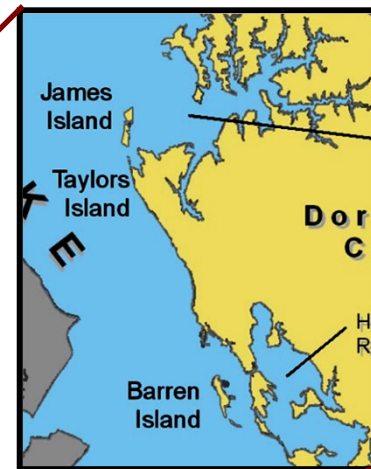
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# Mid-Chesapeake Bay Island Ecosystem Restoration Project Location



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# SCHEDULE

## *Barren*

- Development of survey and sampling scopes – winter 2019/2020
- Award AE contract – summer 2020
- ERDC modeling – summer 2020
- 35% Design provided by AE – October 2020
- 65% Design provided by AE – March 2021
- Design Document Report (DDR) – summer 2021
- NEPA: EA Public Review – July 2021
- Signed FONSI – November 2021
- Request CG appropriations for FY22
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## *James*

- Development of survey and sampling scopes – winter 2019/2020
- ERDC modeling and in-house design – spring 2020 through winter 2023
- NEPA – spring 2021 to summer 2022
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# EFFORTS SINCE KICK-OFF MEETING

- Survey work
  - Barren and James Hydrographic survey – complete
    - Bathymetry acquired
    - Establish monuments
  - Barren Geotech surveys – results due July
    - sediment geotechnical characterization and sediment quality analyses
  - Aerial photography and mapping – complete
    - terrain type and habitat characterization
    - Lidar and aerial photogrammetry acquired
- NEPA
  - Development of scope and award of contract to Anchor QEA for biological surveys
  - Development of Fish and Wildlife Coordination Act scope of work with FWS for Planning Aid Report and surveys
  - Public Notice and Agency Coordination Letters

# BIOLOGICAL SURVEYS

Survey Type	James Island					Barren Island			
	Spring 2020	Summer 2020	Fall 2020	Winter 2020 - 2021		Spring 2020	Summer 2020	Fall 2020	Winter 2020 - 2021
Water Quality/Nutrient									
Benthic Invertebrate									
Plankton	removed upon further consultation with NFMS								
SAV	2021					2021			
<i>Fisheries</i>									
Bottom Trawl									
Beach Seine*									
Gillnet									
Pop Net			Sept					Sept	
Soft-shell and Razor Clam									
Pound Net Telephone Survey***									
Commercial Harvest Data Collection									
Crab Pot Survey^		delayed					delayed		
<i>Avian</i>									
<del>Shorebirds</del>	transitioned to SHARP surveys and point counts					transitioned to SHARP surveys and point counts			
<del>Wading Birds</del>									
Avian surveys - point counts									
Avian surveys - wetlands - SHARP	2021	2021				2021	2021		
<i>Mammals</i>									
Predatory mammals									

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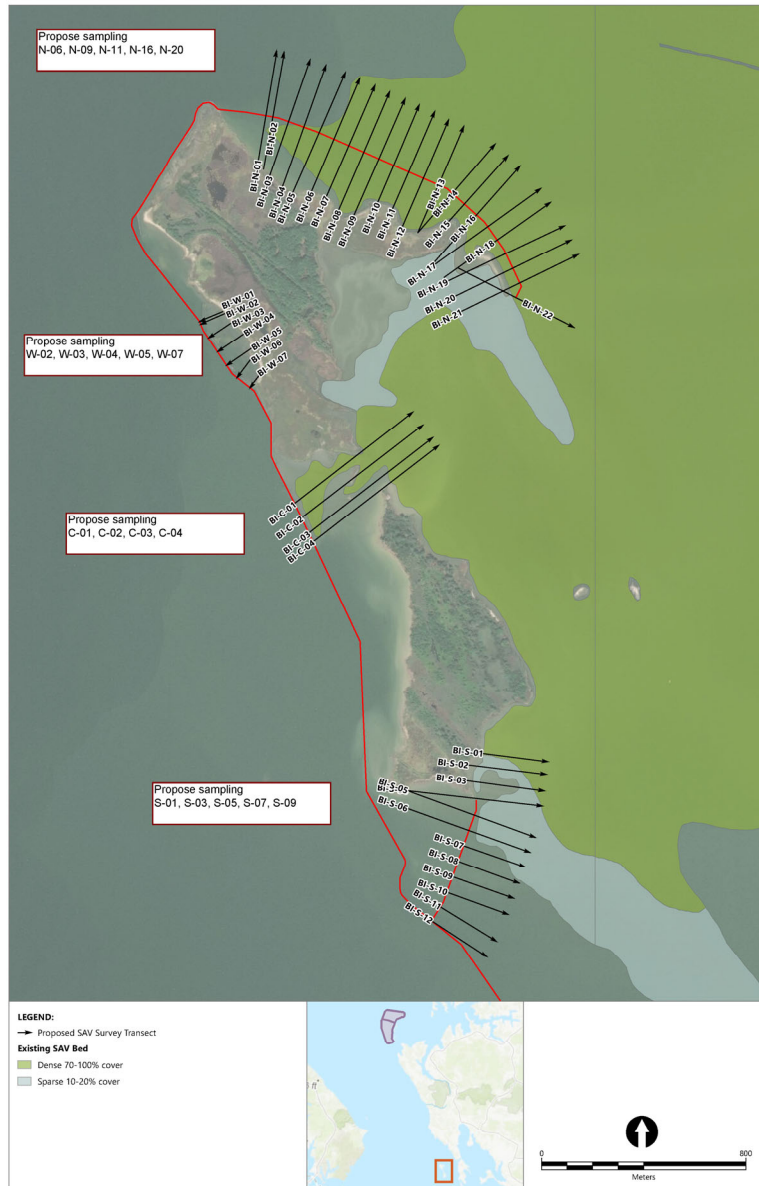
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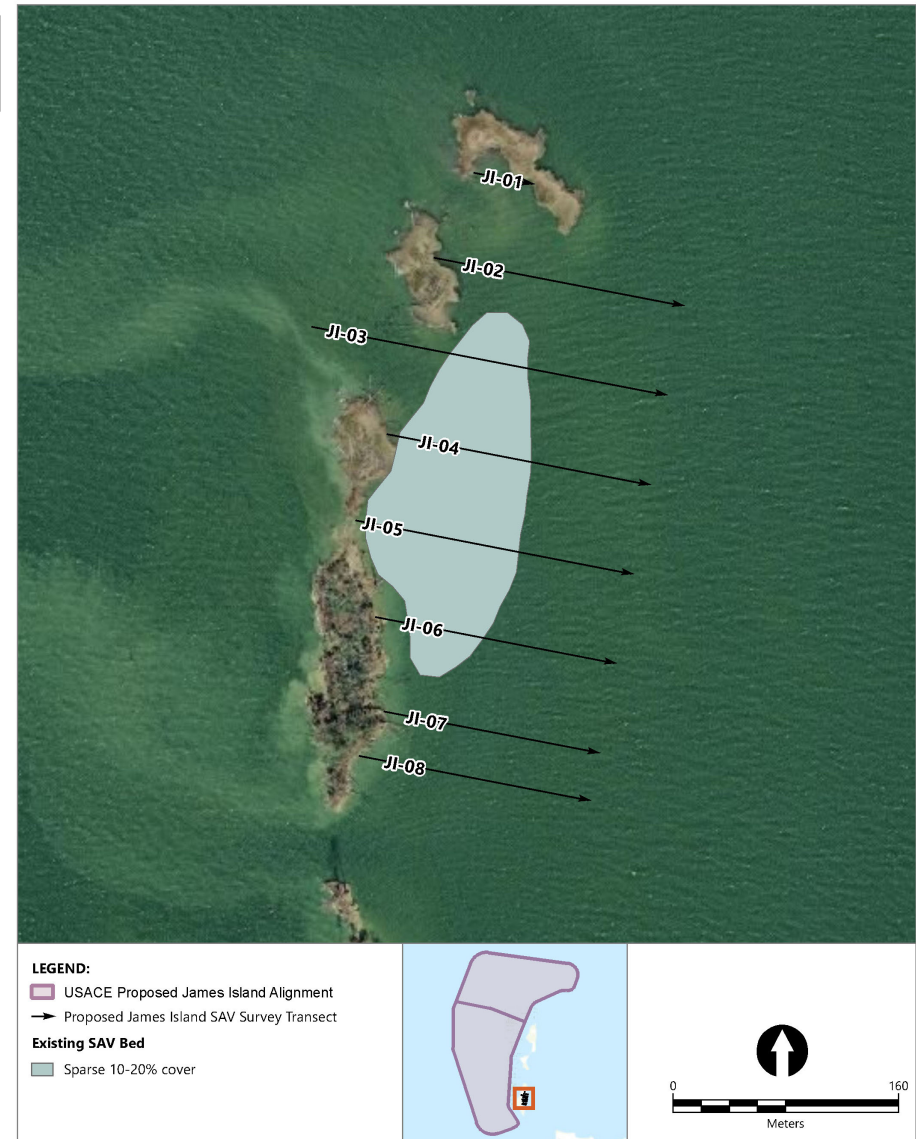


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ANCHOR QEA



## NEXT STEPS

- Initiate biological surveys
- Publish/distribute Public Notice and Agency Coordination Letters
- Identify Agency check-points
- Identify reference marshes
- Develop success metrics for project
- Develop Table of Contents and background information for EA
- ERDC modeling of proposed plan and considerations for southern breakwater





## AGENCY CHECK-POINTS – BARREN ISLAND COMPONENT

1. Summer 2020 – Initial ERDC modeling for Barren Design Meeting
2. November 2020 – Barren 35% Design Review Meeting
3. December 2020 – Draft PAR provided by FWS
4. March 2021 – Barren 65% Design Review Meeting
5. Spring 2021 – Complete draft EFH assessment, ESA assessment, 404(b)(1) Analysis, and Critical Areas Commission response; provide to appropriate agencies
6. July 2021 – Public Review of EA



**Mid-Chesapeake Bay Island Ecosystem Restoration Project**  
**Design Phase**  
**Agency Coordination Update Meeting**  
**Minutes**

22 June 2020; 1:00 - 2:00 p.m.

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**Participants:**

USACE – Angie Sowers, Ray Tracy  
MPA – Dave Bibo, Amanda Peñafiel, Holly Miller  
MES – Cassandra Carr, Maura Morris  
MDE – Heather Hepburn  
DNR – Becky Golden, Roland Limpert, John Moulis  
FWS – Chris Guy, Matt Whitbeck  
NMFS – Brian Hopper, Jonathon Watson  
Anchor – Karin Olsen

**Agenda:**

1. Introductions
2. Schedule Update
3. Activities Completed since Kick-off Meeting
  - a. Surveys
  - b. NEPA and Agency coordination
  - c. Biological Surveys
4. Next Steps
5. Wrap-up and Action Items

USACE (Sowers) provided a project update including schedule, activities completed since January 22 meeting, and next steps. See slides for content.

MES (Morris) provided an update on the access channel for James Island and the overlap with a historic oyster bar. A meeting was held last week with DNR-Shellfish to discuss a possible path forward that would not result in relocating the access channel. The next step is for DNR to speak to the watermen that have harvested oysters on that bar. Depending on the watermen's input, the team will discuss next steps and if any surveys are needed. If there is an impact to the oyster bar, shell could be captured and relocated to another oyster bar.

FWS (Whitbeck) asked if winter hunting that occurs in December and January on set days at Barren Island would interfere with any of the biological surveys. He will provide the dates to MES to coordinate efforts. It is expected that the surveys can be conducted without interfering with hunting days.

**Action Items:**

1. Resource agencies – Provide feedback about Barren Spring 2021 surveys – Are all desired given that the information will likely not be available for inclusion in the EA? The information can be used to understand baseline conditions. Provide any additional agency check-points to track.
2. Sowers will be in touch to set a meeting date once initial H&H modeling is completed by ERDC.



**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

24 September 2020; 10:00 - 11:30 a.m.

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Call-in information: <https://usace.webex.com/meet/angela.sowers>

Meeting number: 960 786 356

Call-in number: 1-877-336-1828

Access code: 4495502

Security code (if asked): 4321

1. Introductions
2. Project status/schedule update - USACE
3. Summer field surveys update and Fall sampling preview - MES/Anchor
4. Discussion of Barren Island design formulation - USACE
  - a. preview H&H modeling results and discuss how to evaluate for SAV habitat
5. Barren Island wetland design framework - USACE
6. Reference marsh identification - USACE
  - a. Please be prepared to discuss suggestions for sites to use as reference marshes
7. Next Steps
8. Wrap-up and Action Items

# MID-CHESAPEAKE BAY ISLANDS ECOSYSTEM RESTORATION PROJECT

## DESIGN PHASE AGENCY COORDINATION UPDATE

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USACE - Planning

24 September 2020

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# SCHEDULE

## *Barren*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- Award AE contract – summer 2020 – MOVED in-house
- ERDC modeling – summer 2020 – IN PROGRESS
- 35% Design provided by AE – ~~October 2020~~ April 2021
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- NEPA: EA Public Review – ~~July 2021~~ December 2021
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## *James*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- ERDC modeling and in-house design – 2020 through winter 2023
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# PROGRESS SINCE JUNE MEETING

## ➤ Engineering

- ERDC H&H modeling of 5 potential southern breakwater alignments
- Updating/aligning schedule
- Soil sampling and analysis

## ➤ NEPA

- Development of updated sampling plan
- Summer biological surveys
- Issued Public Notice for EA and agency coordination letters
- Wetland delineation at Barren

# BIOLOGICAL SURVEYS – MES/ANCHOR UPDATE

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	Spring 2020	Summer 2020	Fall 2020	Winter 2020 - 2021		Spring 2020	Summer 2020	Fall 2020	Winter 2020 - 2021
Water Quality/Nutrient									
Benthic Invertebrate									
Plankton	removed upon further consultation with NFMS								
SAV	2021					2021			
<i>Fisheries</i>									
Bottom Trawl									
Beach Seine*									
Gillnet									
Pop Net			Sept					Sept	
Soft-shell and Razor Clam									
Pound Net Telephone Survey***									
Commercial Harvest Data Collection									
Crab Pot Survey^		delayed					delayed		
<i>Avian</i>									
<del>Shorebirds</del>	transitioned to SHARP surveys and point counts					transitioned to SHARP surveys and point counts			
<del>Wading Birds</del>									
Avian surveys - point counts									
Avian surveys - wetlands - SHARP	2021	2021				2021	2021		
<i>Mammals</i>									
Predatory mammals									

File Name



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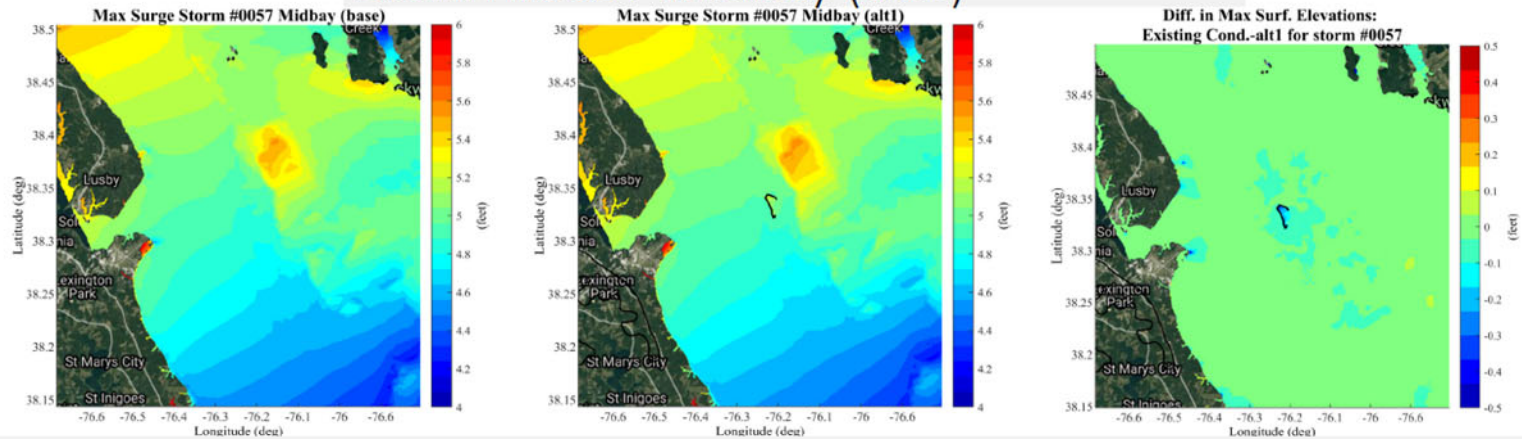
## ERDC H&H MODELING FOR BARREN ISLAND DESIGN

- CSTORM Preliminary Results Water Levels and Wave Heights
  - ADCIRC and STWAVE
  - Incorporate current bathymetry
  - Finer resolution –15 to 20 meter around structures (ADCIRC), and 70 m throughout Bay and 17.5 m around islands (STWAVE)
- Summary of Modeling Performed To-Date
  - Storms - Selected 100 Synthetic Tropical Cyclones from the 1060 NACCS storm suite
  - Subsample those 100 down to 25 storms for Barren Island Screening of Alternatives
  - Modeling completed without tides; forced by winds and river flow
- Created 5 with project configurations using the newly updated mesh/grids
  - Ran 100 storms on the updated “Base” configuration
  - Ran 25 storms on each of the 5 “with-project” configurations

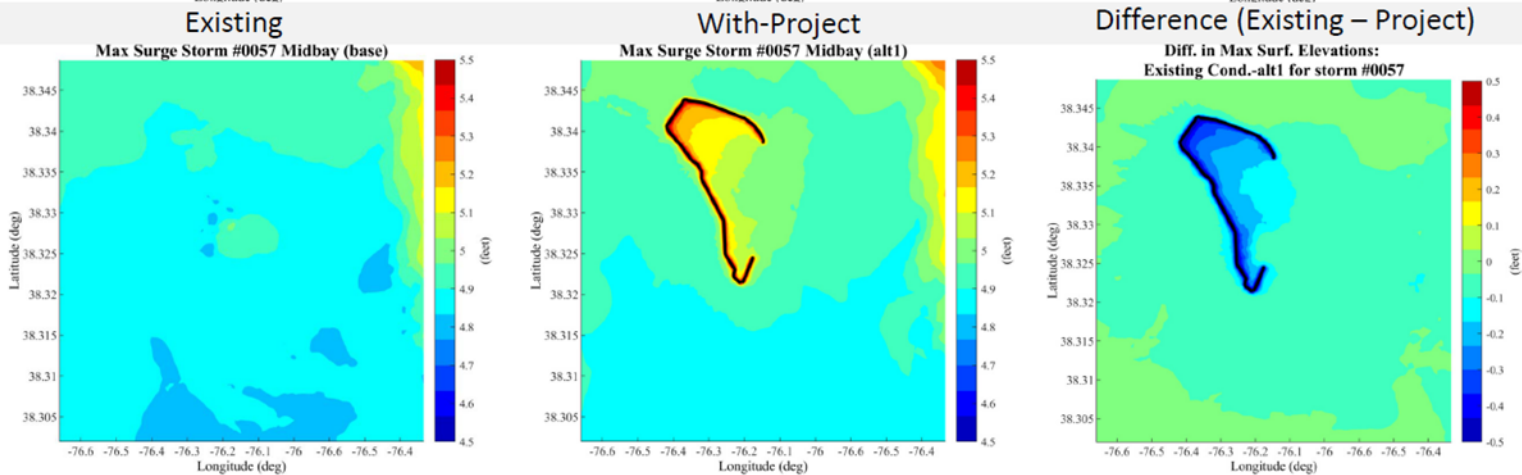
# MAXIMUM WATER SURFACE ELEVATION – ALT 1

## Storm #0057 Midbay (alt1)

Larger View



Close-up View



Prepared:  
8/31/2020



US Army Corps  
of Engineers.

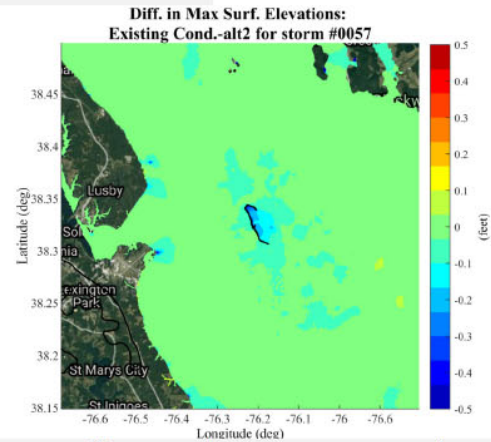
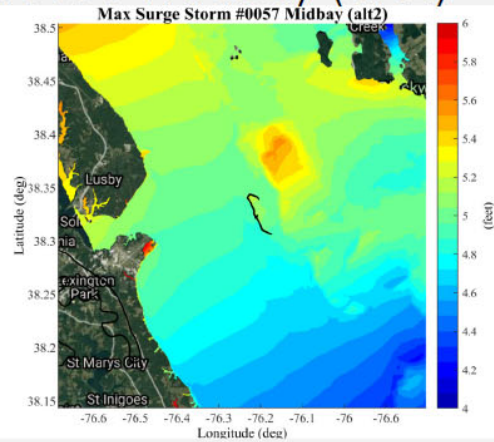
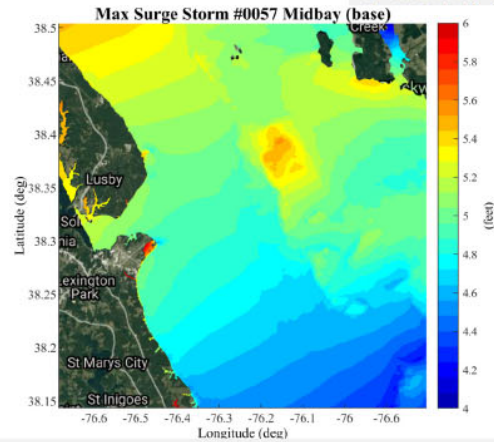


File Name

# MAXIMUM WATER SURFACE ELEVATION – ALT 2

## Storm #0057 Midbay (alt2)

Larger View

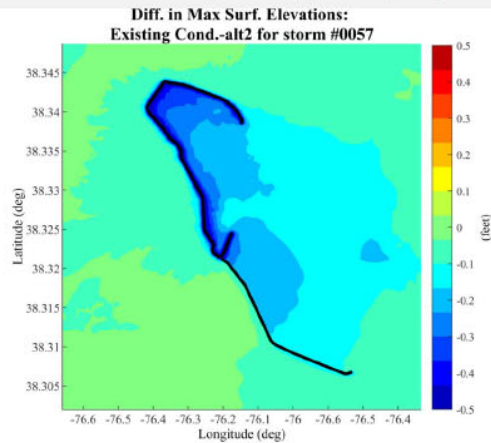
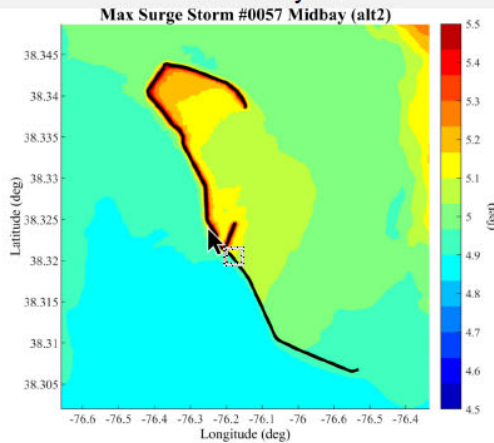
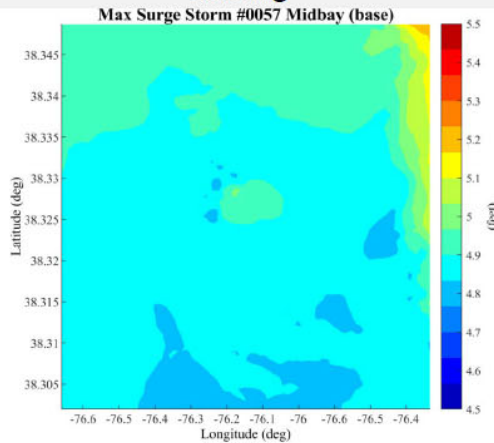


Existing

With-Project

Difference (Existing – Project)

Close-up View



Prepared:  
8/31/2020

File Name



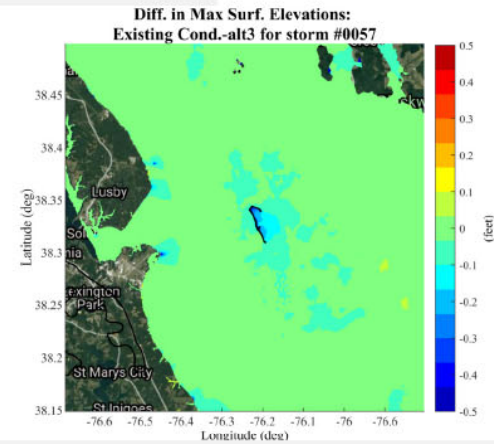
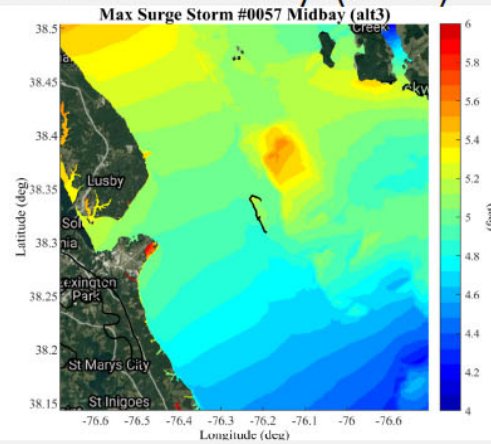
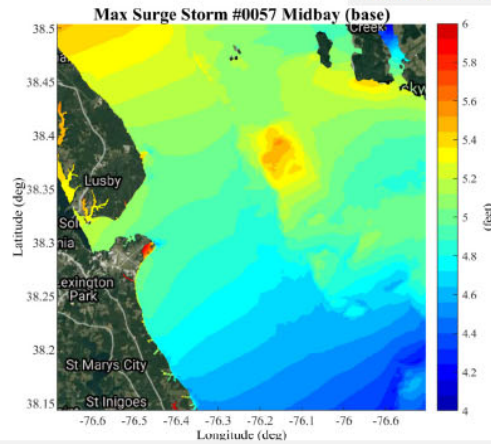
**US Army Corps  
of Engineers.**



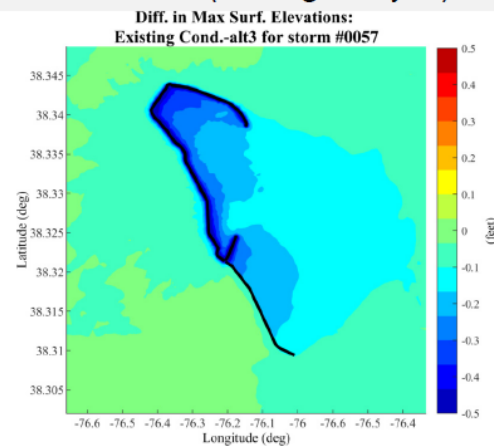
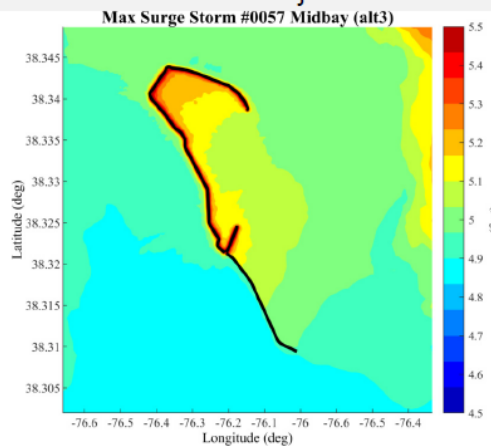
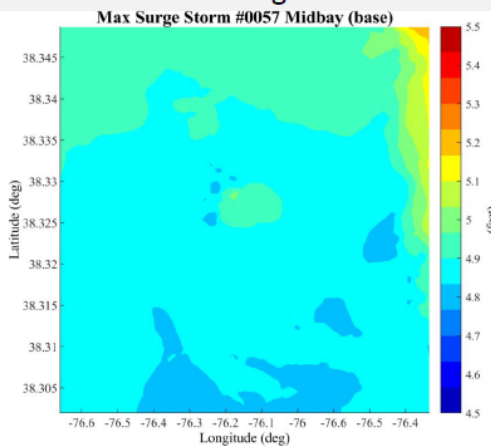
# MAXIMUM WATER SURFACE ELEVATION – ALT 3

## Storm #0057 Midbay (alt3)

Larger View



Close-up View



Prepared:  
8/31/2020



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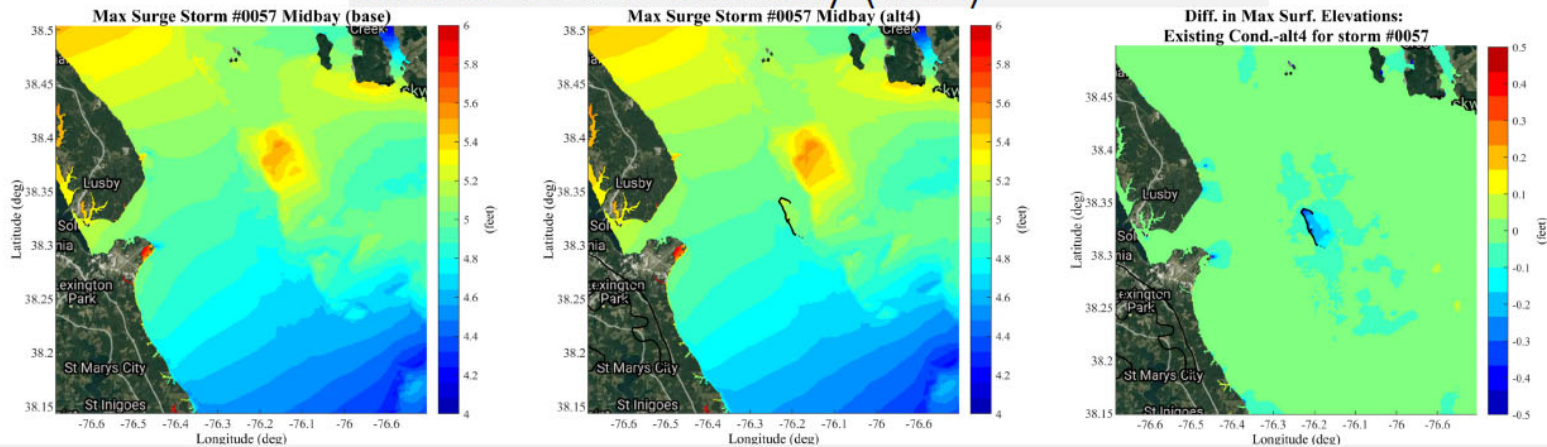
File Name



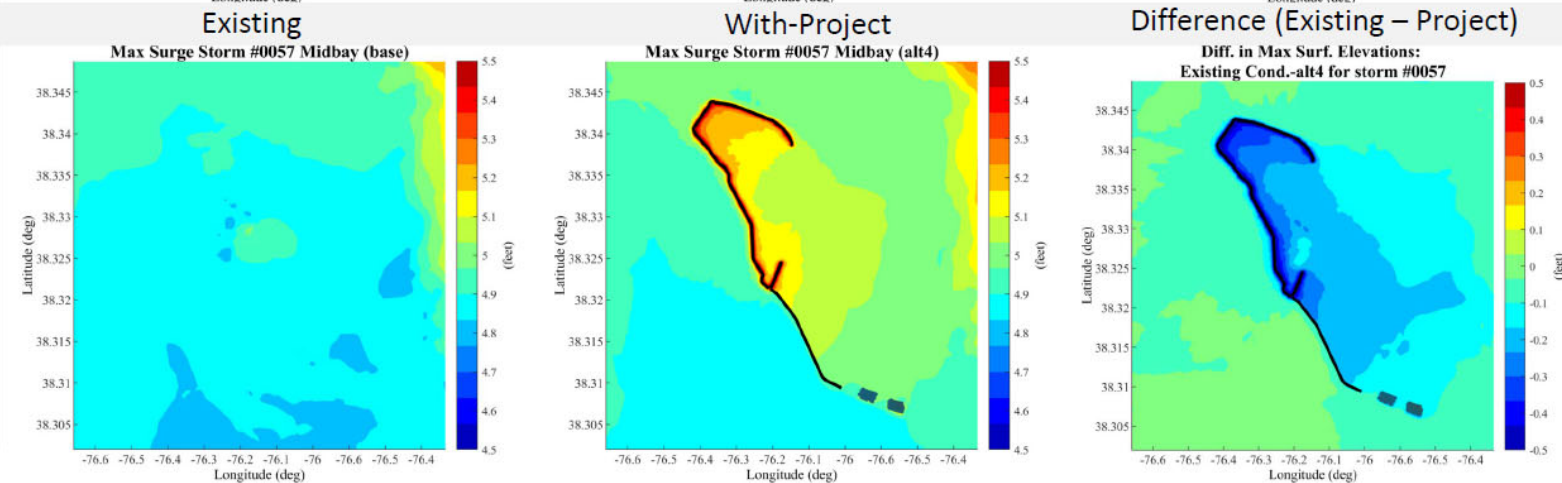
# MAXIMUM WATER SURFACE ELEVATION – ALT 4

## Storm #0057 Midbay (alt4)

Larger View



Close-up View



Prepared:  
8/31/2020



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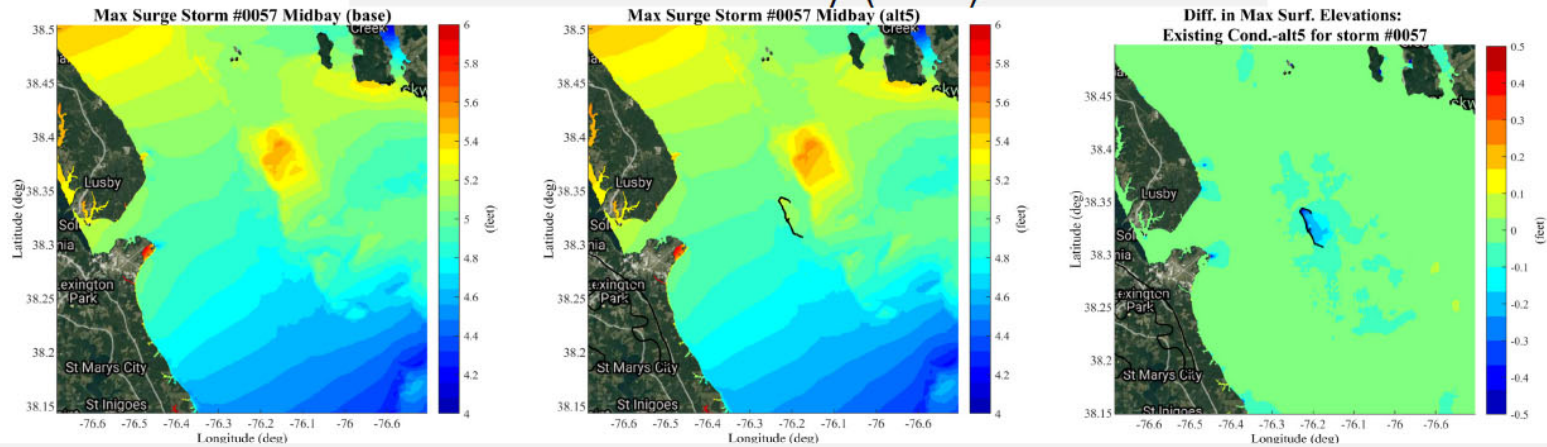


File Name

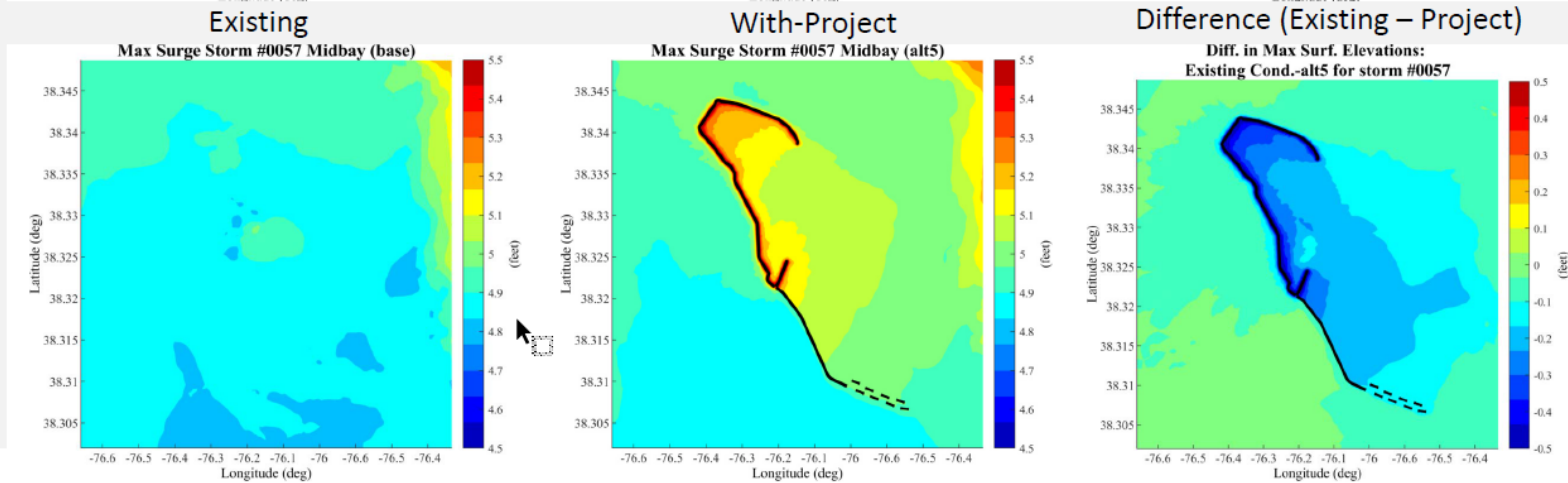
# MAXIMUM WATER SURFACE ELEVATION – ALT 5

## Storm #0057 Midbay (alt5)

Larger View



Close-up View



Prepared:  
8/31/2020



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of Engineers.

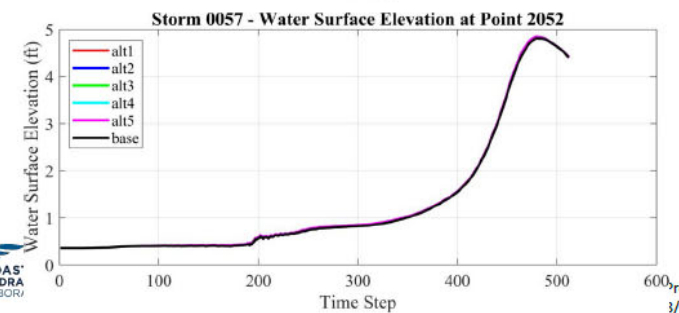
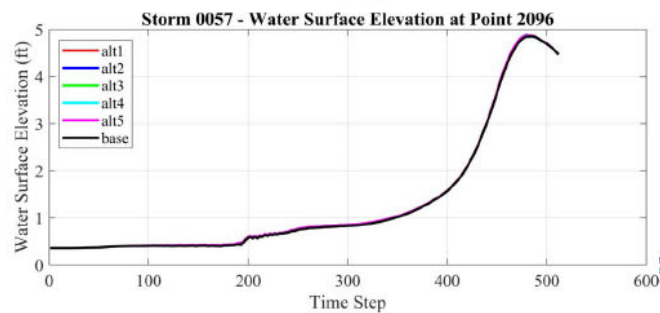
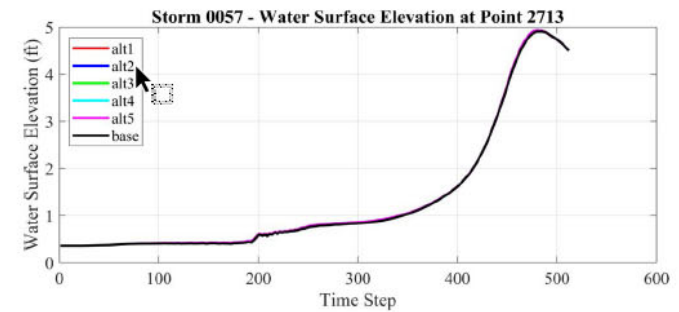
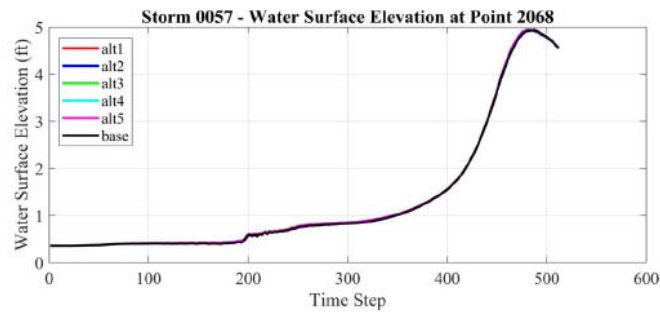
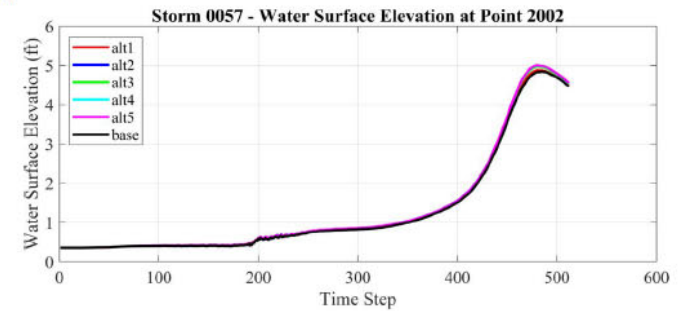
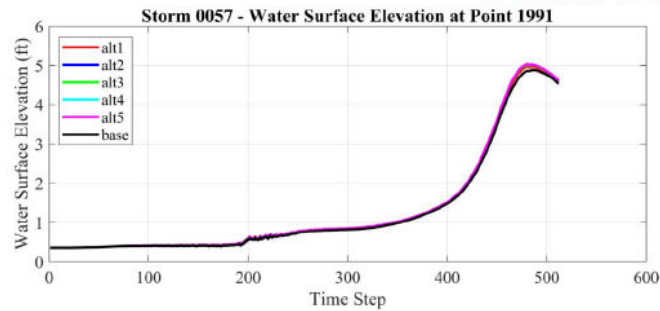


File Name

# WATER SURFACE ELEVATION TIME SERIES



## Storm 0057



COAS  
HYDRA  
LABOR

Prepared:  
3/31/2020

File Name



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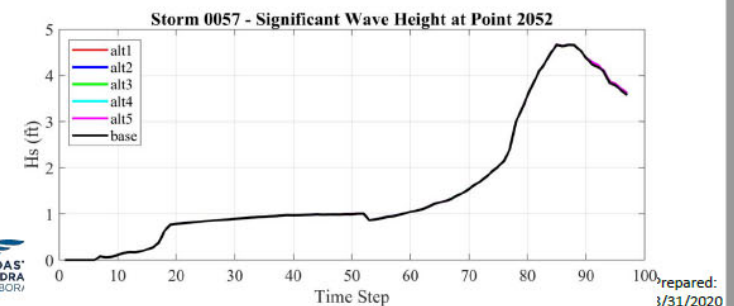
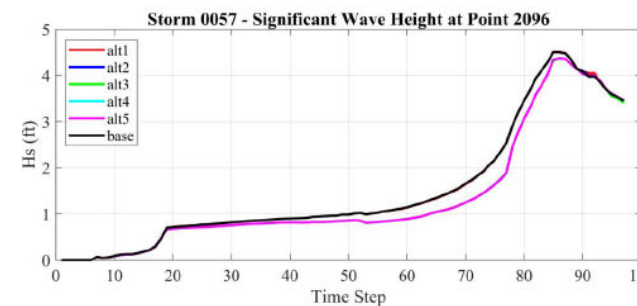
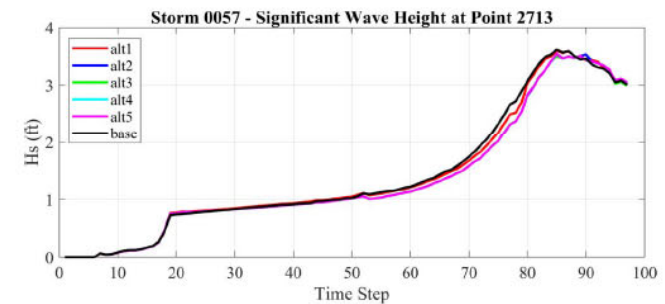
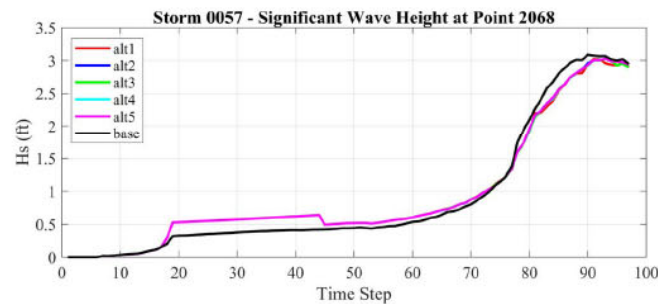
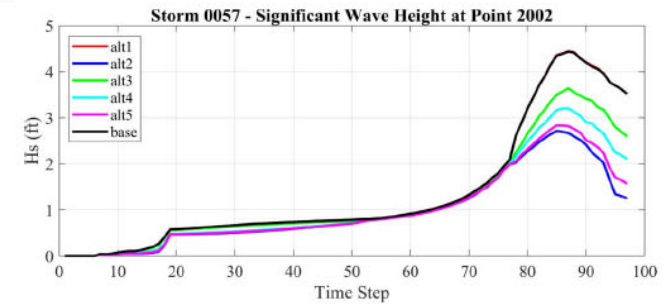
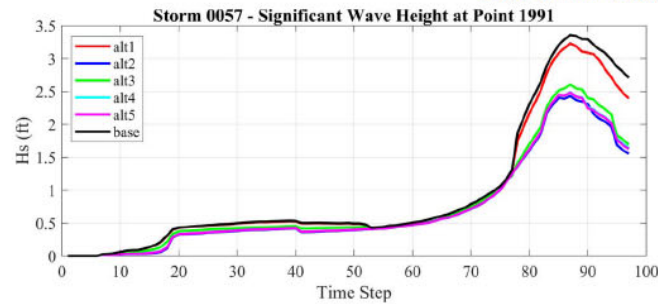




# MAXIMUM SIGNIFICANT WAVE HEIGHT



## Storm 0057



COAS  
HYDRA  
LABOR

Prepared:  
1/31/2020

File Name



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## PRELIMINARY ALTERNATIVES EVALUATION

- Next step is to evaluate model results for current velocities
  - Model velocities in project area under non-storm conditions for with and without project conditions
  - Identify maximum and mean velocity during storms with and without project (5 alternatives)
  - Compare – targeting alternatives which replicate the current conditions that promote SAV habitat (based on relatively consistence presence of SAV east of Barren prior to wet years of 2019 and 2020)
    - There is some information available on suitable conditions for *Ruppia maritime* and *Zostera marina* in literature
- Initial results suggest that full southern breakwater extent may not be warranted
  - Due to poor foundation, material would need to be removed and fill used from a new borrow area to construct lower half of southern breakwater
  - Footprint of full southern breakwater does not mimic historic shoreline
  - Full evaluation needs to be completed, but initial review of H&H results suggest full breakwater is not necessary

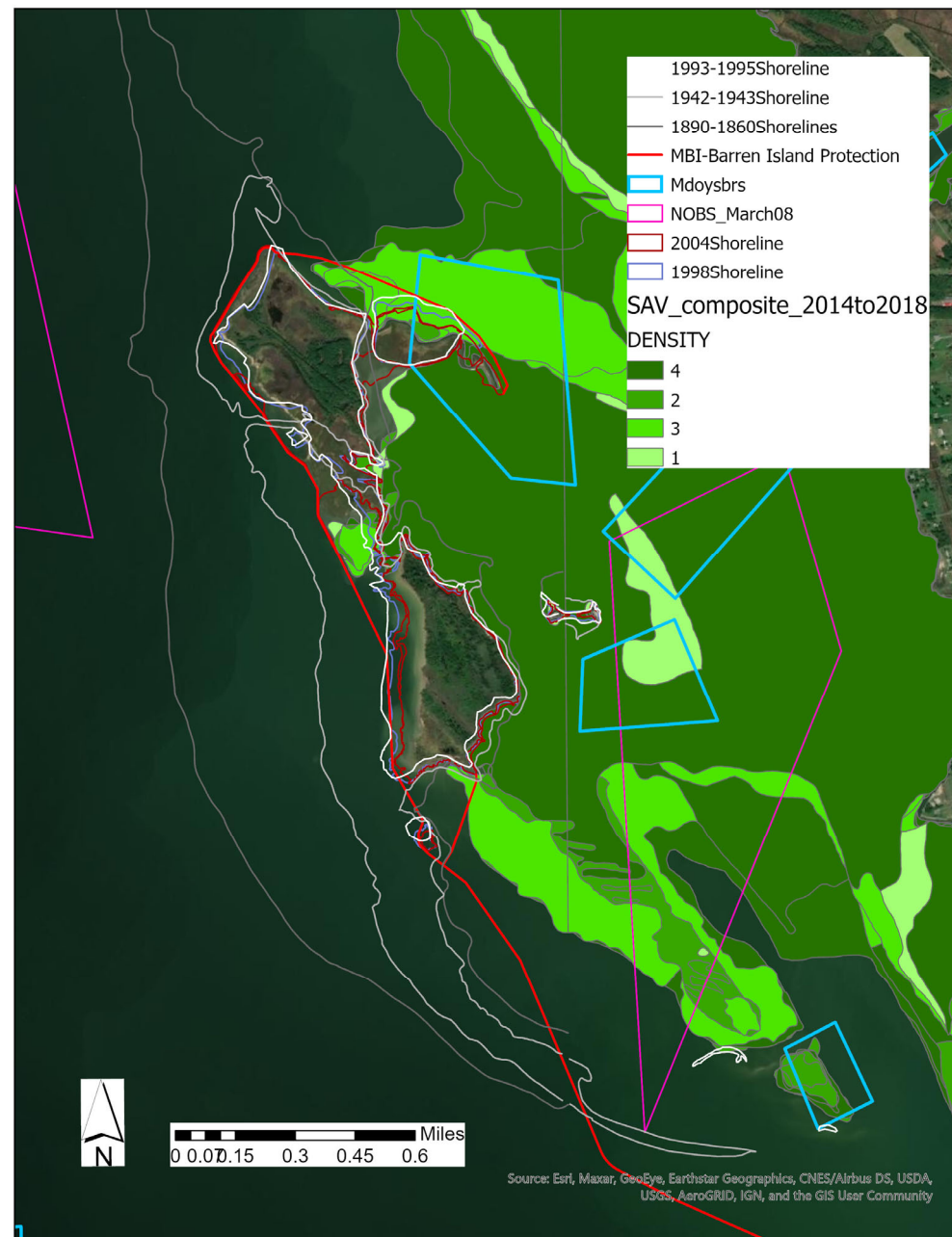


# ADDITIONAL NEPA CONSIDERATIONS

Oysters:

Great Bay (bar #4):  
10 bushels  
(November 2019)

SAMCUC(1



## Slide 16

---

**SAMCUC(1** Sowers, Angela M CIV USARMY CENAB (USA), 9/24/2020

# WETLAND DESIGN FRAMEWORK

*Step 1: Identify reference marsh(es) and determine the following conditions to help guide design:*

1. tidal range (MLLW, MLW, MHHW)
2. distribution of high to low marsh (including high marsh:low marsh line and high marsh:upland line)
3. low marsh to aquatic breakline
4. vegetative cover

*Step 2: Using reference marsh conditions (Step #1) and lessons learned from Poplar, identify:*

1. project goals/success metrics as a target and an acceptable range,
2. assumptions and conditions needed to reach these goals,
3. risks to achieve metrics
4. factors affecting success and risks

*Step 3: PL sketch out design with ENG, review with agencies.*

*Step 4: Determine dredged material inflow plan*

*Step 5: Develop design plan*

*Step 6: Develop grading plan*

File Name



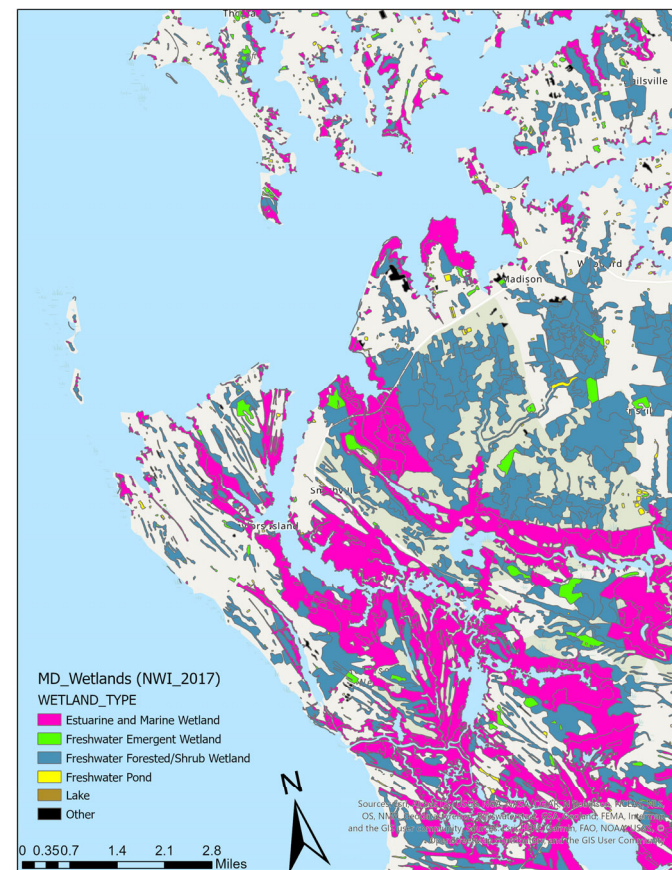
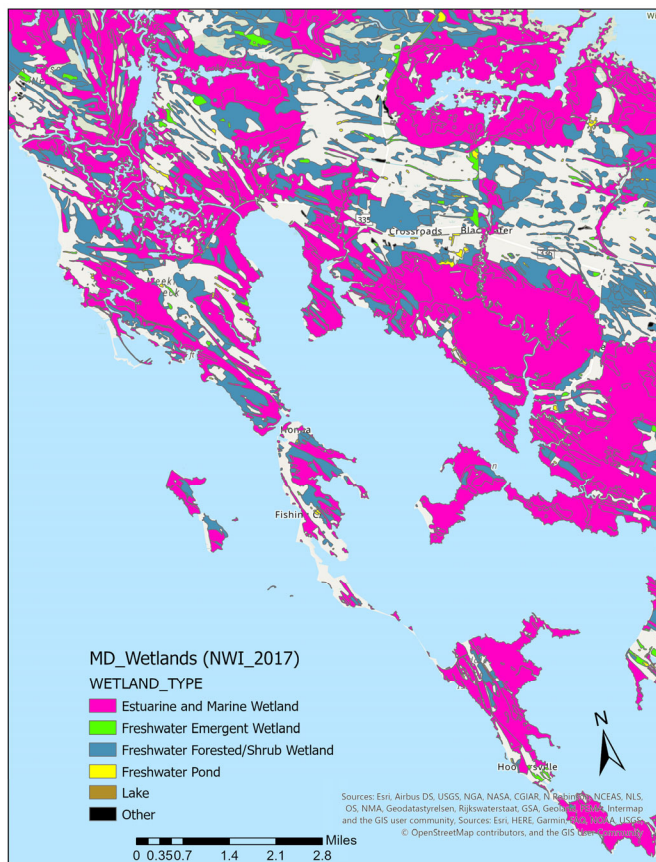
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# REFERENCE MARSH IDENTIFICATION

- Discussing site locations with FWS
- We are open to suggestions or others being involved



File Name

or Engineers.





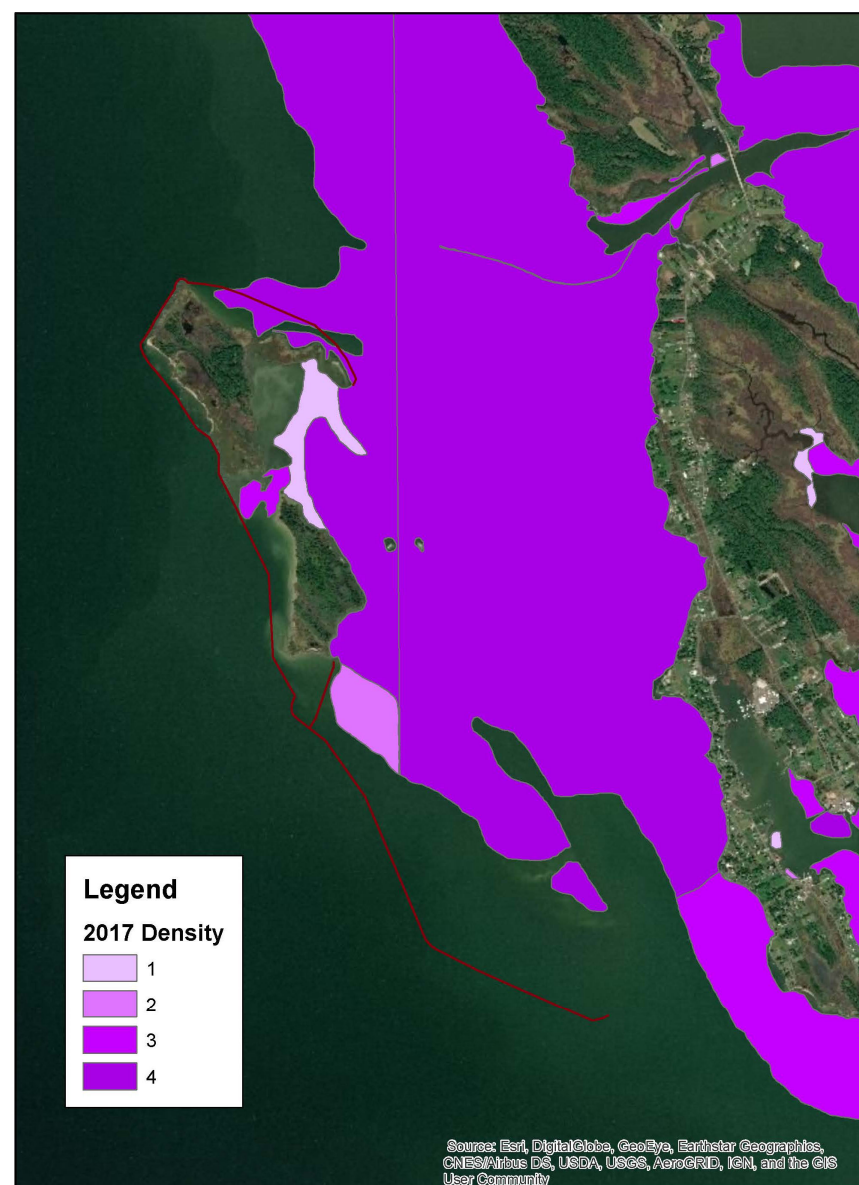
## NEXT STEPS

- Further evaluate H&H modeling results
- Consider SAV habitat requirements with modeling results
- Refine southern breakwater design
- Identify reference marshes and collect relevant data (Step 1 of Wetland Design Framework)
- Develop success metrics (Step 2)
- Begin to draft EA



## AGENCY CHECK-POINTS – BARREN ISLAND COMPONENT

1. Summer 2020 – Initial ERDC modeling for Barren Design Meeting
2. December 2020 – Draft PAR provided by FWS
3. April 2021 – Barren 35% Design Review Meeting
4. October 2021 – Barren 65% Design Review Meeting
5. Summer 2021 – Complete draft EFH assessment, ESA assessment, 404(b)(1) Analysis, and Critical Areas Commission response; provide to appropriate agencies
6. December 2021 – Public Review of EA



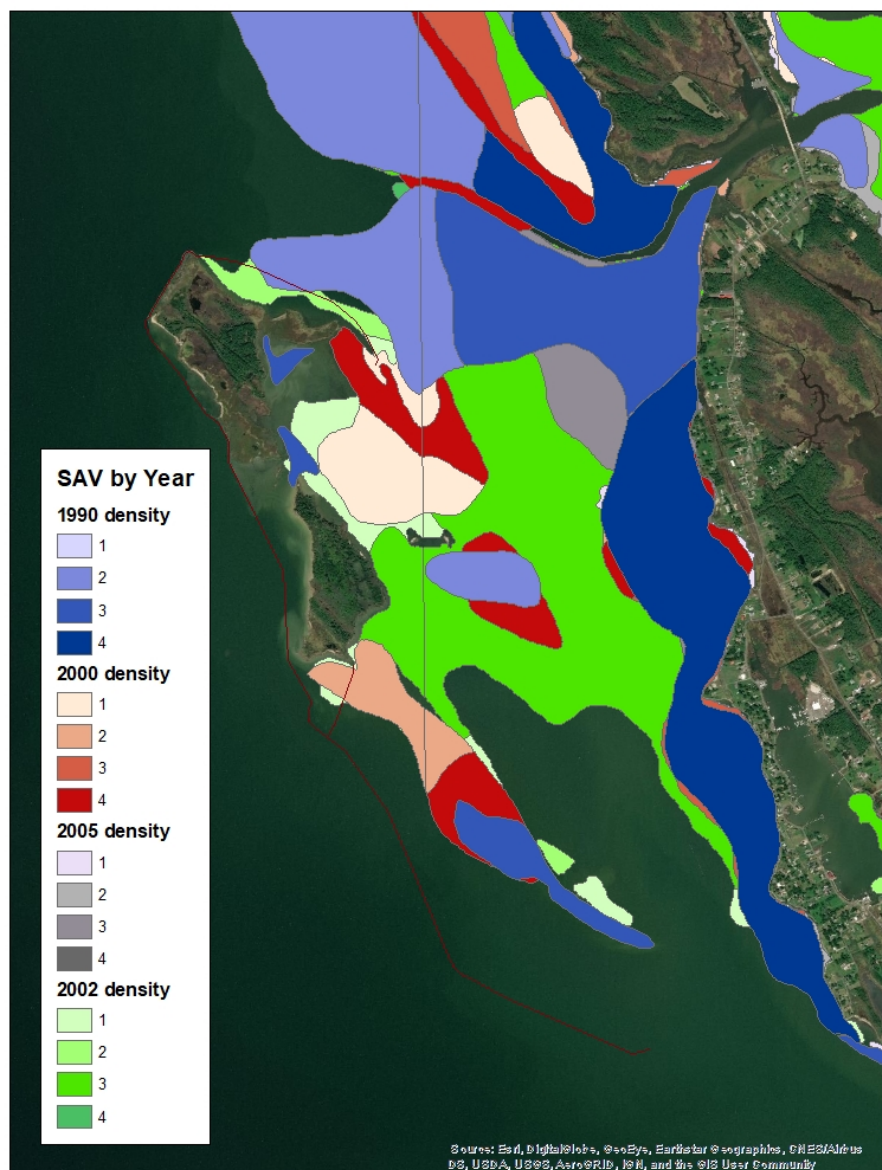
**SAV**  
File Name



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# Mid-Bay Environmental Surveys – Summer 2020 Summary

Karin Olsen, PG  
September 24, 2020

# Summer 2020 Sampling Elements

- Benthic and Water Quality
  - Total of 11 locations; 10 monitoring and 1 reference
  - 1 location in the access channel
  - For benthics, sediment sampling conducted
- Avian
  - Identify 4 habitat types: forest, wetland, beach, SAV
  - Asked the crew to assess habitats based on existing conditions
- Crab Pots
- Fisheries
  - Co-located the seine, pop net, and gill nets
  - 4 locations at James and 5 locations at Barren



# Target Locations – General Approach

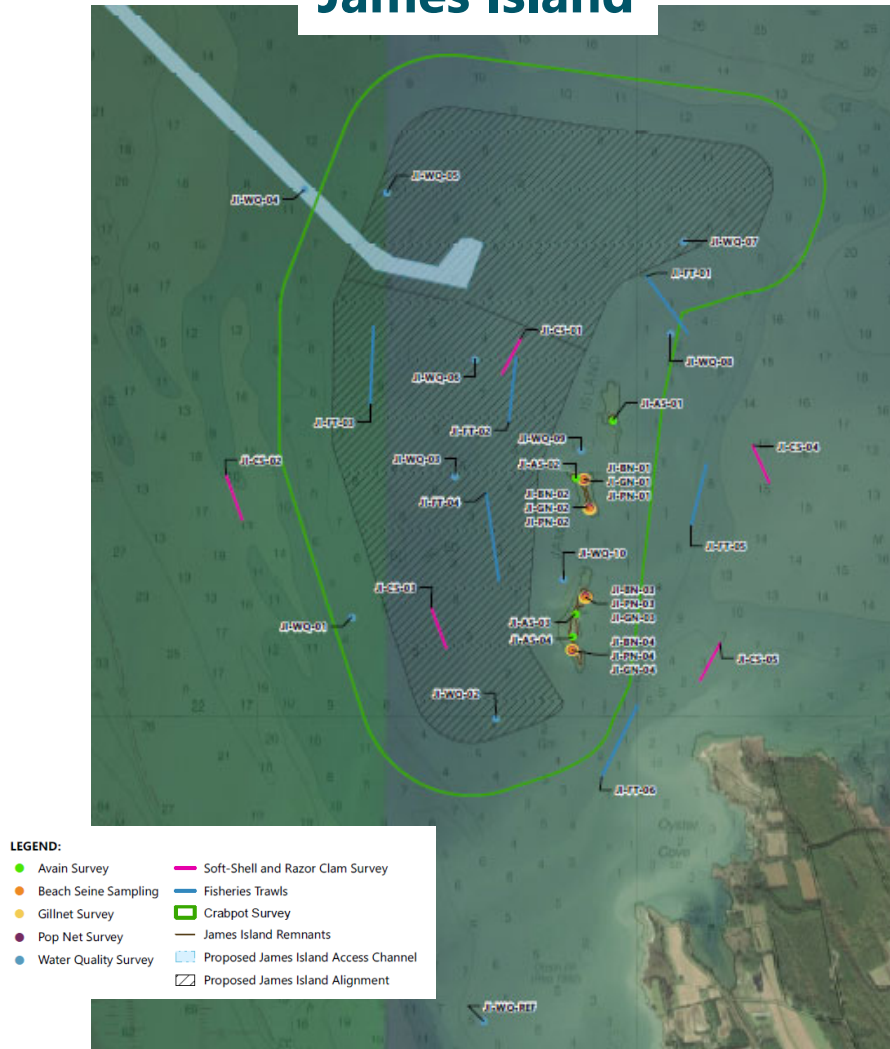
- Program consistent with previous efforts
  - Some locations were moved based on existing conditions, notably the decreased island remnants at James
- All field teams were instructed to assess conditions and revise sampling coordinates if needed
  - Prioritize locations resulting in valid data
  - Viability as monitoring locations
- Successfully sampled the majority of the target locations



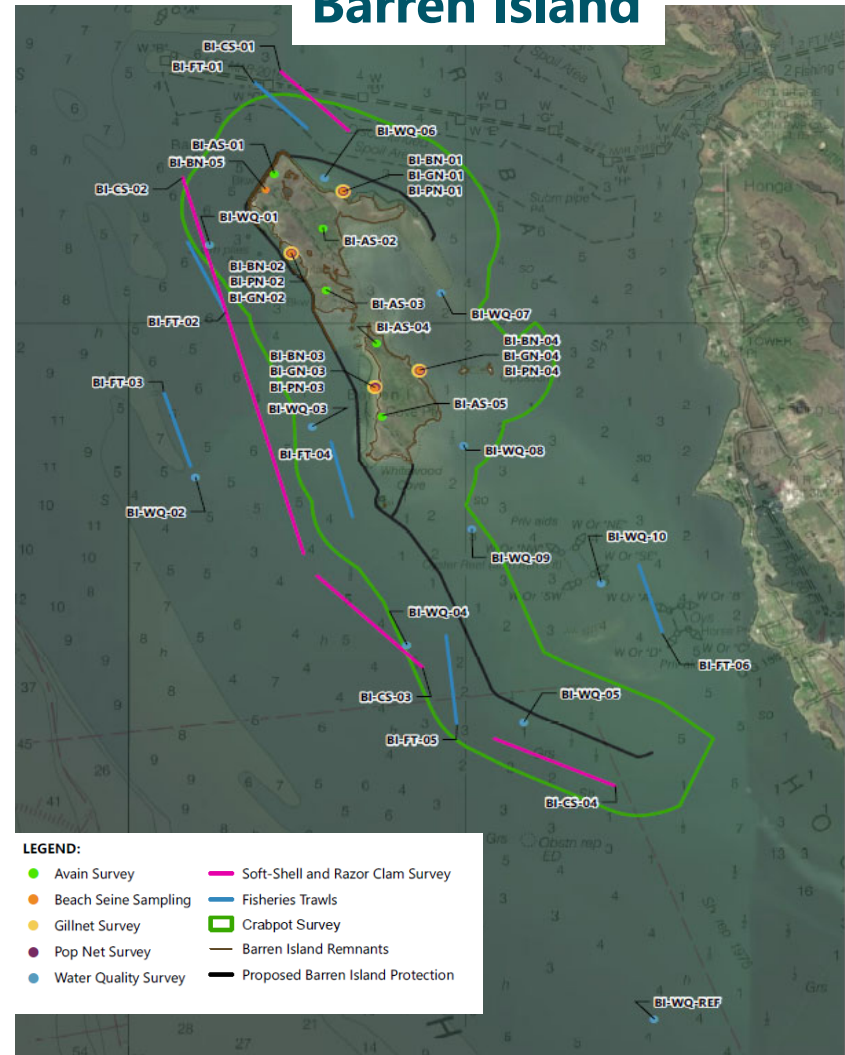


# Target Locations

## James Island



## Barren Island



# Benthic Community and Water Quality

- All target locations successfully sampled; no access or sampling challenges
- Sediment data for habitat classification collected and submitted for analysis
- Water quality samples submitted to CBL for nutrient analysis
- Still waiting on analytical results
- Upcoming Sampling
  - Fall sampling: mid-October
  - No winter sampling
  - Spring sampling in 2021



# Avian Surveys – James Island

- No terrestrial habitat left – survey included shoreline, mudflat, salt marsh, and open water
- Target (previous) locations no longer exist
  - Locations were selected to minimize the amount of viewscape overlap
- Because of lack of habitat diversity, the species list was mostly water birds and shorebirds.
  - Six species of sandpiper/plover - sanderling, spotted sandpiper, semipalmated sandpiper, least sandpiper, semipalmated plover, and ruddy turnstone
  - Gulls, terns, pelicans, and cormorants
  - Fish-eating raptors (osprey and eagle)





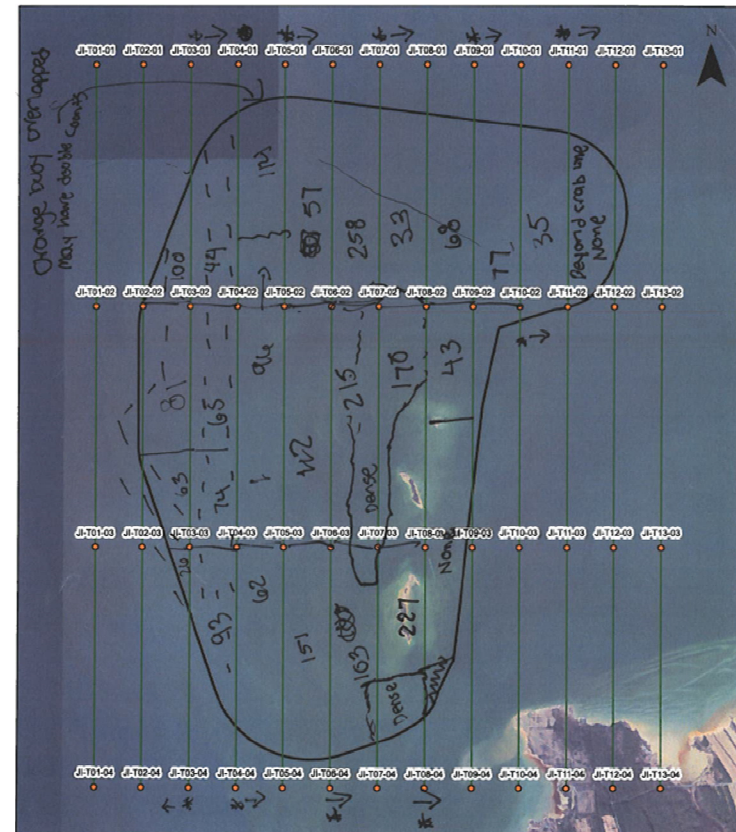
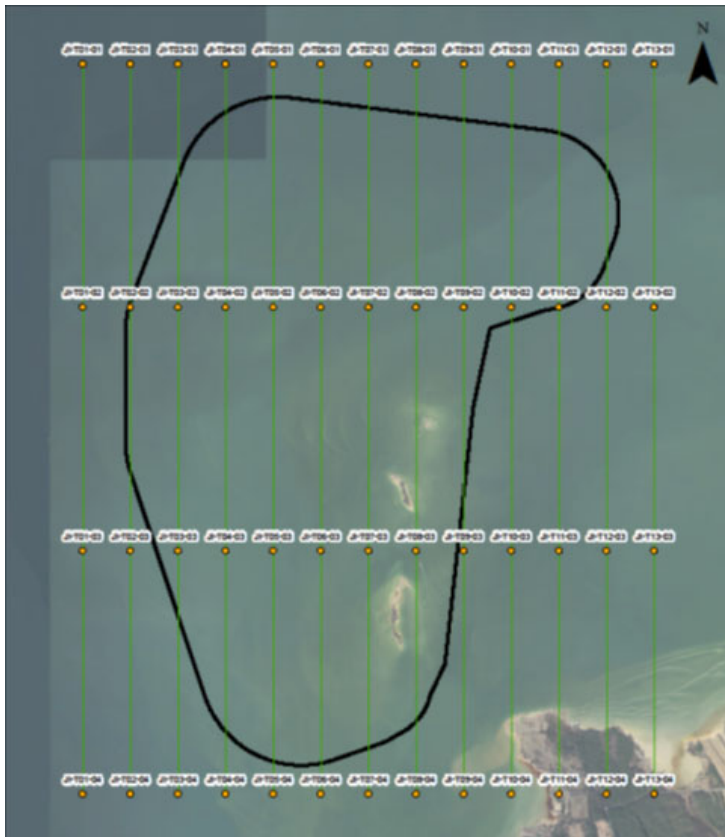
# Avian Surveys – Barren Island

- Habitats were more diverse – survey included shoreline, mudflat, salt marsh, and open water plus forest and scrub shrub
- Marsh habitat was also much larger
  - Hundreds of brown pelicans and double-crested cormorants
  - Shorebirds - sanderling, spotted sandpiper, and semipalmated plover
  - Terns, gulls, and raptors, plus some clapper rails and wading birds in the marshes
  - Terrestrial birds included migrant warblers, flycatchers, hummingbirds, resident brown-headed nuthatches, Carolina wrens, pine warblers, and cardinals



# Crab Pot Surveys

- Developed an area of observation and transects for consistency and navigation



# Crab Pot Surveys

- Next step is GIS analysis:
  - total crabpots per acre
  - estimates within James Island footprint
- Next sampling event:
  - Sept – next week
  - May, June, July 2021



# Fisheries – James Island

- Trawls: all locations sampled
- 4 locations at James
  - Location 1:
    - Successful pop net, gillnet and seine
    - Seine was shorter than target – approx. 20 ft in horseshoe





# James Island, cont

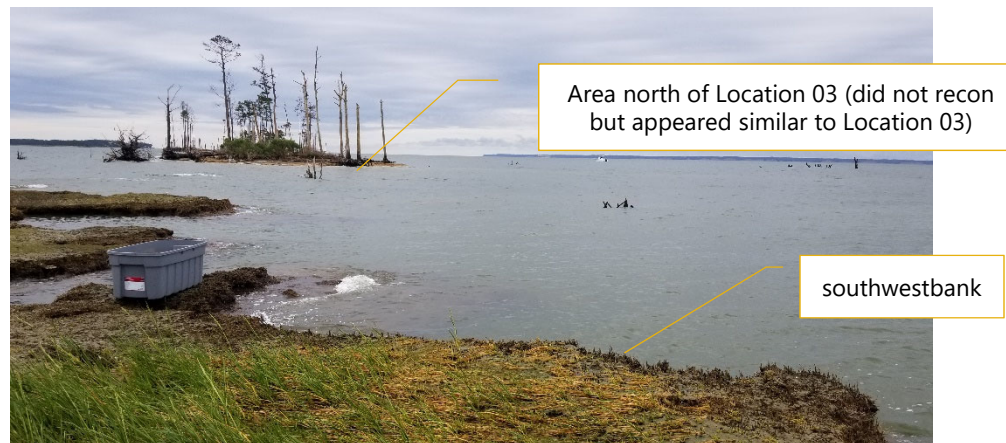
## – Location 2

- Successful pop net, gillnet and seine



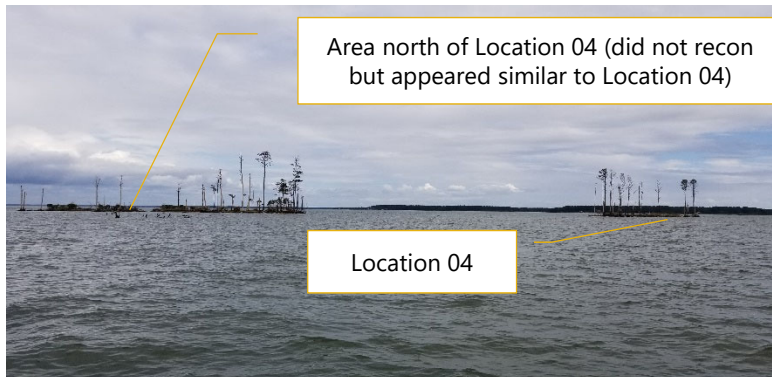
## – Location 3

- Successful gillnet and seine; abandoned pop nets



# James Island, cont

- Location 4
  - Successful pop net, gillnet recovery
  - Beach seine abandoned



# Fisheries – Barren Island

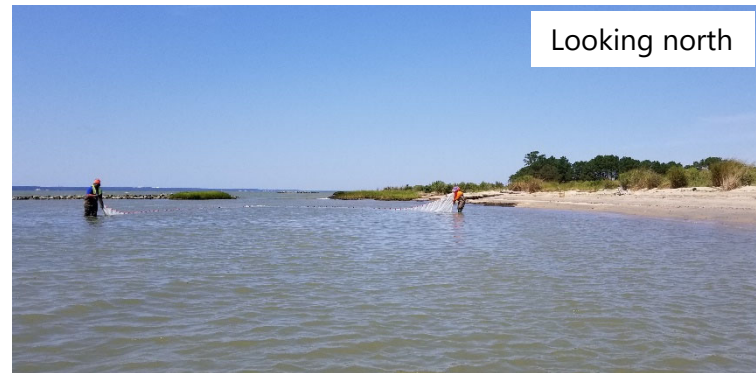
- Trawls: all locations sampled
- 5 locations at Barren
  - Location 1
    - Successful pop net, gillnet and seine





# Barren Island, cont

- Location 2
  - Successful pop net, gillnet and seine



- Location 3
  - Successful pop net, gillnet and seine



# Barren Island, cont

- Location 4
  - Successful pop net, gillnet and seine



- Location 5
  - Successful pop net, gillnet and seine



# Fisheries Summary

- Gill Nets
  - Successful overall
- Trawls
  - Successful overall; lots of crab pots at James hindered the gear's ability to fish effectively. Some locations were modified to avoid crab pots but maximize recovery
- Beach Seine
  - Limited "beach" area left for seining; James especially limited
  - Many of the seine locations did not extend full 100 linear ft
  - Abandoned one location (James 4) because no viable area and no 'replacement' area available
- Pop nets
  - Generally successful, but difficult to deploy
  - Abandoned one location (James 3) because no nearshore area





# Upcoming Sampling Schedule

- Fall sampling – tentative
  - Water and benthic community: week of Oct 19<sup>th</sup>
  - Fisheries: weeks of Oct 26<sup>th</sup> and Nov 2 (gill net, seine and trawl only)
  - Commercial clam survey: November
- Winter sampling
  - Water and fisheries: late January
- Spring 2021
  - April / May 2021
  - Crab Pots in May, June, July
  - Includes pop nets for fisheries



# Questions/Discussion





**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

23 February 2021; 10:30 - 12:00 a.m.

---

Webinar information: <https://usace1.webex.com/meet/angela.sowers>

**Join by phone**

+1-844-800-2712 US Toll Free

+1-669-234-1177 US Toll

Access code: 199 872 1676

1. Introductions
2. Project status/schedule update
3. Biological surveys
4. Barren Island – Habitat Delineation
5. Barren Island – 35% Design
  - a. Engineering considerations - H&H Modeling, foundation material
  - b. Natural resources considerations - SAV and Oyster Resources
6. Next Steps
7. Wrap-up and Action Items



# MID-CHESAPEAKE BAY ISLANDS ECOSYSTEM RESTORATION PROJECT

## DESIGN PHASE AGENCY COORDINATION UPDATE

Angie Sowers

USACE - Planning

23 February 2021

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



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# AGENDA

1. Introductions
2. Project status/schedule update
3. Biological surveys
4. Barren Island – habitat delineation
5. Barren Island – 35% design
  - a) Engineering considerations – H&H modeling, foundation material
  - b) Natural resources considerations – SAV and oysters
6. Next Steps
7. Wrap up and action items

*“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”*



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# SCHEDULE

## *Barren*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- Award AE contract – summer 2020 – MOVED in-house
- ERDC modeling – summer 2020 – IN PROGRESS
- 35% Design Complete– May 2021
- 65% Design Complete – October 2021
- NEPA: EA Public Review – December 2021
- Signed FONSI – March 2022
- Request CG appropriations for FY22
- Construction begins – summer 2022

## *James*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- ERDC modeling and in-house design – 2021 through winter 2023
- NEPA – summer/fall 2021 to summer 2022
- Draft Design Document Report (DDR) – winter 2022
- Request CG appropriations for FY24
- Construction begins – summer 2024





# PROGRESS SINCE SEPTEMBER MEETING

## ➤ Engineering

- ERDC H&H modeling of velocities for 5 potential southern breakwater alignments; and additional run of revised alignment with increased Manning's coefficient to represent roughness provided by SAV
- Updating/aligning schedule
- Soil sampling and analysis of southern and northeast breakwater
- Development of 35% Design documents (draft)

## ➤ NEPA

- Completion of summer and fall biological surveys
- Start of predatory mammal surveys
- In field wetland delineation
- Habitat delineation
- Evaluation of potential impacts to oyster bars
- Reference marsh – initial meetings, discussion

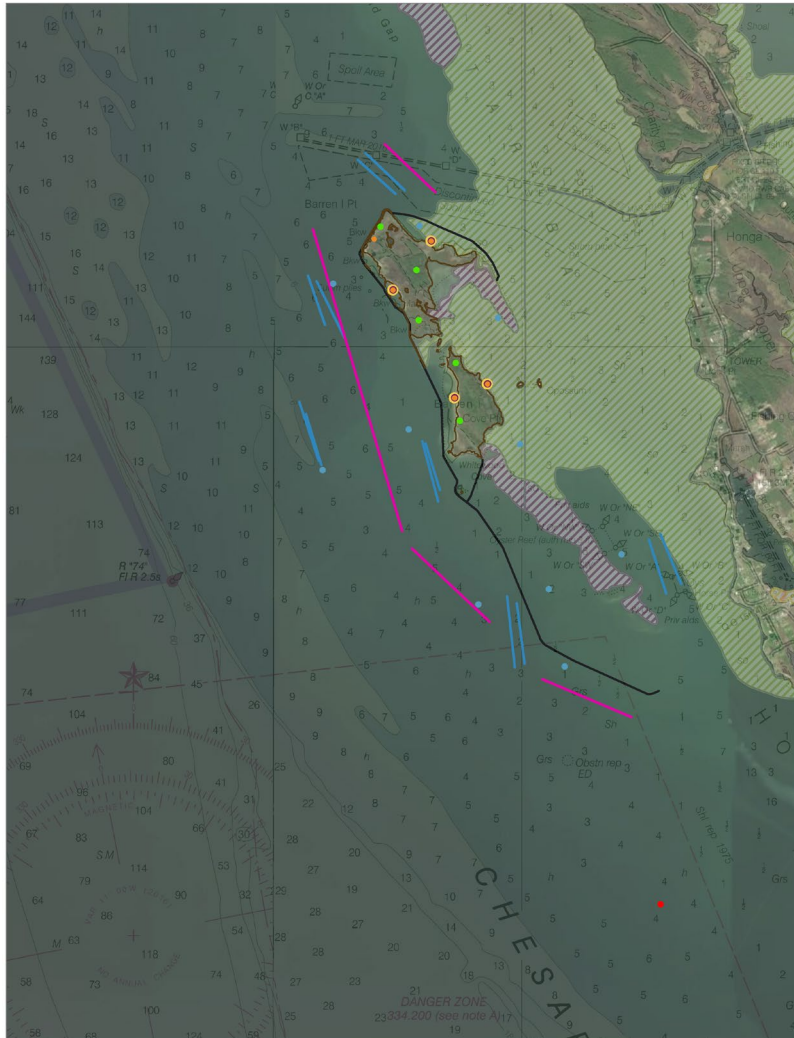
# BIOLOGICAL SURVEYS - STATUS

	<i>James and Barren Island</i>					
<b>Survey Type</b>	Spring 2021	Summer 2020	Fall 2020	Winter 2020 - 2021	Spring 2021	Summer 2021
Water Quality/Nutrient		√	√	Feb	April	
Benthic Invertebrate		√	√		April	
SAV	√				2021	
<i>Fisheries</i>						
Bottom Trawl		√	√	Feb	April	
Beach Seine*		√	√	Feb	April	
Gillnet		√	√	Feb	April	
Pop Net			√		April	
Soft-shell and Razor Clam			√			
Pound Net Telephone Survey***			√			
Commercial Harvest Data Collection				in progress		
Crab Pot Survey^		√			May, June, July	
<i>Avian</i>						
Avian surveys - point counts		√			April/May	
Avian surveys - wetlands - SHARP					May, June	July
Avian surveys - passive listening counts/flushing survey				Jan, Feb, March		Aug, Sept
Predatory mammals				Jan, Feb, March		Aug, Sept
To be conducted by Anchor QEA						
To be completed through FWCA - FWS or subcontractor (Audubon or APHIS)						
To be completed by DNR						



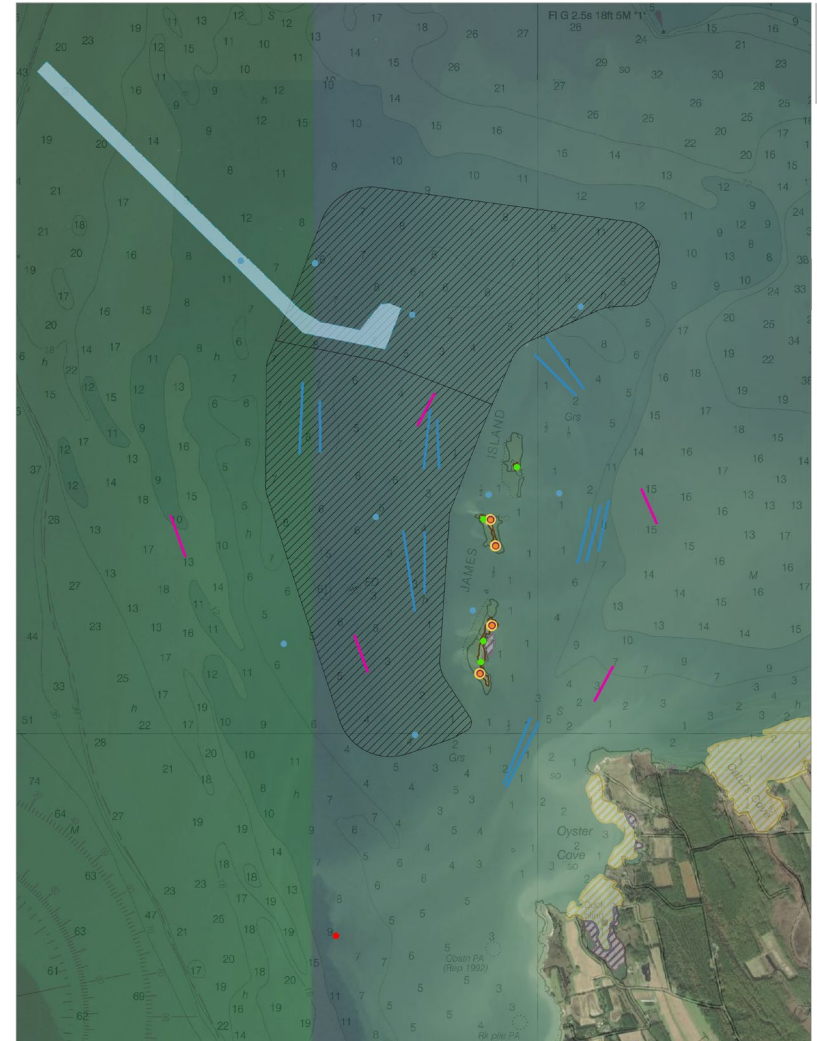
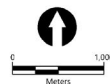
# JAMES AND BARREN SAMPLING POINTS (ANCHOR QEA)

6



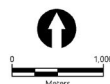
- LEGEND:**
- Avian Survey
  - Beach Seine Sampling
  - Gillnet Survey
  - Pop Net Survey
  - Water Quality Survey
  - Soft-Shell and Razor Clam Survey
  - Fisheries Trawls
  - Barren Island Remnants
  - Proposed Barren Island Protection
  - Existing SAV Bed
  - Dense 70-100% cover
  - Moderate 40-70% cover
  - Sparse 10-20% cover

**NOTES:**  
1. Basemaps obtained from Esri aerial imagery and NOAA raster nautical charts streaming services.



- LEGEND:**
- Avian Survey
  - Beach Seine Sampling
  - Gillnet Survey
  - Pop Net Survey
  - Water Quality Survey
  - Soft-Shell and Razor Clam Survey
  - Fisheries Trawls
  - James Island Remnants
  - Proposed James Island Access Channel
  - Proposed James Island Alignment
  - Existing SAV Bed
  - Moderate 40-70% cover
  - Sparse 10-20% cover
  - Very Sparse 0-10% cover

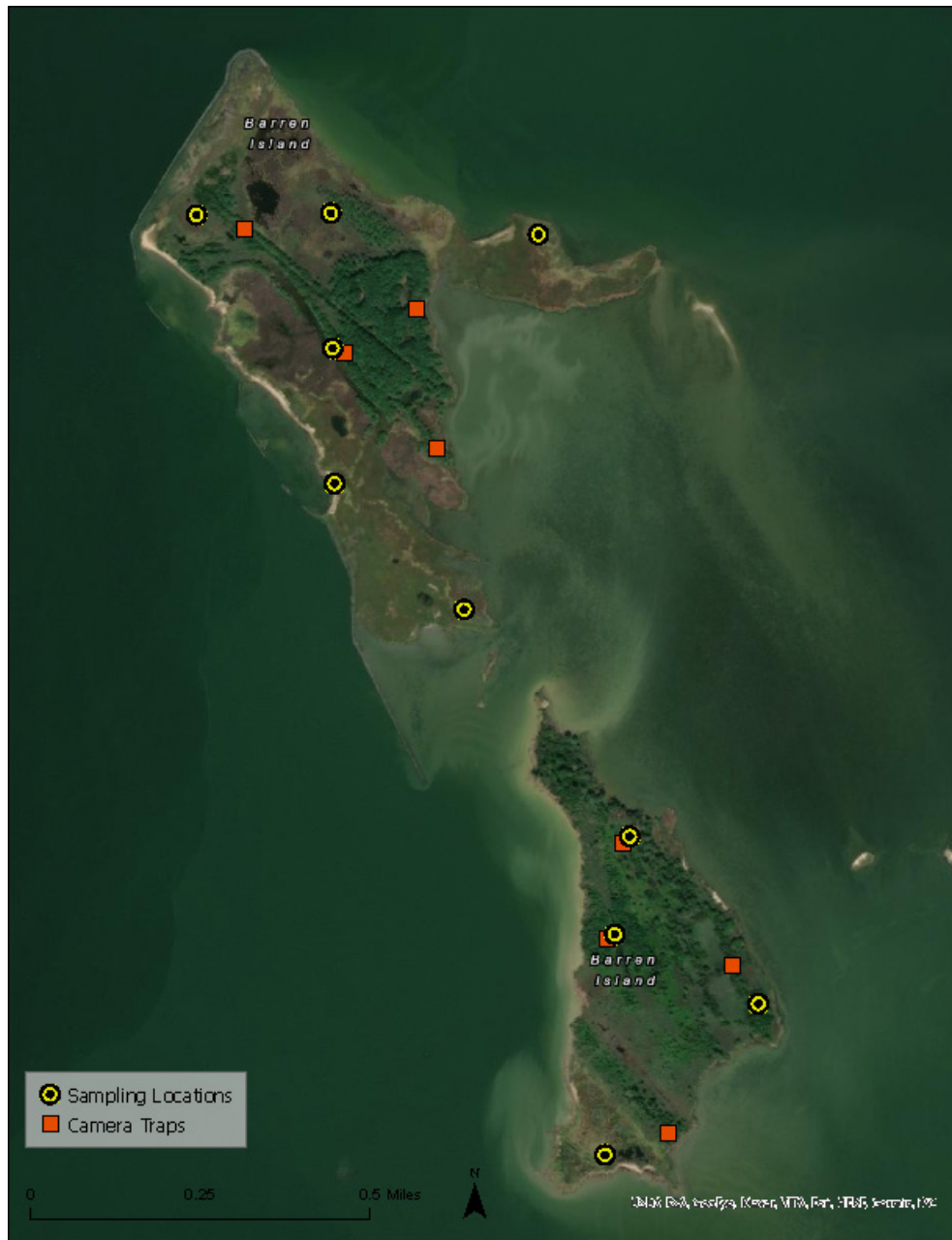
**NOTES:**  
1. Basemaps obtained from Esri aerial imagery and NOAA raster nautical charts streaming services.



# AVIAN AND PREDATORY MAMMALS SURVEYS - APHIS

Mammals observed Jan 7,  
2022

- Red Fox (visual and sign)
- Raccoon (sign)
- River Otter (sign)
- White tailed deer (visual and sign)
- Muskrat (sign)
- Also noted – remains of 1 box turtle and 2 diamond back terrapins



File Name



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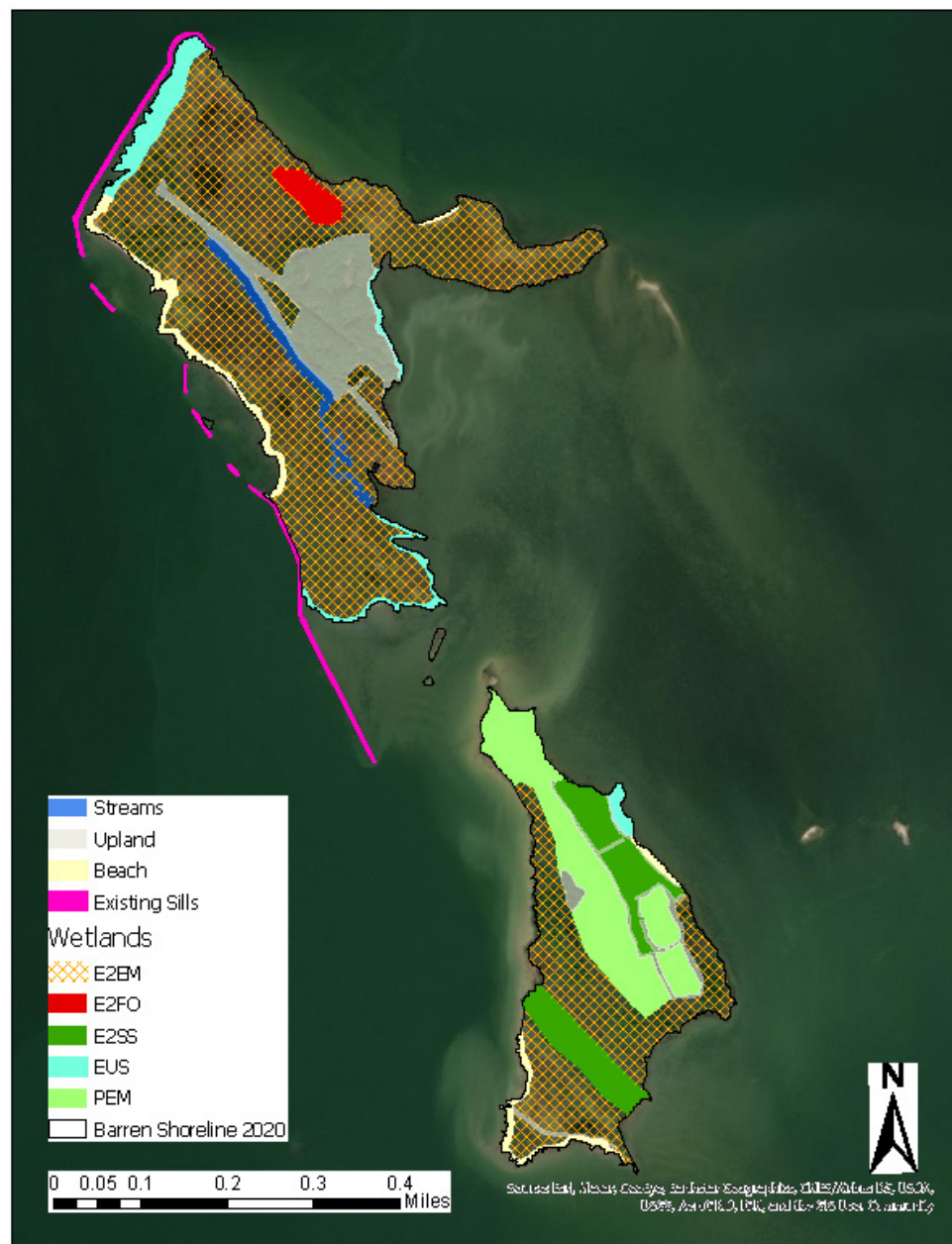




# HABITAT DELINEATIONS: BARREN

Barren Island Habitat Coverage (Acreage)		
<b>Wetlands</b>		<b>117.91</b>
PEM	13.92	
E2FO	1.70	
E2SS	8.73	
E2EM	88.74	
EUS	4.78	
<b>Stream</b>		<b>1.88</b>
<b>Beach</b>		<b>3.44</b>
<b>Upland</b>		<b>14.51</b>
<b>TOTAL</b>		<b>137.75</b>

E2FO - Estuarine, Intertidal, Forested
E2SS - Estuarine, Intertidal, Scrub-Shrub
E2EM - Estuarine, Intertidal, Emergent
EUS - Estuarine, Unconsolidated Shore
PEM - Palustrine, Emergent



# HABITAT DELINEATIONS

## JAMES

9

James Island Habitat	
	Acres
Upland	3.35



File Name



## ➤ Alternatives evaluated:

Alt 1 - island protection (NE sill, improve existing sills along western shoreline, SE sill), no breakwater

Alt 2 - full breakwater

Alt 3 - short breakwater

Alt 4 - 2 bird islands extended from short breakwater

Alt 5 - segmented breakwaters extended from short breakwater

Alt 6 – island protection with 150 m breakwater, 100 m gap, and 3 bird islands

## ➤ Compare – targeting alternatives which replicate or improve (reduced velocity) the current conditions that promote SAV habitat (based on relatively consistence presence of SAV east of Barren prior to wet years of 2019 and 2020)

## ➤ Results suggest that full southern breakwater extent is not warranted

- Footprint of full southern breakwater does not mimic historic shoreline
- Due to poor foundation, material would need to be removed and fill used from a new borrow area to construct lower half of southern breakwater
- Modeling results show that shorter breakwater can provide for existing or reduced velocities throughout the SAV habitat
  - Velocity reduction benefits higher in the southern portion of the habitat where island erosion has left habitat exposed
  - Continuing to investigate Tar Bay area velocities
- Modeling results suggest that additional cost for longer breakwater are not necessary



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## PROPOSED 35% DESIGN

Proposed Sill Crest  
Elevation (NE, SE,  
existing) = 3.52'

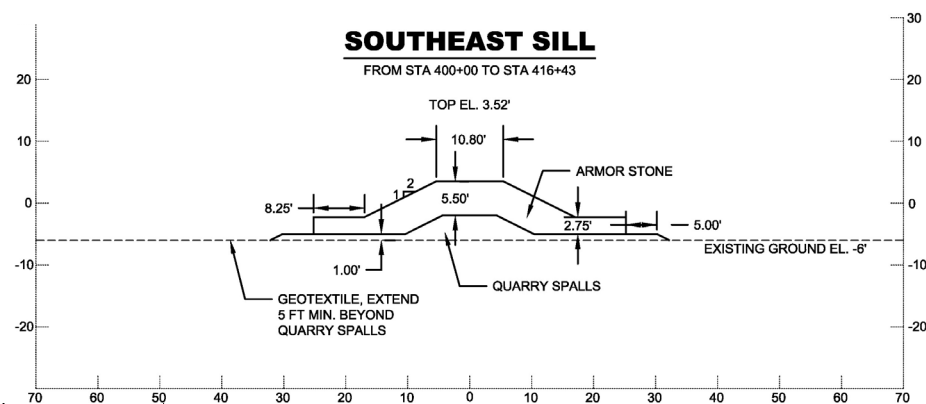
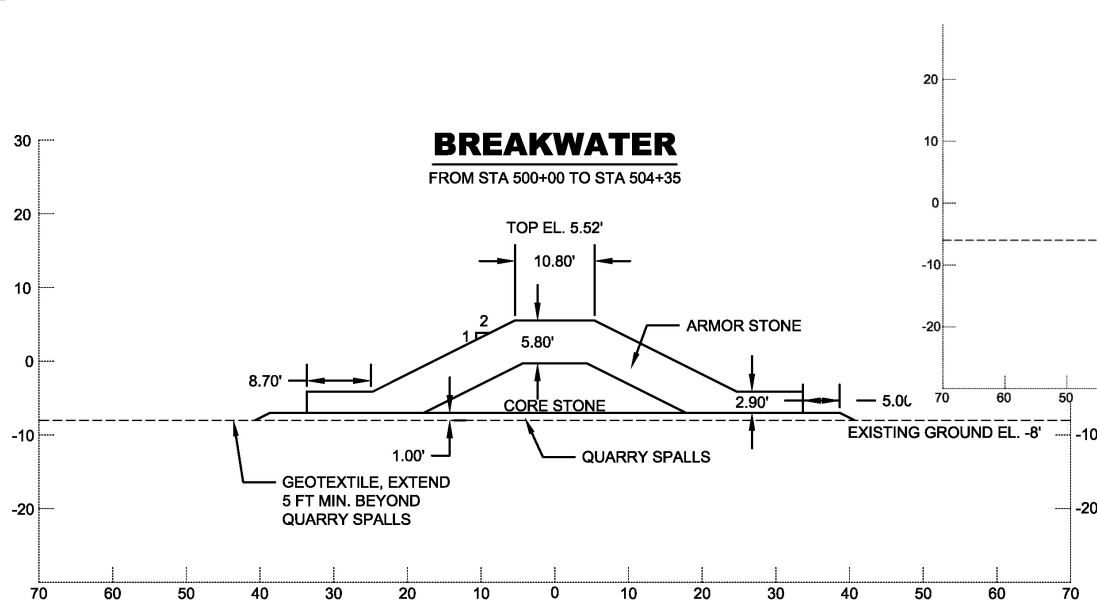
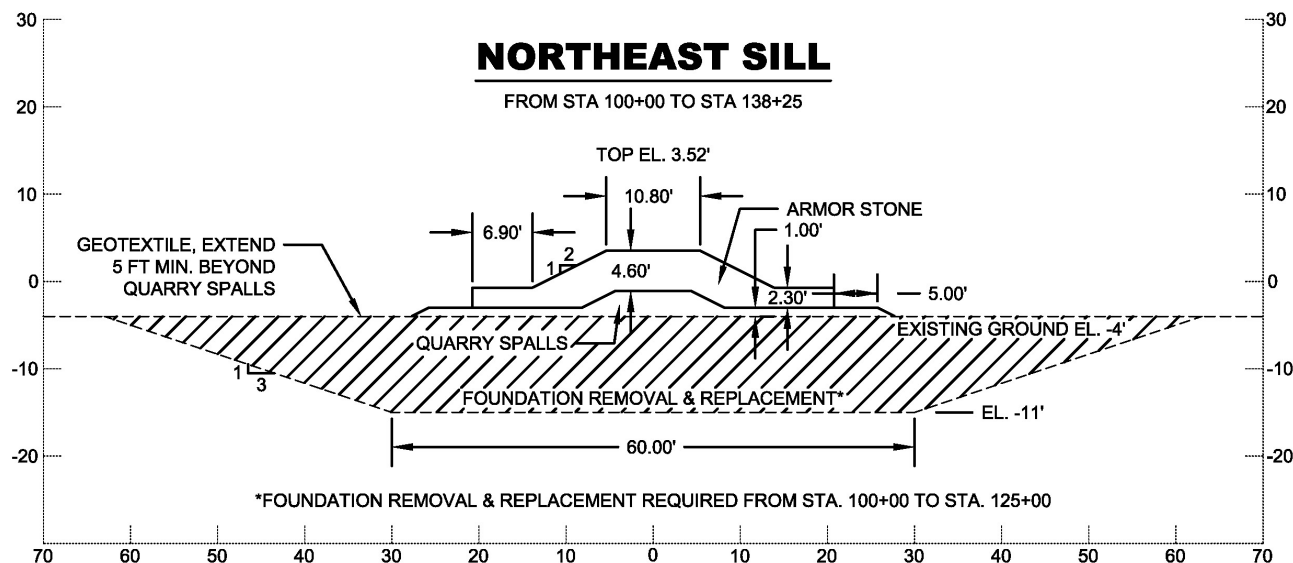
Proposed Breakwater  
Crest Elevation =  
5.52'



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# BARREN – SILLS AND BREAKWATERS 35% DESIGN



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# ERDC H&H MODELING FOR BARREN ISLAND DESIGN

- Previously modeled water levels and wave heights
- Utilized CSTORM (for 25 storms) to evaluate velocities:
  - maximum water velocities,
  - 24 hour and 48 hour mean peak velocities,
  - velocities at spring high and summer low tide conditions,
  - affect of adjusting Manning's n coefficient to represent bottom roughness provided by SAV beds



# SAV CONSIDERATIONS FOR DESIGN

- SAV species present at Barren and James:
  - Horned pondweed (*Zannichellia palustris*) (Barren and James) – spring
    - Canopy formers – wave limited
  - Eelgrass (*Zostera marina*) (Barren) – spring
    - Meadow formers
  - Widgeon grass (*Ruppia*) (Barren and James) – summer
    - canopy formers – wave sensitive/impose less drag on waves
  - Macroalgae sea lettuce (*Ulva lactuca*) (previously Barren and James)
  
- Velocity profile requirements (Koch 2001 and CBP 2000)
  - Preferred current regime: *Z. marina* > 3 – 180 cm/s; *Z. palustris* < 50 cm/s
  - Intermediate currents are needed to support growth and distribution = 5 to 100 cm/s
  - minimum velocities = 3 – 16 cm/s, max = 50 – 180 cm/s
  - Wave tolerance – 0-1 m limited growth for canopy formers (*Ruppia*)
  - waves > 2m tolerant growth for meadow formers

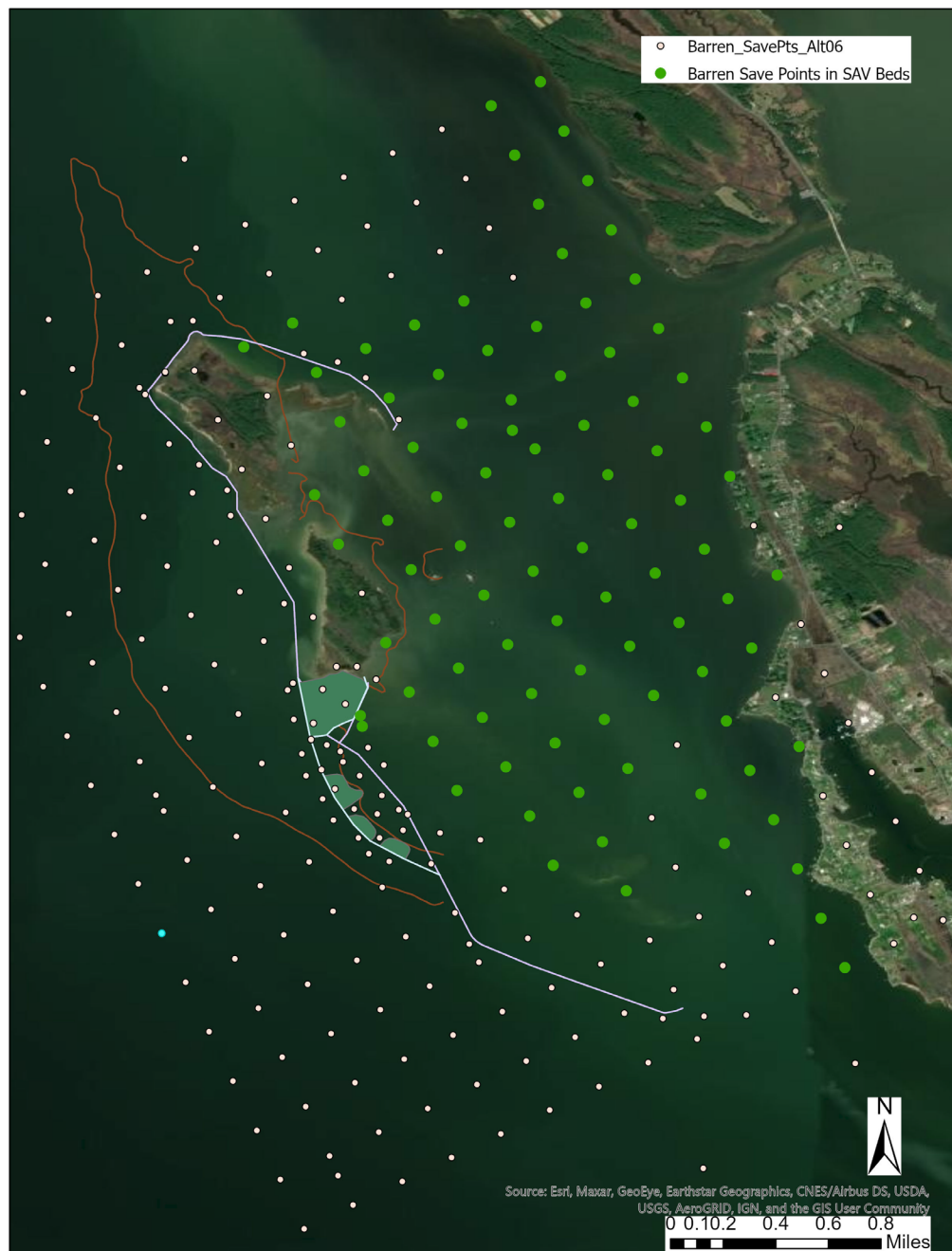




# SAV HABITAT COMPOSITE 2014 TO 2018



# MODELING SAVE POINTS

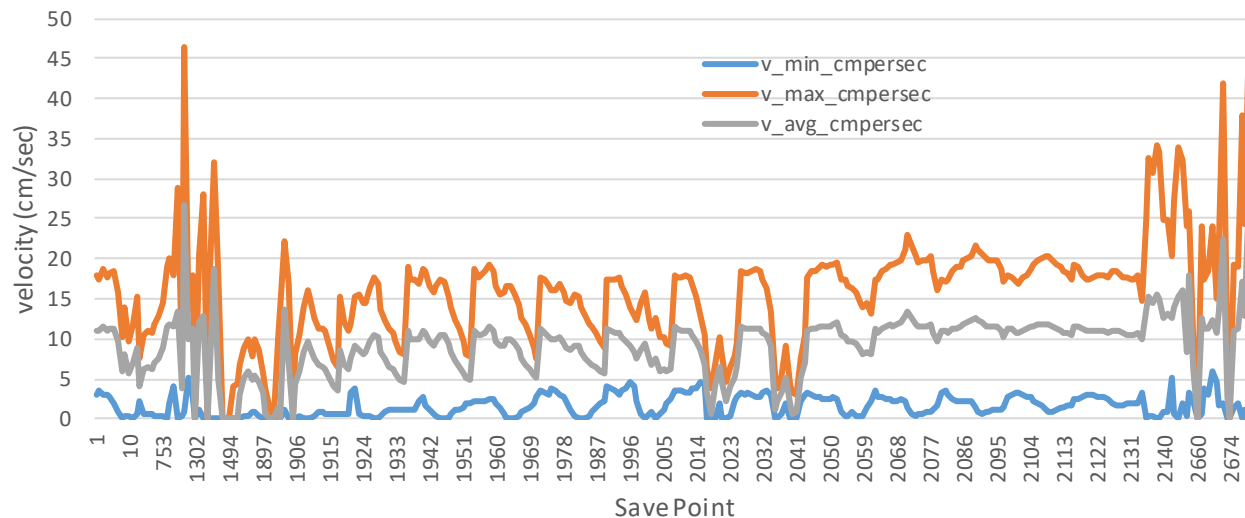


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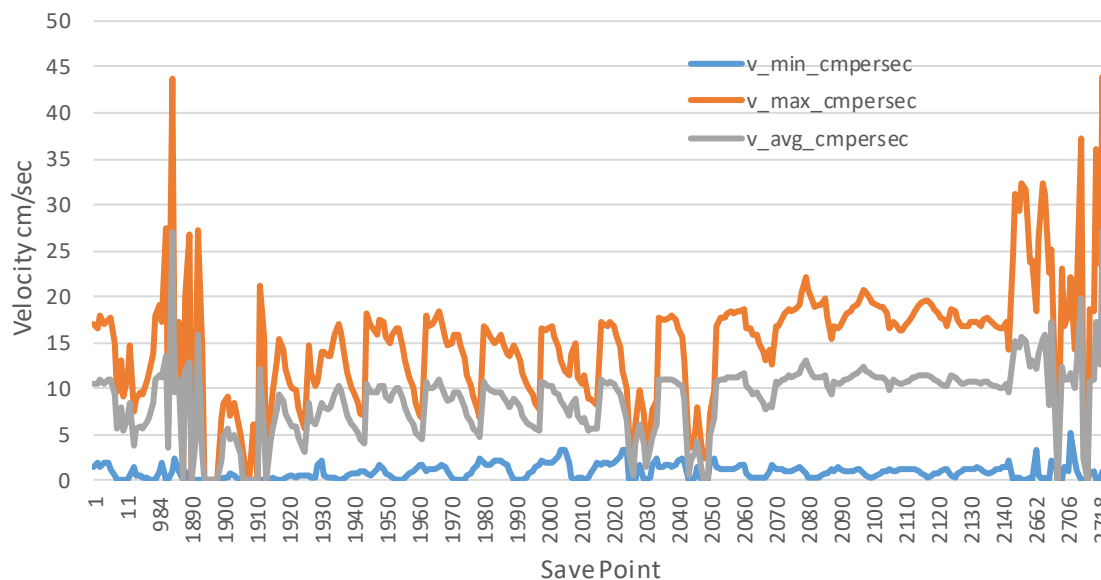


# EXISTING CONDITIONS

Spring Tides High Flows - Velocity cm/sec



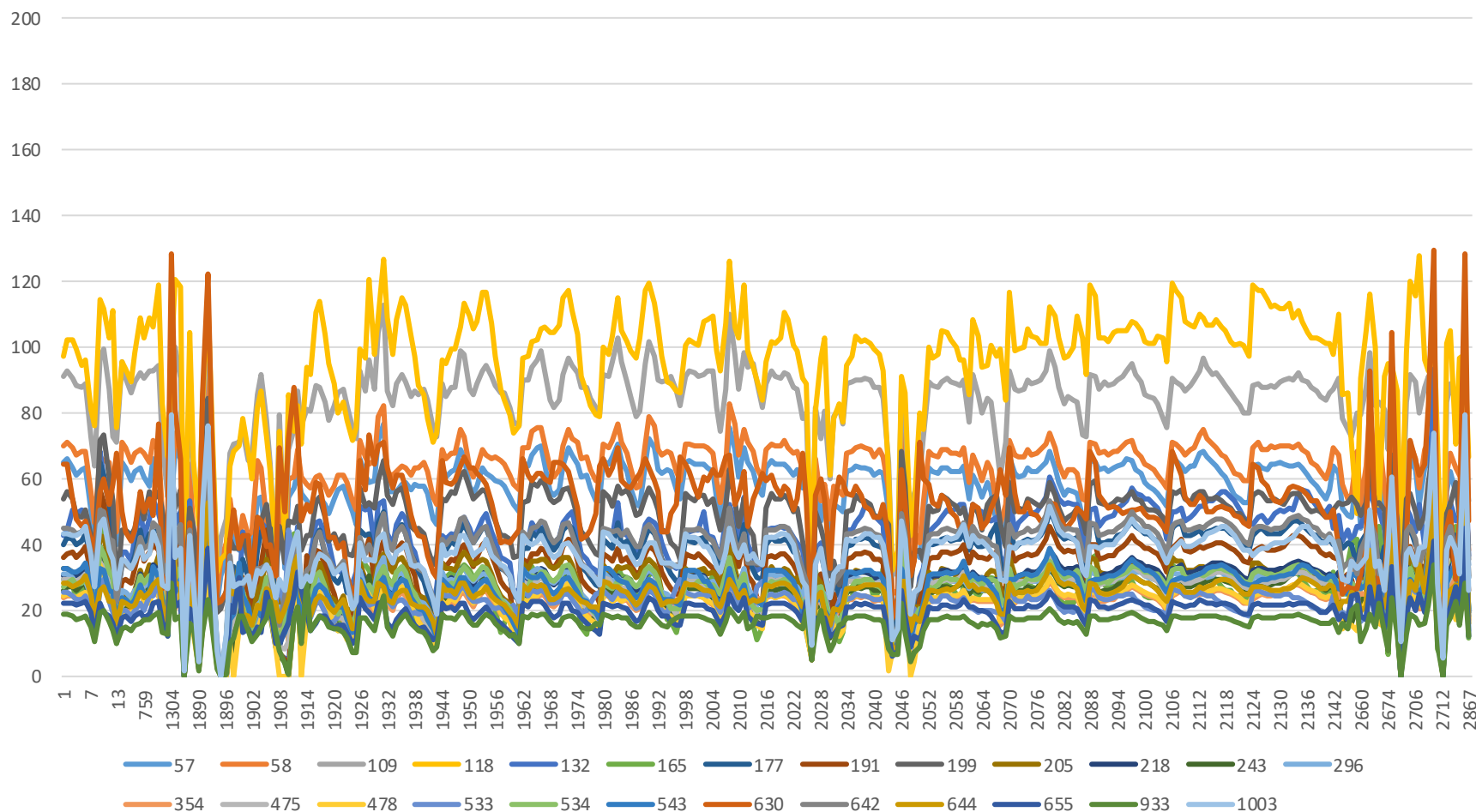
Summer Tides Low Flows - Velocity (cm/sec)



- Spring High Tides - maximum ranges from 0 – 46.8 cm/s; avg ranges from 0 - 26.9 cm/s
- Summer Low Tides - maximum ranges from 0- 44 cm/s; avg ranges from 0 – 27.2 cm/s

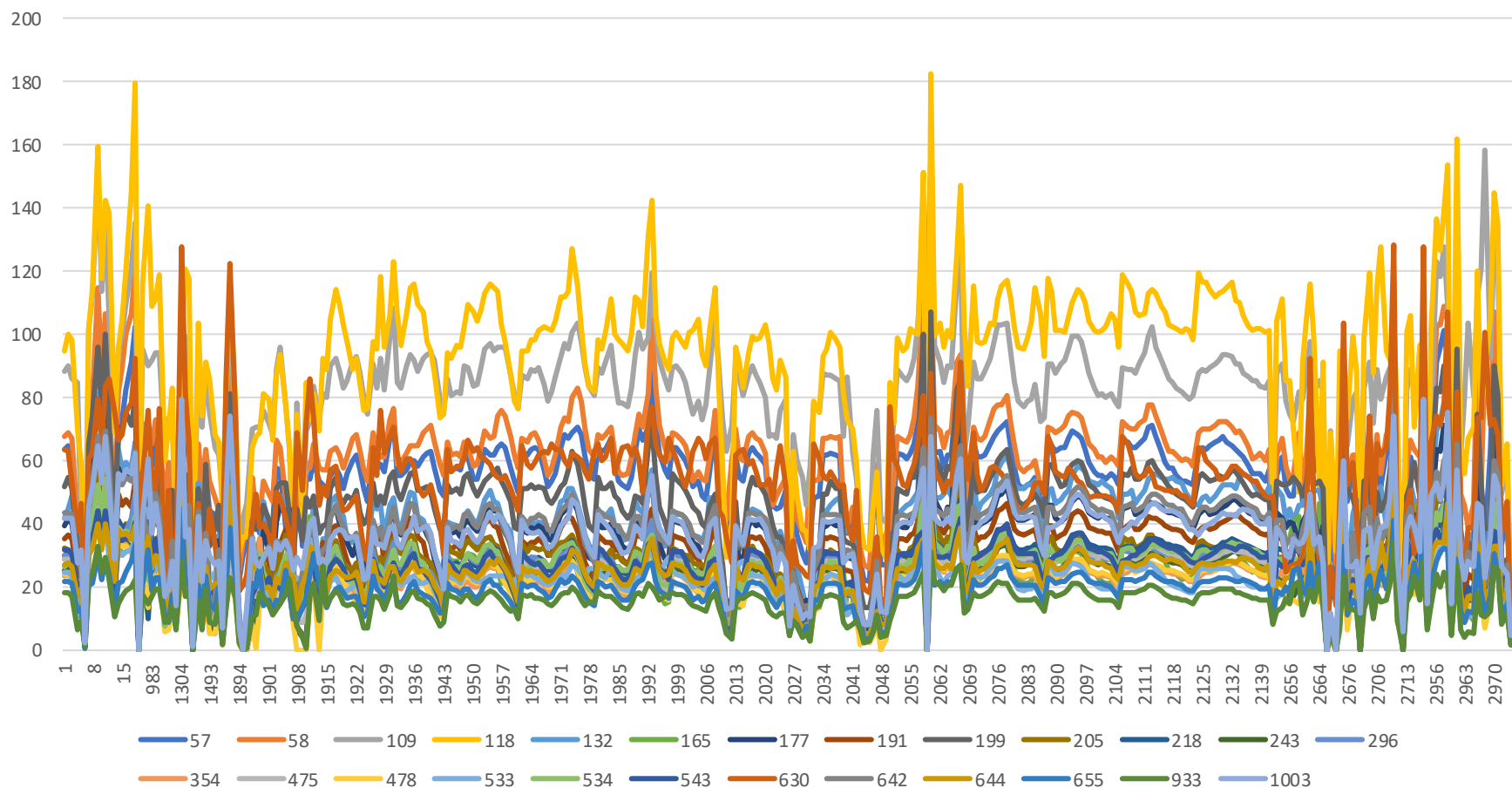


# Base (Existing) - Maximum Velocity (cm/sec) for 25 Modeled Storms



Maximum ranges from 33.6 – 129.3 cm/s; avg ranges from 16 – 95 cm/s

## Alt 06: Proposed 35% Design - Max Vel (cm/s) for 25 Modeled Storms



Maximum ranges from 34.1 – 182.6 cm/s; avg ranges from 16 – 93 cm/s





# MAXIMUM STORM VELOCITIES – SUMMARY COMPARISON

Storm	Base (Existing Conditions) - all Save Points			Alt 06 - all Save Points			Base (Existing Conditions) - Save Points in SAV			Alt 06 - Save Points in SAV		
	min	max	avg	min	max	avg	min	max	avg	min	max	avg
57	14.9	83.7	57.2	0	109.0	55.8	18.5	75.7	57.3	16.4	89.7	55.2
58	17.0	90.1	62.9	9.3	121.5	62.6	21.4	83.0	63.2	19.8	105.0	61.4
109	19.9	112.8	83.6	11.3	158.1	83.1	33.8	110.0	86.0	32.5	119.6	84.2
118	15.7	128.0	95.1	0	182.6	93.0	35.3	126.2	97.2	29.3	142.3	94.6
132	0	93.2	42.7	0	90.9	41.4	17.4	54.5	41.2	4.3	56.9	39.3
165	0	72.3	26.5	0	72.2	26.0	12.5	39.6	25.9	7.3	38.8	24.3
177	0	66.1	38.1	0	86.1	36.8	20.3	49.8	37.8	7.6	53.7	35.8
191	0	56.4	32.4	0	73.1	31.2	7.6	44.3	32.3	3.8	44.7	30.5
199	10.5	84.7	49.0	0	106.9	47.9	30.4	62.9	49.0	13.5	70.7	46.1
205	0	54.6	29.3	0	61.9	28.6	16.7	39.0	29.8	7.4	38.8	28.4
218	0	52.0	27.4	0	54.2	26.3	13.2	35.6	26.3	5.2	36.3	25.0
243	0	39.5	23.2	0	49.9	22.3	8.6	32.2	23.2	2.9	31.7	21.8
296	0	50.7	27.3	0	52.0	26.3	13.1	34.2	26.9	6.5	41.2	25.6
354	0	37.3	22.2	0	45.7	21.3	11.6	32.7	21.9	4.5	34.9	20.5
475	0	37.4	24.9	0	47.5	23.8	12.1	32.4	23.8	5.3	34.5	22.4
478	0	34.6	21.0	0	45.1	20.0	8.7	30.4	21.2	3.0	30.0	19.9
533	0	70.5	23.0	0	70.4	22.2	13.7	32.7	22.4	8.3	32.1	21.3
534	0	54.4	26.9	0	54.9	25.9	14.6	36.2	26.8	5.7	36.7	25.6
543	0	49.8	26.6	0	50.8	25.6	13.1	34.1	24.9	5.9	34.6	23.5
630	13.5	129.3	53.0	0	128.6	53.4	25.1	75.0	53.5	22.6	77.3	54.3
642	0	72.2	39.1	0	73.5	37.6	20.0	51.1	38.0	9.1	53.3	36.5
644	0	62.7	24.8	0	62.7	24.0	14.4	36.8	23.9	7.6	35.3	22.9
655	0	45.0	19.2	0	45.0	18.5	9.7	31.3	18.6	4.9	30.3	17.5
933	0	33.6	15.9	0	34.1	15.1	7.3	28.5	16.2	2.7	27.1	14.9
1003	0	79.7	37.1	0	79.4	36.1	20.6	45.0	35.5	10.7	55.3	34.0



NaN	57	58	109	118	132	165	177	191	199	205	218	243	296	354	475	478	533	534	543	630	642	644	655	933	1003
759	62.89142	71.64121	59.27257	51.11016	46.51294	26.67856	43.78815	38.79525	56.65811	33.13741	31.72706	30.0688	25.61328	28.87036	26.32222	23.45714	31.27692	29.12496	54.79658	44.82489	27.69421	20.47919	17.56093	41.6519	
1897	46.43538	54.724	70.19179	63.92654	71.36837	24.36739	28.92671	78.70579	41.0323	31.68845	28.72456	43.43079	20.04557	32.79805	28.72456	17.66699	3.988361	27.06972	17.61176	39.77445	35.93834	27.79125	20.79125	16.5072	
1899	37.25477	47.38943	70.10913	68.8994	68.8169	21.73026	26.7476	24.64748	59.67867	35.10918	30.672	25.70706	24.08526	34.93389	24.13724	14.65574	26.50899	36.6537	62.58842	38.76026	26.74637	19.19457	26.5649	18.18702	
1902	46.98258	25.82855	76.15543	81.03594	46.83114	23.78974	37.39822	12.62475	45.87425	27.92192	22.69905	29.70578	22.00589	29.59245	19.15825	18.17718	18.81856	34.17318	20.6336	40.1792	28.9858	19.17842	13.77687	17.7885	
1903	39.79761	40.40072	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	21.00124	31.65363	
1903	57.84532	46.80988	68.15511	66.7766	29.27919	18.58144	25.23841	21.83059	35.33059	19.27281	16.15121	14.13579	15.48395	14.05874	15.0809	13.00641	14.50691	17.25516	17.43709	29.56302	26.71618	16.52793	12.47992	10.84915	
1903	57.25235	66.5704	88.7676	17.9964	45.26579	24.89941	40.70865	26.70654	51.02316	27.1173	29.54374	38.27764	13.26438	13.32299	15.1939	19.98704	22.32721	21.60681	50.12658	34.53141	21.78423	15.8313	13.04349	34.19437	
1904	57.02736	38.0861	56.06378	93.61285	48.58842	30.31812	45.60094	33.35229	53.0998	29.1232	22.85992	17.68298	24.37758	21.93007	19.54694	17.81658	22.97043	20.97245	19.54345	48.44329	33.8003	21.2044	14.3736	14.777	
1905	38.51449	48.98563	77.70403	77.95	46.16933	37.4145	47.75853	83.01792	53.14444	36.13438	27.46301	31.87178	29.61215	23.97708	17.71754	22.45856	30.14436	26.17522	22.52211	41.88052	34.75076	27.38883	25.39225	17.4328	
1906	26.12927	33.4645	64.58514	64.43786	43.85749	38.82944	44.78538	32.55798	43.05629	31.6503	27.1422	34.96303	19.19248	28.71881	33.64447	19.88435	31.07942	32.6287	32.77447	37.09049	32.00575	26.36005	18.05706	22.18077	
1907	16.44245	19.796	32.2297	34.65716	20.5095	20.30163	20.67711	12.66519	14.05771	29.98692	20.7649	15.39465	18.32557	8.93077	23.23964	16.33373	13.79501	29.664	21.58981	23.24988	9.69957	13.55833	31.35933		
1912	59.85071	65.27405	83.26009	81.34121	45.4269	44.88467	36.67879	28.81867	48.51488	34.78261	26.1342	19.96613	31.32079	21.43868	24.43211	21.92172	23.10045	25.12591	17.60349	73.80501	37.67251	30.92088	30.30881	12.12684	
1914	52.035	97.79749	90.95754	97.96594	53.04688	48.83114	33.67978	34.8165	39.26363	45.74126	45.50676	27.99681	48.61864	27.64545	25.56463	28.07627	20.44239	26.62786	51.54822	31.6432	19.43173	23.9215	27.08877		
1915	50.76953	56.0654	89.18464	89.06516	45.58793	29.28349	42.40867	35.35794	34.35794	30.3209	27.76571	30.03615	23.21346	26.17568	24.98529	31.92762	31.03661	46.6205	31.01144	24.55208	27.33381	15.89097	36.72298		
1916	55.39829	62.90243	90.32569	90.45078	46.36367	28.15826	42.13777	37.41623	50.85224	32.16081	28.54537	26.76265	27.67036	25.54129	24.88456	25.04392	21.60202	30.13019	26.23751	57.31277	14.8485	22.24008	16.35521		
1917	57.25279	60.5247	52.75934	104.527	48.49548	29.71492	43.32873	39.3277	54.9477	34.87092	53.21975	29.51978	25.50168	26.34789	39.0893	26.5095	25.80673	37.75992	48.3117	45.6807	20.92898	15.72798	15.75828		
1918	55.2941	62.014	88.11376	109.1073	44.6661	24.81433	39.31838	37.07599	48.43902	31.20288	29.6664	26.5579	27.7535	32.32396	26.28578	24.46384	20.44722	29.26297	27.53649	48.0988	14.8114	24.8646	19.76513		
1919	51.05602	57.73225	62.68403	103.1031	42.3565	22.56397	35.84879	37.0592	46.44382	27.38451	26.3931	24.3573	24.64716	21.27717	23.5521	21.67973	18.24334	25.69352	55.84287	43.98951	38.52586	33.39986	18.28277		
1920	55.90488	61.25407	55.3817	97.42197	35.36198	18.22466	33.81914	24.44947	48.6471	46.30899	23.4311	20.1122	69.27424	19.09326	1.88665	19.03409	18.97638	36.66616	22.4742	44.7636	36.13873	22.63612	16.24935		
1921	60.17425	66.28587	91.14274	88.95733	33.90465	18.14226	26.16596	24.14494	47.74434	34.55624	21.0107	60.6769	22.6152	18.09139	19.92324	15.63109	16.16628	20.81059	23.10171	46.97016	35.33933	23.55744	16.90359		
1922	61.17171	67.96793	93.01356	92.67592	34.97955	12.57277	32.62733	24.97906	50.39572	27.70406	40.47828	17.70046	32.39264	17.76221	19.48011	15.98194	24.46409	22.1841	32.1287	48.8836	36.83585	28.83662	17.16175		
1923	56.81787	62.9683	87.7768	84.19539	28.43407	16.53777	26.88165	19.19358	43.49674	22.79009	18.18097	13.1362	19.89208	19.94448	15.58487	12.5789	20.57837	18.15278	18.78261	39.92472	30.75067	20.80869	14.25333		
1924	51.17508	56.0654	89.18464	89.06516	45.58793	29.28349	42.40867	35.35794	34.35794	30.3209	27.76571	30.03615	23.21346	26.17568	24.98529	31.92762	31.03661	46.6205	31.01144	24.55208	27.33381	15.89097	36.72298		
1925	47.22662	53.89829	74.06474	76.23261	32.3812	22.96248	28.96365	31.19078	41.2651	26.1666	26.91358	18.81725	28.80218	28.69002	14.25521	14.98062	13.36776	15.14578	14.98562	51.71587	28.09614	12.46321			
1926	64.27867	69.10606	90.74361	97.88929	47.68184	21.11719	40.53739	35.95003	50.81627	32.18177	28.82644	26.30016	31.371	24.53646	25.85395	23.57668	20.0602	72.4002	63.54949	40.8864	20.8705	15.30251			
1927	58.41733	63.70994	42.79381	55.25584	44.8558	28.83685	37.79947	23.28137	45.91358	28.14621	25.92239	22.84945	25.84133	26.15512	22.73512	21.69217	24.7979	23.66032	25.48293	55.3958	35.84928	22.81707			
1928	58.84087	61.08235	52.5365	118.1113	45.74073	26.0939	37.82182	38.83663	48.91453	25.08365	24.47573	25.97389	25.39143	20.61159	19.96491	20.6561	26.67515	25.44838	33.10594	75.5398	38.51047	22.01801			
1929	56.15025	61.0808	82.6042	95.65138	35.59796	25.32514	32.39361	36.57923	46.24134	27.3465	41.46366	12.42262	14.63208	27.10547	19.16393	18.62249	21.132	22.90837	20.11643	62.40014	32.8606	21.33449			
1930	57.01777	72.82858	98.94551	105.8039	45.70037	30.52868	40.80191	35.65923	45.49502	32.38118	27.58127	20.06676	25.11874	22.98481	26.18064	27.63272	25.38179	67.7376	40.93769	26.43693	20.50069	17.73706			
1931	72.49765	76.67942	108.0227	123.0549	48.34567	30.36958	44.79505	28.35251	56.69558	35.39968	36.46322	27.11998	34.1834	20.93974	27.72297	24.54142	26.81241	21.47421	27.6521	70.45	45.44626	26.11131			
1932	55.01941	58.58042	84.49583	105.6068	40.57392	27.49677	37.40555	20.21999	50.20852	31.95013	26.22549	22.90624	26.82001	21.14222	22.8478	21.22881	22.16695	27.82524	32.94887	62.2083	38.80051	25.25252			
1933	54.74363	59.52137	83.07372	96.77818	38.34205	22.72058	26.28029	31.30884	47.4533	30.24479	33.38682	32.45488	26.013	19.73896	19.96324	24.24509	25.6509	26.77622	23.15303	60.71941	36.77549	21.82897			
1934	57.12961	62.06564	89.18464	89.06516	45.58793	29.28349	42.40867	35.35794	34.35794	30.3209	27.76571	30.03615	23.21346	26.17568	24.98529	31.92762	31.03661	46.6205	31.01144	24.55208	27.33381	15.89097			
1935	59.43844	64.82983	93.61025	114.5714	50.12009	20.79058	26.1957	13.58187	55.68091	36.22473	33.86818	42.94848	19.38308	17.38899	18.99699	29.92127	37.97526	58.5834	36.15944	40.13098	27.95121	20.515			
1936	59.943	64.47181	81.71045	105.895	49.28781	29.35302	45.55832	41.35769	56.30975	35.56499	33.31218	28.7331	17.72579	36.31498	49.57742	27.80292	23.56755	33.50529	30.32882	58.43032	45.9276	27.53258			
1937	58.24198	54.02088	88.50776	109.1073	42.36939	23.78371	40.18018	35.84708	50.7756	30.2681	29.88681	26.54471	26.63022	26.39022	24.29794	21.21216	28.81359	25.94771	71.7366	40.90997	24.37055	18.66292			
1938	61.38844	69.04533	92.41674	107.2769	41.32976	21.5169	39.12179	34.18786	51.20618	28.78063	27.83747	24.51288	27.24868	27.72054	25.77217	27.69598	1.08511	25.99056	55.41614	68.62043	39.501	28.2751			
1939	62.18985	70.24326	93.35556	97.1448	37.60848	23.40749	36.2991	28.83997	51.99465	28.21037	24.1712	20.1213	25.9536	72.9215	14.1426	19.2771	17.78396	29.09023	53.57853	60.82547	37.49448	28.86373			
1940	57.31385	61.12219	80.99625	95.88746	37.54741	25.97399	35.57454	35.56342	49.51741	29.06151	25.9493	24.5561	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657	25.9657		
1948	62.3598	65.94598	89.77637	103.1876	42.55152	28.83576	39.71279	24.6619	54.7716	36.26															

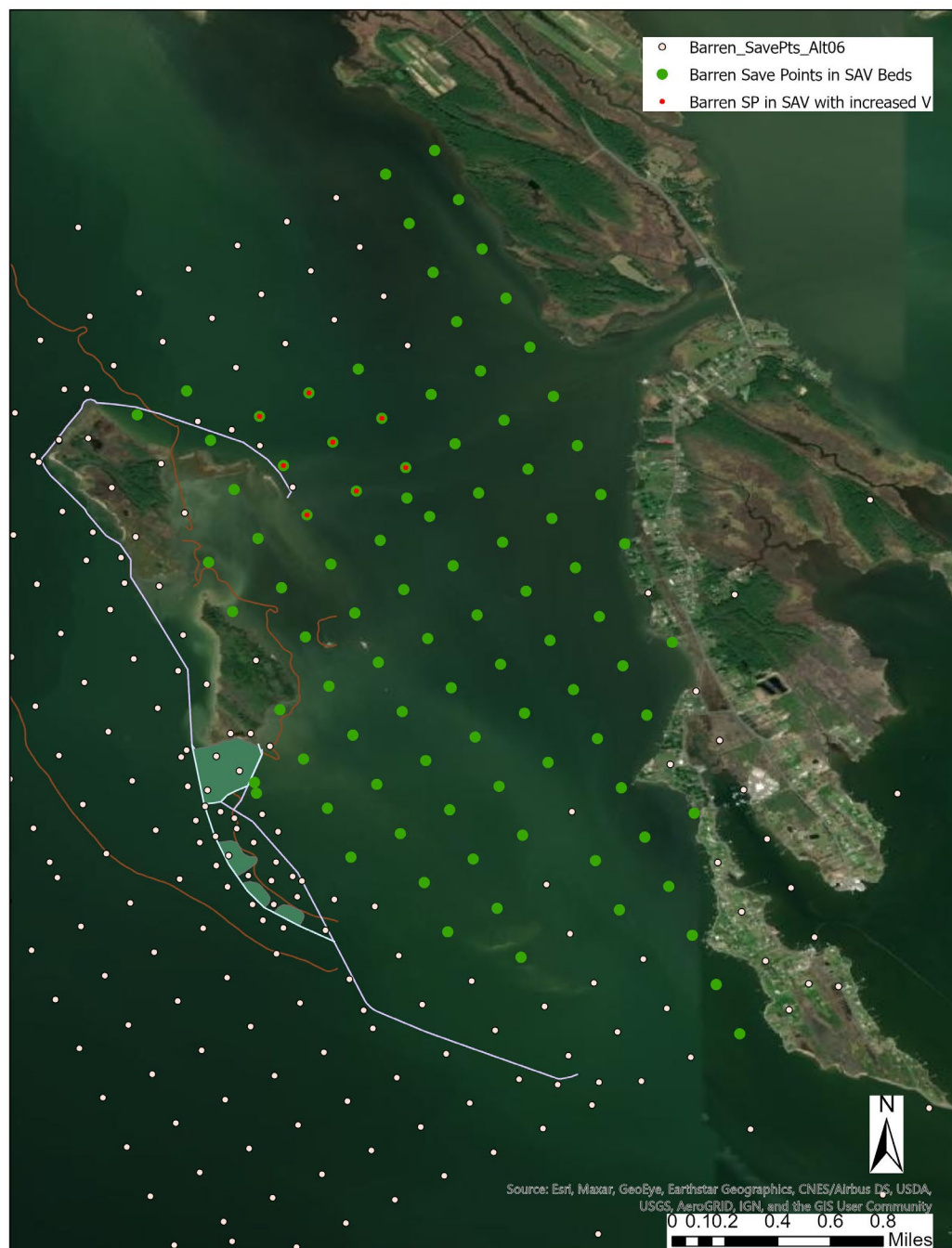
- Green:  $\Delta < 0$  (a reduction)
- Yellow:  $0 < \Delta < 5$
- Orange:  $5 < \Delta < 15$
- Red:  $15 < \Delta < 25$
- Dark Red:  $\Delta > 25$



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## Save Points in SAV Beds with increased velocities for select storms



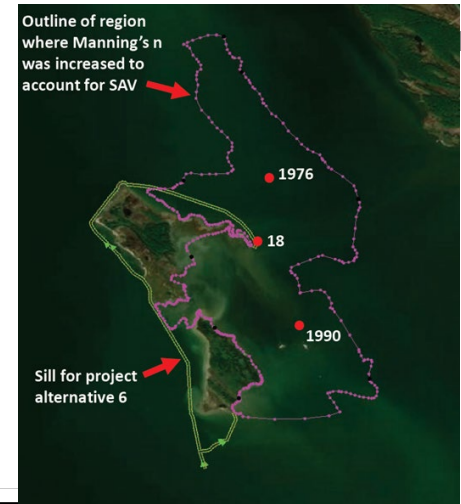
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# BED ROUGHNESS FROM SAV – INCREASE MANNING’S N COEFFICIENT

- The model setup was adjusted to have higher Manning’s values in the Tar Bay area to more accurately account for SAV in the area.
- When Manning’s n was increased, the peak velocities under with-project values decreased by approximately 20-30%.



Storm	Water Level ARI (Yrs)	Point ID #	Existing Condition	Existing w/ Increased Manning's n	Alt P06	Alt P06 w/ Increased Manning's n	Existing Condition	Existing w/ Increased Manning's n	Alt P06	Alt P06 w/ Increased Manning's n
			( Peak Storm Velocity (cm/s) )				( Mean Storm Velocity (cm/s) )			
57	38.7	1976	60.6	-	68.2	-	10.4	-	12.8	-
		18	63.3	-	102.0	-	12.0	-	20.1	-
		1990	72.1	-	70.1	-	14.5	-	13.5	-
58	123.3	1976	66.4	53.0	78.8	62.1	11.9	9.6	14.3	11.4
		18	68.7	52.3	119.5	86.3	15.0	11.3	21.4	16.0
		1990	78.7	54.3	74.4	52.2	15.8	11.1	14.0	9.8
109	81.9	1976	87.9	-	97.4	-	16.0	-	19.4	-
		18	91.9	-	133.6	-	17.7	-	26.7	-
		1990	101.9	-	100.3	-	20.4	-	19.7	-
188	9.6	1976	85.4	66.2	101.4	78.9	11.5	8.9	13.6	10.5
		18	108.2	78.6	178.9	130.2	14.2	10.2	22.7	16.9
		1990	118.9	81.3	110.4	76.1	15.8	10.7	14.5	9.7
199	9.3	1976	40.7	-	52.0	-	7.5	-	10.0	-
		18	52.6	-	78.8	-	10.8	-	16.9	-
		1990	57.0	-	48.1	-	12.9	-	11.4	-
630	6.3	1976	40.5	-	58.7	-	7.3	-	8.2	-
		18	54.9	-	89.1	-	9.2	-	13.2	-
		1990	61.5	-	58.4	-	10.8	-	9.5	-

File Name





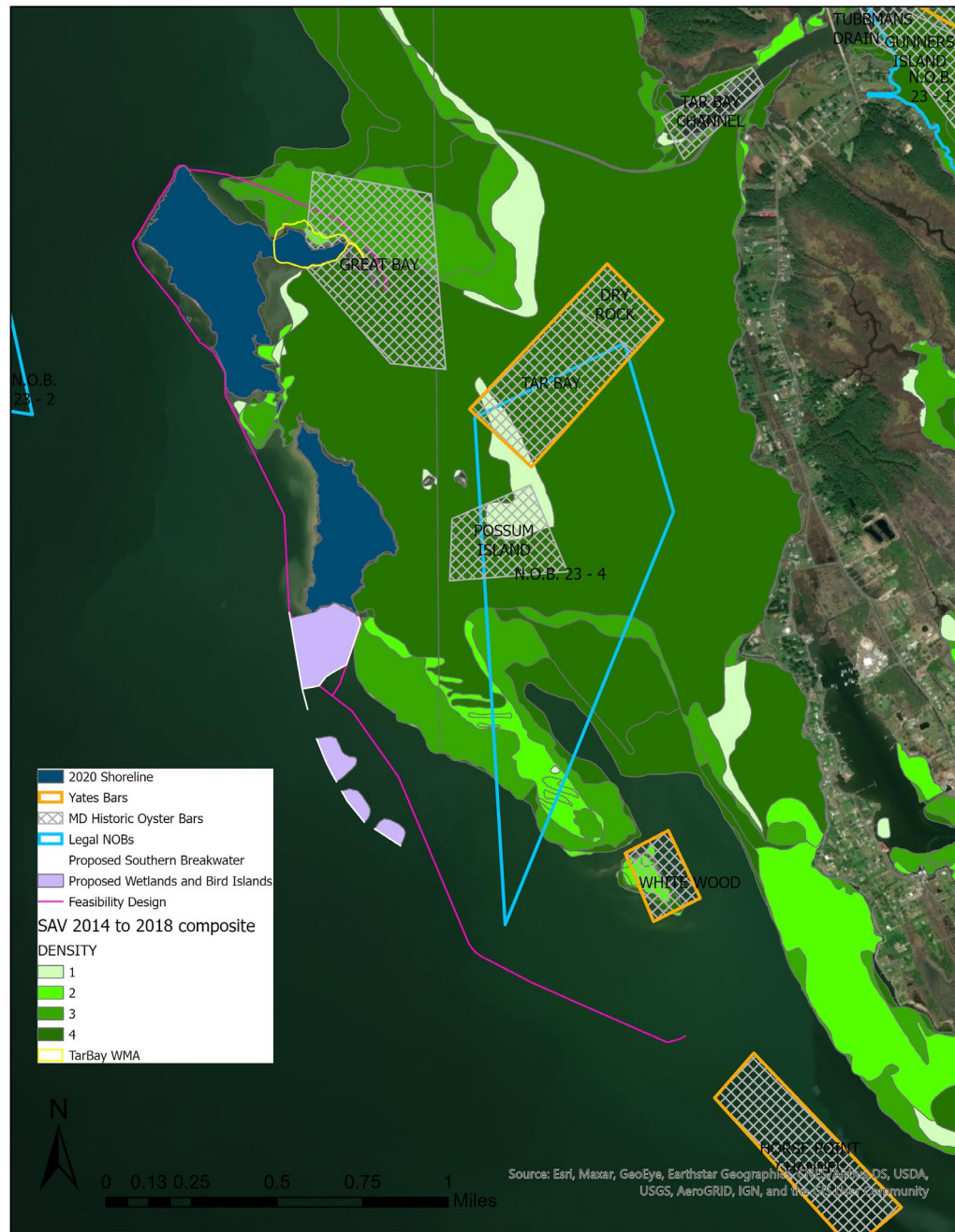
# SUMMARY OF H&H MODELING AND EFFECTS ON SAV

- Proposed design provides for existing conditions or reduced maximum velocities in all areas but Tar Bay
- Affect on maximum velocities increased from north to south
- At locations with increased velocities, velocities still within SAV habitat requirements
- Modeled velocities as presented are likely to be higher than expected (conservative) in SAV beds during the growing season because bed roughness was not factored into the full modeling effort
- Additional work needs to be done to understand the velocities in the Tar Bay area



# ADDITIONAL NEPA CONSIDERATIONS

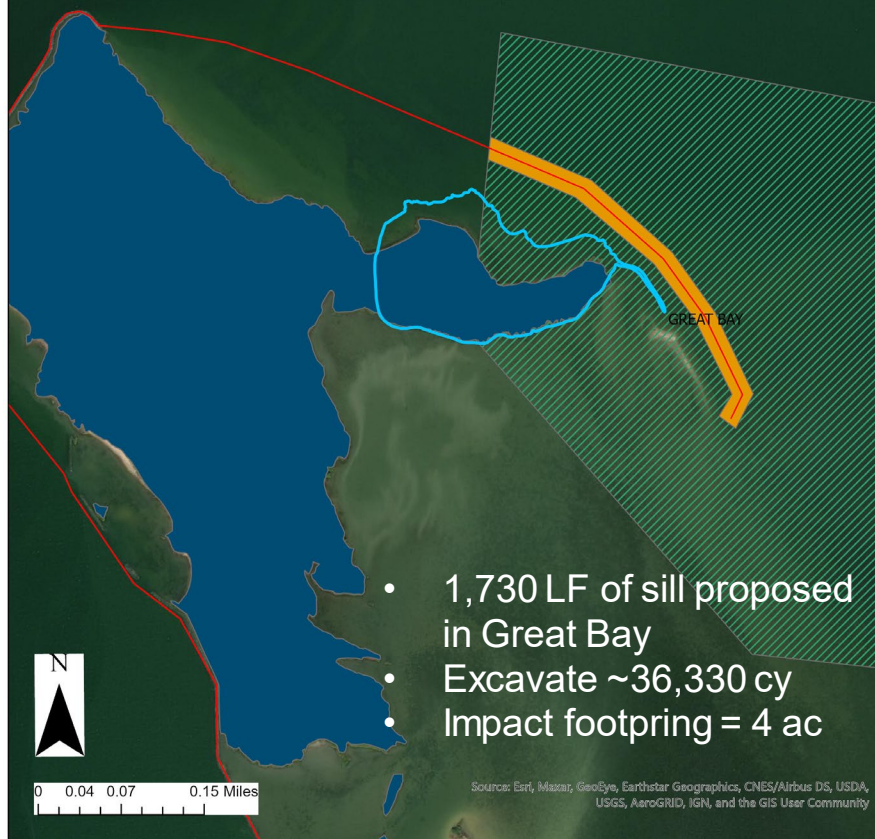
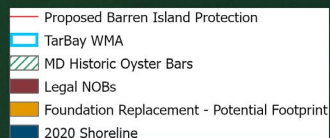
26



# POTENTIAL OYSTER IMPACTS

## Great Bay harvests:

- 10 bushels - 2019



- 1,730 LF of sill proposed in Great Bay
- Excavate ~36,330 cy
- Impact footprint = 4 ac

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Access channel overlaps ~67 ac (5%) of bar

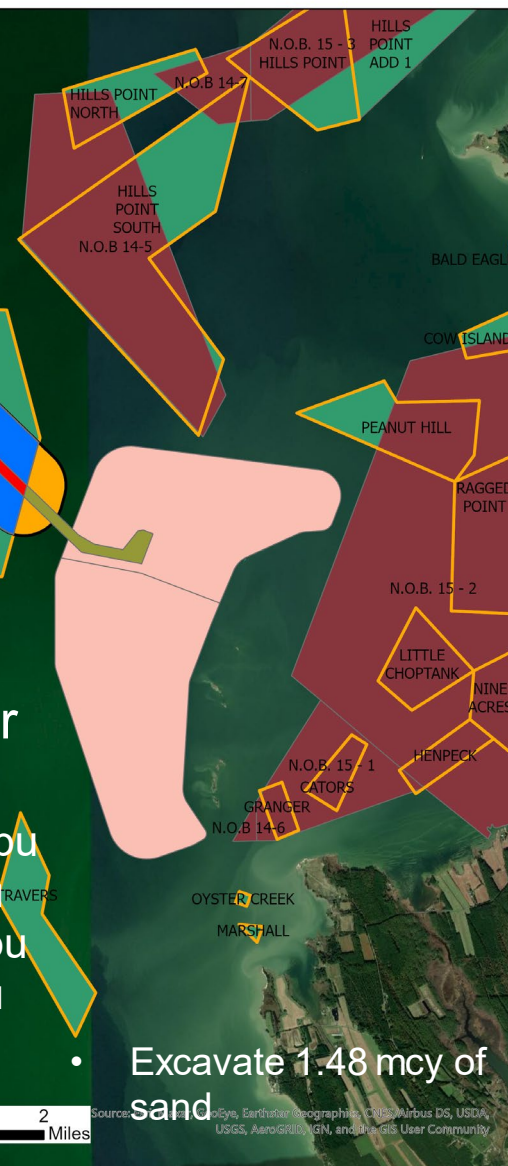
## James Point bar harvests:

- 2013 - 14 = 35 bu
- 2014-15 = 75 bu
- 2015-16 = 184 bu
- 2016-17 = 13 bu



0 0.25 0.5 1 1.5 2 Miles

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

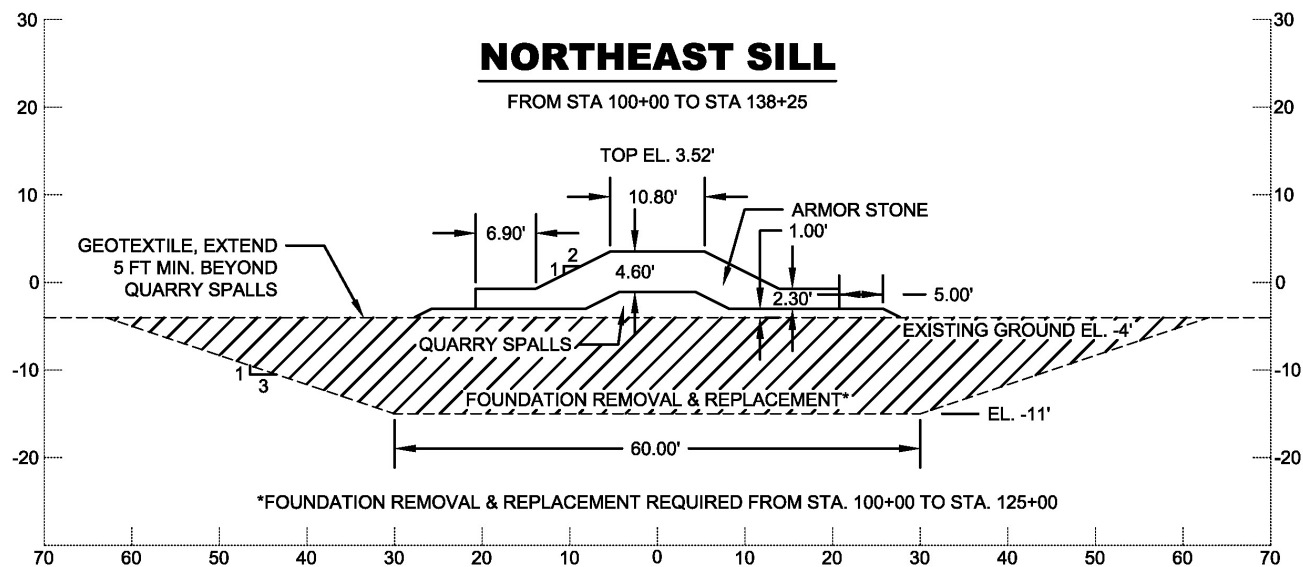


Excavate 1.48 mcy of sand



# BARREN – IDEA – INCORPORATE OYSTERS INTO NE SILL

28



0.33'	MEAN HIGHER HIGH WATER (MHHW)
0.16'	MEAN HIGH WATER (MHW)
0.00'	NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
-0.45'	MEAN TIDE LEVEL (MTL)
-1.06'	MEAN LOW WATER (MLW)
-1.22'	MEAN LOWER LOW WATER (MLLW)

TIDAL DATUMS AT BARREN ISLAND, MD FOR THE  
1983-2001 TIDAL EPOCH\*

NOT TO SCALE

## DATUM NOTES

1. ALL COORDINATES ARE IN FEET AND REFERENCE THE MARYLAND STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. ALL ELEVATIONS ARE IN FEET. UNLESS OTHERWISE NOTED, ALL ELEVATIONS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. TIDAL DATUMS ARE BASED ON A TWO YEAR SERIES (JAN 2001-MAR 2003) USING NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION TIDE STATION 8571579 AS THE CONTROL TIDE STATION.



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## NEXT STEPS

- Further evaluate H&H modeling results in Tar Bay Area
- Complete 35% Design – ***request agencies provide any input by March 5***
- Winter and spring biological surveys
- Continue to work on identifying reference marshes and wetland design criteria
- Coordinate with FWS to confirm they have necessary information for draft PAR
- Begin to draft EA
- Support MES for permitting pre-application process
- Develop wetland restoration sequencing plan
- Discuss expected maintenance needs for bird islands





# AGENCY CHECK-POINTS – BARREN ISLAND COMPONENT

1. Summer 2020 – Initial ERDC modeling for Barren Design Meeting ✓
2. February 2021 – Barren 35% Design Review Meeting ✓
3. March 2021 – Draft PAR provided by FWS
4. Now through July 2021 – Conduct relevant coordination to enable completion of draft EFH assessment, ESA biological assessment, 404(b)(1) Analysis, and Critical Areas Commission response
5. August 2021 – Barren 65% Design Review Meeting
6. December 2021 – Public Review of Barren EA





**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

23 February 2021; 10:30 - 12:00 a.m.

---

Webinar information: <https://usace1.webex.com/meet/angela.sowers>

**Join by phone**

+1-844-800-2712 US Toll Free

+1-669-234-1177 US Toll

Access code: 199 872 1676

**MEETING MINUTES**

***Participants***

USACE: Angie Sowers, Charles Leasure, Chris Johnson, Ray Tracy, Dale Duncan, Ben Fedor, AJ De Rosset

MPA: Dave Bibo, Amanda Penefiel, Holly Miller

MES: Maura Morris, Cassandra Carr, Mindy Strevig

MDNR: Dave Brinker, Roland Limpert, John Moulis, Becky Golden, Laura Sanford, Chris Judy, Erik Zolokowitz

USFWS: Chris Guy, Robbie Callahan, Matt Whitbeck, Amy O'Donnell

MDE: Mary Phipps-Dickerson

NOAA/NMFS: Jonathan Watson, Brian Hopper, Mary Andrews

Audobon: Dave Curson

Angie Sowers presented the project update, reviewed the habitat delineations, alternatives analysis, H&H modeling, considerations for SAV and oysters, next steps, and agency checkpoints (see slide deck and recording).

**Discussion:**

Angie Sowers asked for input about potential maintenance requirements for the bird islands.

- Dave Brinker commented that more details of the design are needed to scope out maintenance needs.
- Dave Brinker stated that based on the survey data he previously provided for the historic islands to the south of Barren, those islands that were the furthest from Barren supported higher numbers of birds. He suggested increasing the distance of the islands from Barren.
  - Angie Sowers replied that we can further consider that. The current 100 m distance in the design was based on prior feedback from the resource agencies. The objective is also to use the islands in place of a breakwater to support SAV habitat conditions so both the bird habitat and benefit to SAV are objectives to balance.
- Chris Guy – long-term control of vegetation will likely require periodic use of herbicide at a time when application is not detrimental to bird communities. We will likely need to

identify success metrics for the bird islands as we would for the wetlands. One metric could be a trigger for herbicide application, i.e. when a certain percent cover of vegetation is reached.

- The group discussed suitable substrates for the bird islands:
  - Oyster shell is a great substrate to support nesting. Pro: substrate used historically by nesting communities. Con: availability and its degradation releases free calcium which supports vegetation growth
  - Angie Sowers mentioned the mixed shell available from NJ Atlantic coastal fisheries. Chris Guy had also been thinking of this material.
  - Dave Corson added that Audubon and DNR are developing floating bird islands in the Coastal Bay with a clam shell surface.
  - Dave Brinker stated that based on its chemical composition, clam shell would likely be more suitable than oyster shell because when clam shell degrades it releases less free calcium (by which it would not be as beneficial to vegetation growth).
  - Chris Guy will provide size range of material from Fire Island project.
  - Pea gravel was shown to not be a good source due to heat capture.
- Group discussed design depth of substrate
  - It was decided 12 inches is preferred
  - AJ – costs could be a concern
  - Chris Guy stated that if costs becomes a concern USACE should ask the agencies to research the suitable depth further to refine the design recommendation.
  - Angie shared that she has costs from the use of the mixed shell through the oyster program to build 12” reefs.
- Jonathan Watson – requested a characterization of the sediments in the Honga River channel and for the NE sill. Angie will follow-up with our geotechnical team members. Jonathan also asked if training dikes would be utilized.
- Angie requested any further input relevant to the 35 % design to be provided by March 5.



**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

6 December 2021  
12:30 - 2:00 p.m.

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Webinar information: <https://usace1.webex.com/join/charles.w.leasure>

**Join by meeting number**

Meeting number (access code): 1996 30 1563

**Join by phone**

+1-669-234-1177 US Toll

+1-844-800-2712 US Toll Free

Access code: 1996 30 1563

1. Introductions
2. Schedule
3. Status Update
4. Barren Island – 65% design
5. Biological Survey Results
6. Next Steps

# MID-CHESAPEAKE BAY ISLANDS ECOSYSTEM RESTORATION PROJECT

## DESIGN PHASE AGENCY COORDINATION UPDATE

Angie Sowers

USACE - Planning

6 December 2021

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



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# AGENDA

1. Introductions
2. Schedule
3. Status Update
4. Barren Island – 65% design
5. Biological Survey Results
6. Next Steps

*“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”*



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# SCHEDULE

## *Barren*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- Award AE contract – summer 2020 – MOVED in-house
- ERDC modeling – summer 2020 – COMPLETE
- 35% Design Complete– COMPLETE
- 65% Design Complete – COMPLETE
- NEPA: EA Public Review – December 2022
- Signed FONSI – March 2022
- Request CG (construction general) appropriations for FY22
- Construction begins – summer 2022

## *James*

- Development of survey and sampling scopes – winter 2019/2020 - COMPLETE
- ERDC modeling and in-house design – 2021 through winter 2023
- NEPA – summer/fall 2021 to summer 2022
- Draft Design Document Report (DDR) – winter 2022
- Request CG appropriations for FY24
- Construction begins – summer 2024



# PROGRESS SINCE FEBRUARY MEETING

## ➤ Engineering

- Contracting of sampling for borrow area and supplemental survey
- Completion of 65% Design

## ➤ NEPA

- Completion of all surveys and data analysis
- Preparation of draft supplemental EA (sEA) and internal reviews
- Public release of draft sEA in early December

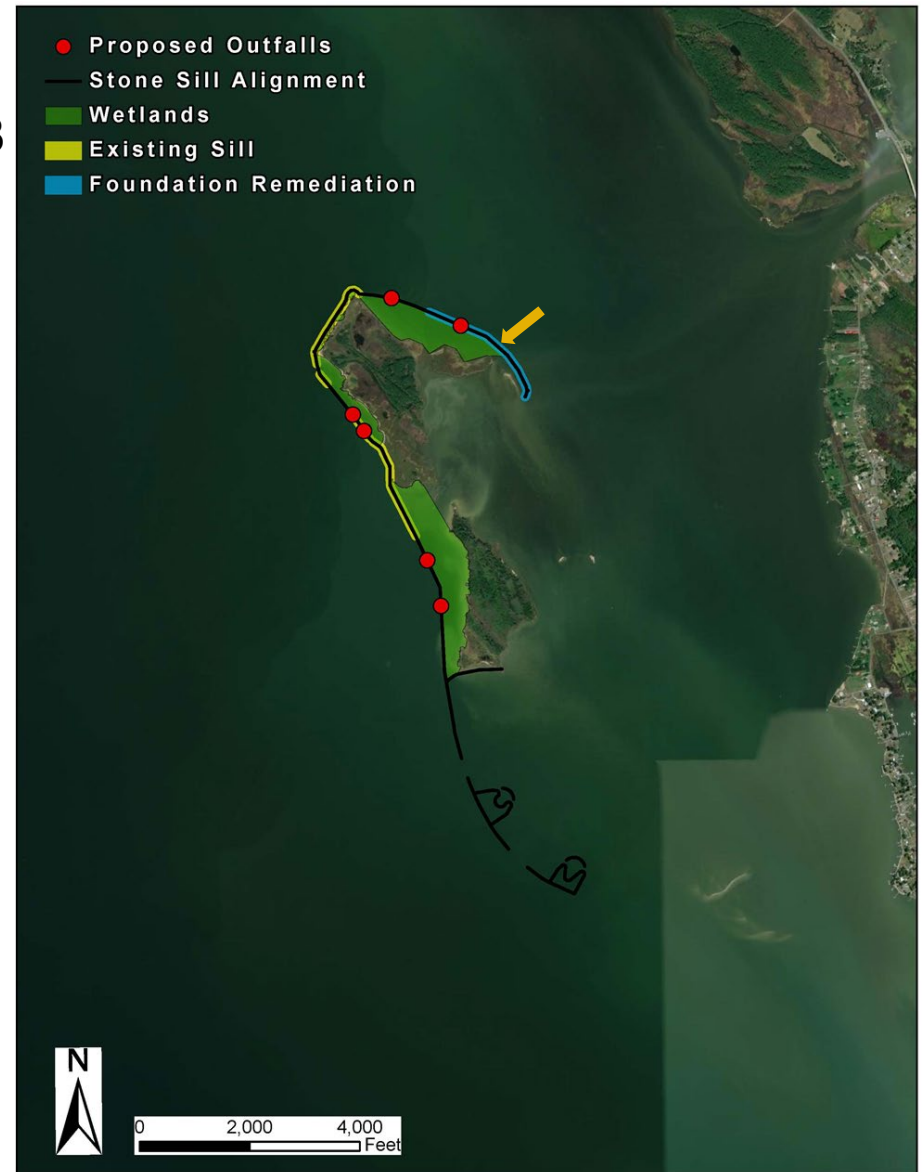
## ➤ Public and Agency Coordination

- 31 March – Joint Evaluation Committee Meeting – virtual
- 3 May – Submittal of the Joint Permit Application (JPA) for the Tidal Wetlands License (21-WL-0640)
- 19 May – MPA Spotlight Series – virtual meeting
- 16 June – Dorchester County Watermen Meeting – in person
- 22 October – JPA and Water Quality Certificate on public notice
- 3 November – Water Quality Certificate in Maryland Register
- 6 November – Mid-Bay Community Meeting – in person
- 18 November – WQC request sent to MDE



# 65% DESIGN

- 13,023 lf of sill – built to +6 ft NAVD88
  - modification of 4,850 lf of current sill
  - creation of 8,173 lf of new sills
- 4,620 lf of breakwater – built to +8.5 ft NAVD88
- 2 bird island (8.5 acres total)
- Approximately 83 acres of wetland and intertidal mudflats
- The design accommodates sea level rise through 2072 using the USACE high SLR curve which corresponds to the 2125 intermediate SLR curve
- In progress
  - Potential shortening of northeast sill
  - Identification of borrow area



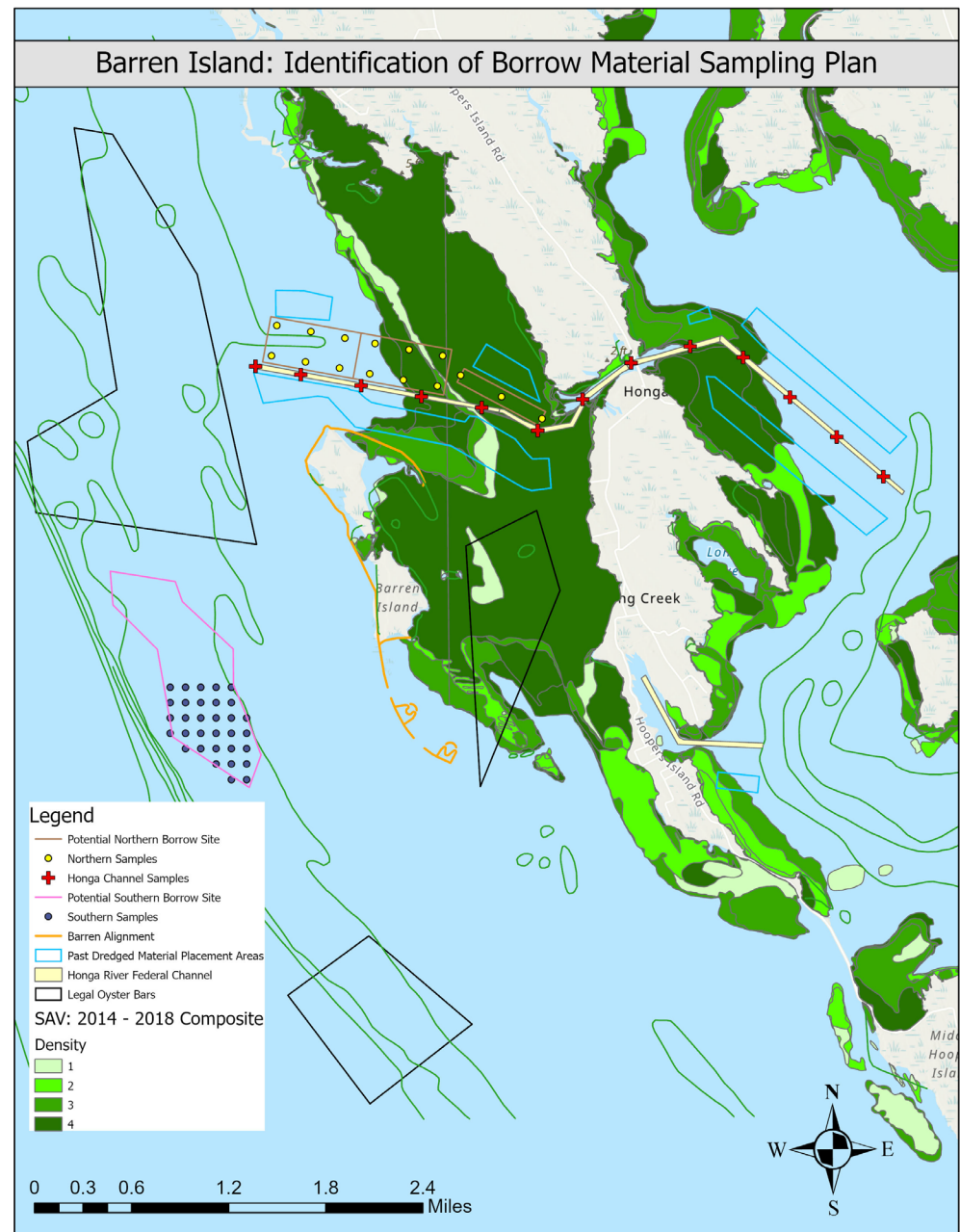
## Southern borrow area

- *Pros* – information identifies borrow material available, avoid impacts to SAV
- *Cons* – impacts to commercial fishing and crabbing

## Northern borrow area

- *Pros*- dredging in this area could potentially help with navigation; avoid impacts to fishing
- *Cons* – presence of suitable material unknown, project funding cannot be used to simply dredge the Honga River channel, potential SAV conflicts

Sampling should be complete by February 2022





# BIOLOGICAL SURVEYS - STATUS

## James and Barren Island

Survey Type	Spring 2020	Summer 2020	Fall 2020	Winter 2020 - 2021	Spring 2021	Summer 2021
Water Quality/Nutrient		√	√	√	√	
Benthic Invertebrate		√	√		√	
SAV	√				√	
<b>Fisheries</b>						
Bottom Trawl		√	√	√	√	
Beach Seine		√	√	√	√	
Gillnet		√	√	√	√	
Pop Net		√			√	
Soft-shell and Razor Clam			√			
Pound Net Telephone Survey			in progress			
Commercial Harvest Data Collection				in progress		
Crab Pot Survey		√			√	
<b>Avian</b>						
Avian surveys - point counts		√			√	
Avian surveys - wetlands - SHARP					√	√
Avian surveys - passive listening counts/flushing survey				√		√
Predatory mammals				√		√

Completed by Anchor QEA

Completed through FWCA - FWS or subcontractor (Audubon or APHIS)

Completed by MDNR

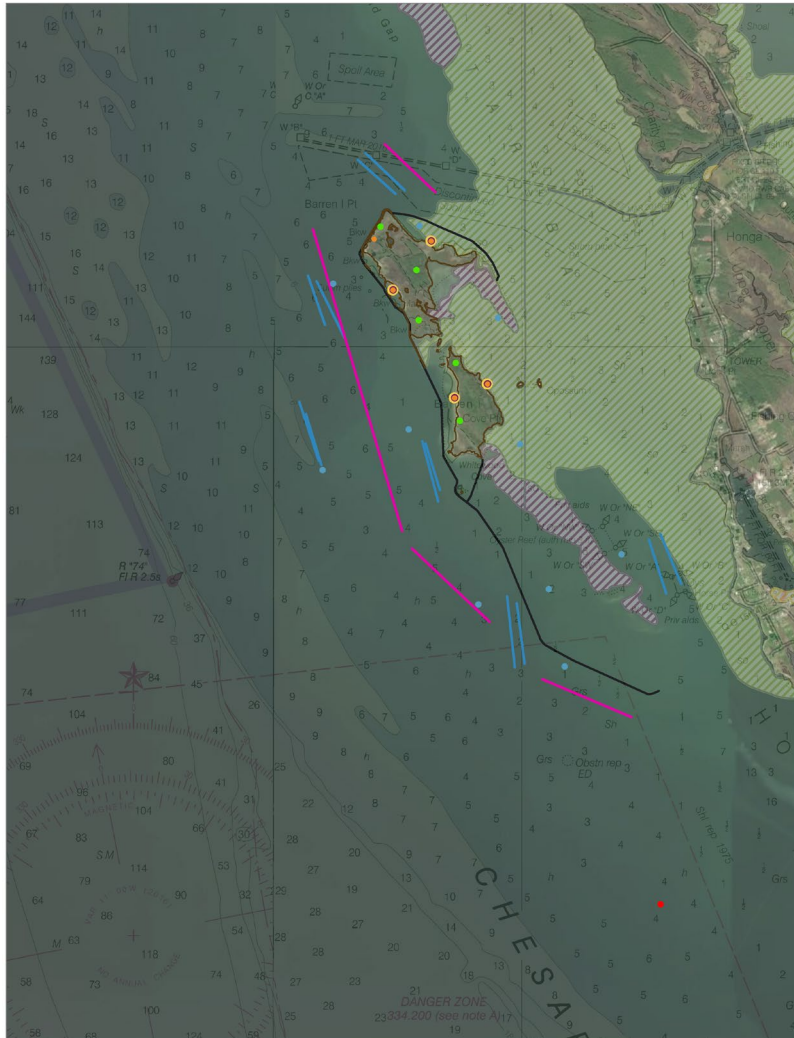


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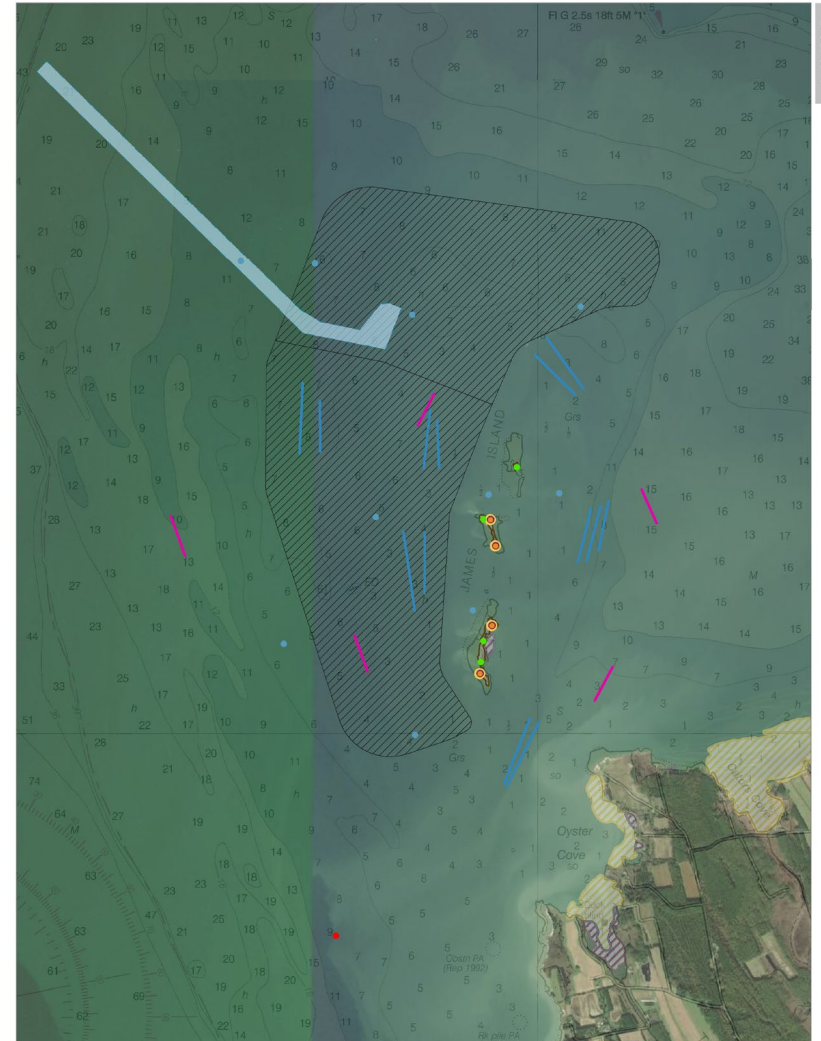
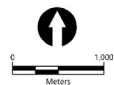
# JAMES AND BARREN SAMPLING POINTS (ANCHOR QEA)

8



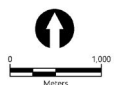
- LEGEND:**
- Avian Survey
  - Beach Seine Sampling
  - Gillnet Survey
  - Pop Net Survey
  - Water Quality Survey
  - Soft-Shell and Razor Clam Survey
  - Fisheries Trawls
  - Barren Island Remnants
  - Proposed Barren Island Protection
  - Existing SAV Bed
  - Dense 70-100% cover
  - Moderate 40-70% cover
  - Sparse 10-20% cover

**NOTES:**  
1. Basemaps obtained from Esri aerial imagery and NOAA raster nautical charts streaming services.



- LEGEND:**
- Avian Survey
  - Beach Seine Sampling
  - Gillnet Survey
  - Pop Net Survey
  - Water Quality Survey
  - Soft-Shell and Razor Clam Survey
  - Fisheries Trawls
  - James Island Remnants
  - Proposed James Island Access Channel
  - Proposed James Island Alignment
  - Existing SAV Bed
  - Moderate 40-70% cover
  - Sparse 10-20% cover
  - Very Sparse 0-10% cover

**NOTES:**  
1. Basemaps obtained from Esri aerial imagery and NOAA raster nautical charts streaming services.





# BIOLOGICAL SURVEY - RESULTS

## ➤ SAV

- *Spring 2020*
  - Only widgeongrass; only in 5% (10 of 196 quadrats)
- *Spring 2021*
  - Sparse and patchy areas of widgeongrass were identified along areas of the northeastern shoreline, near the tip of the Tar Bay WMA
  - *Horned pondweed and widgeongrass* identified in waters between remnants
  - One patch of widgeongrass behind existing sills on northwest
  - One patch of horned pondweed and one patch of widgeongrass in southern transects
- *Summer 2021*
  - Patches of *widgeongrass found in all transects* – northeast, central, southeast, and west
  - Percent cover ranged from 0 to 75%
  - *Most consistent habitat on eastern half of central transects surveyed between island remnants*



## ➤ BENTHICS

- Benthic macroinvertebrate assemblage in the Barren Island area is *typical of mesohaline, shallow Bay waters*
- Eight out of ten monitoring locations at Barren were *comprised of more than 50% sand*; the other locations were comprised of predominately silts and clays
- Salinities > 12 ppt (all but one point classified as high mesohaline; one as low mesohaline)
- Number of unique benthic species: summer = 33 , fall = 34 and spring = 53
  - Dominant species - *Bivalves* (specifically *Ameritella mitchelli*, *Gemma gemma*, and *Mulinia lateralis*) and *polychaetes* (specifically *Alitta succinea* and *Mediomastus ambiseta*)
- Metrics identified *a diverse community*
- *B-IBI scores have decreased since feasibility*
  - Calculated B-IBI scores were low for all monitoring locations for summer 2020, fall 2020, and spring 2021 ranging from 1.8 to 2.9, with 3 exceptions
    - 3 sites classified as meeting restoration goals (marginal)
  - All but 3 sites classified as *degraded or severely degraded*





## ➤ FISH

### • Beach seine

- 22 different species of fish and 1 invertebrate were collected
- Fall 2020 survey - greatest number of individuals collected
- Winter 2021 - lowest number of individuals observed
- Bay anchovy (*Anchor mitchilli*) and Atlantic silverside (*Menidia menidia*) were *overall the most abundant species, similar to the 2002-2003 results*
- Compared to the 2002-2003 results, 15 new species of fish (either new detection or expanded seasonally) were captured using this method, and 21 species detected in the Feasibility Report surveys were not captured in 2020-2021
  - New species observed: cownose ray, gizzard shad, harvest fish, inland silverside, Northern kingfish, Northern pipefish
- Except for the 2020 fall survey, *the 2020-2021 surveys captured a smaller number of species and individuals compared to the 2002-2003 surveys*



## ➤ FISH (CONTINUED)

- Bottom trawling

- Compared to the 2002-2003 results, six new species of fish were captured; 13 species detected in the feasibility surveys were not captured in 2020-2021
  - New species: blackcheek tonguefish, gizzard shad, spot, spotted hake, butterfish
- Spring 2021 survey resulted in the most individuals collected,
- Fall 2020 resulted in the lowest number of individuals collected
- *Bay anchovy and spot (Leiostomus xanthurus)* were among the *most abundant species captured*
- With the exception of the 2021 spring survey, *the 2020-2021 surveys captured a smaller number of species and individuals as compared to the 2002-2003 surveys*



## ➤ FISH (CONTINUED)

- Gill netting

- Compared to the 2002-2003 results, seven new species (by season) of fish were captured; 17 species detected in the feasibility surveys were not captured during the 2020-2021 surveys
  - New species: gizzard shad, harvest fish, Northern sand lance, Spanish mackerel,
- Summer 2020 survey resulted in the most individuals collected,
- Spring 2021 resulted in the lowest number of individuals observed
- Similar to the results of the 2002-2003 surveys, *Atlantic menhaden and spot were among the most abundant species captured*
- *The 2020-2021 surveys captured a smaller number of species and individuals as compared to the 2002-2003 surveys*



## ➤ FISH (CONTINUED)

- Pop net
  - Only used for sampling in spring and fall 2003, as well as in summer and spring 2020-2021
  - *Bay anchovy - most abundant species identified*
  - New species observed: spot
  - Seven species detected in the feasibility surveys were not captured in 2020-2021.
  - Spring 2021 survey revealed a steady decline in most species identified in previous surveys using this method
  - *2020-2021 surveys captured a smaller number of species and individuals as compared to the 2002-2003 surveys*



## ➤ FISH (CONTINUED)

- Species caught in the 2020–2021 fisheries surveys were typical of mesohaline areas of the mid-Chesapeake Bay Region
- Area around Barren Island is attracting fish in the juvenile and adult life stages
- *Overall species diversity appears to have decreased slightly from the 2002–2003 fisheries surveys*
- Summer flounder (*Paralichthys dentatus*) were not detected by any of the surveys in 2020–2021 (beach seine, bottom trawl, or gill net) that had identified their presence in 2002–2003
- Although survey results were similar, the 2002–2003 fisheries surveys reported greater number of species for all sample gear types
- Bay anchovy, Atlantic menhaden, and Atlantic silverside continue to be present in the greatest numbers
- New species documented: gizzard shad, harvest fish, inland silverside, Northern kingfish, Northern pipefish, spotted hake, butterfish, blackcheek tonguefish, Northern sandlance, Spanish mackerel, cownose ray
  - Other species documented in new seasons





## ➤ BIVALVES

- Soft-shell and razor clam surveys identified *razor clams as more prevalent than soft-shell clams*
- 15 legal soft-shell clams (no soft-shell clams less than 2 inches in length were identified), 267 razor clams, and 25 oysters
- *No locations identified with a productive natural clam bar* ranking as defined by the Maryland Code of Regulations (COMAR) 08.02.08.11 criteria



## ➤ BLUE CRAB SURVEYS

Date of Survey	Number of crab pots observed	Primary location of crab pots
August 30, 2020	499	South; some west and north
September 29, 2020	83	South of southern remnant
May 18, 2021	533	North and southeast
June 23, 2021	277	West and north
July 22, 2021	264	West and north; some south



## ➤ BIRDS

- Various surveys completed
  - APHIS – Jan, Feb, March, April, Aug, Sept, Oct 2021 – point counts (8 points for 5 minutes), flush surveys (4 surveys), and opportunistic surveys
  - Anchor QEA – Sept 2020 and May 2021 – point count (5 points for two 15-minutes)
  - Audubon - SHARP – May and June 2021 - point count survey including call broadcasts
- Across all surveys: identified 91 species and 5,451 individuals
- *The number of individuals and species were higher in 2020 and 2021 surveys compared to those conducted in 2002 and 2003.*
  - Likely influenced by large numbers of double-cormorant



## ➤ BIRDS (CONTINUED)

- *Clapper rail* common in SHARP surveys
- Multiple raptor nests including a *bald eagle nest* on each remnant
- Fourteen species were confirmed as breeding on the two Barren Island remnants, and several other species were observed that are likely to breed on the island.
- Nearly the entire southern remnant serves as a rookery for great blue heron and great egret
- No seaside sparrows or saltmarsh sparrows were identified by the SHARP surveys, but one *seaside sparrow* was identified in the August point count survey and one in each of the September and October flush survey (APHIS, 2021)
- Other species of interest identified: American black duck, semipalmated plover, marsh wren, and state listed - least tern, royal tern, common tern, and American bittern



## ➤ MAMMALS AND HERPETOFAUNA

### Mammals observed:

#### Camera capture:

	Survey Month (2021)		
Species	January	February	March
Red Fox	√	√	√
River Otter		√	
White-tailed Deer	√	√	√

#### Opportunistic survey

	Survey Month (2021)					
Species	January	February	March	April	August	Total
Muskrat	scat					
Red Fox	1					1
River Otter		1				1
White-tailed Deer	1					1

### Herpetofauna observed:

	Survey Month (2021)							
Species	January	February	March	April	August	September	October	Total
Black Racer				1				1
Black Rat Snake	1							1
Diamondback terrapin							1	1
Eastern Box Turtle		1		1				2
Mud Turtle				1				1
Musk or Mud turtle shell				1				1
Spotted Turtle		2	2	5				9
<b>SURVEY TOTAL</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>16</b>



US Army Corps  
of Engineers.





# WRAPPING UP BARREN ISLAND NEPA AND DESIGN EFFORTS

- Complete Public and Agency Technical Review – January
- Address comments received - January
- Complete Permitting, Receive WQC – late spring
- Complete NEPA – signed FONSI – March
- Final Design – June 2022
- Award Construction Contract – spring 2022
- Construction Begins – summer 2022
  
- Then, on to James Island...





**Mid-Bay Island Ecosystem Restoration Project  
Design Phase  
Agency Coordination Update**

6 December 2021; 12:30 - 2:00 p.m.

---

**MEETING MINUTES**

***Participants***

USACE: Angie Sowers, Charles Leasure, Chris Johnson, Trevor Cyran, Ben Fedor, AJ De Rosset

MPA: Dave Bibo, Amanda Penefiel

MES: Maura Morris, Cassandra Carr

ANCHOR QEA: Karin Olsen

MDNR: Dave Brinker, Roland Limpert, Becky Golden, Erik Zolokowitz, Becky Thur

USFWS: Robbie Callahan, Matt Whitbeck, Amy O'Donnell

MDE: Mary Phipps-Dickerson, Heather Nelson, Danielle Spendiff, Tammy Roberson, Jon Stewart

NOAA/NMFS: Jonathan Watson, Mary Andrews

Audobon: Dave Curson

A. Sowers presented the project update, reviewed the progress since the last meeting in February, the current (65%) design, the results of the biological surveys, and next steps. (See slide deck)

**Discussion:**

- B. Thur, MDNR will provide the locations of three oyster leases within the project vicinity to consider for potential impacts from sedimentation.
- E. Zolokowitz, MDNR suggested that the southern breakwater/bird island should be marked in some way for navigation and safety. A. Sowers responded that the team had discussed this previously and thought it was a good idea. The team will further consider and make a decision.
  - Erik also pointed out that the salinity conditions during the biological surveys would likely affect the results. That is, more species and diversity would be expected under higher salinity conditions during a dry year. Also, water clarity would be better during a dry year.
- M. Phipps-Dickerson, MDE clarified that a major modification to the permit will be needed to include the borrow area once the location is determined. The team concurred and is tracking this process.
- T. Roberson, MDE communicated that the date of January 2022 in the presentation for the permit and WQC is not consistent with the application schedule. The tidal license is currently out for public review and then needs to go to the Board of Public Works. The correct target date should be late spring. D. Bibo, MPA asked T. Cyran, USACE, asked how this would affect the Project Partnership Agreement (PPA) schedule. The WQC is required to complete the PPA. T. Cyran replied that late spring is still achievable, but the

permits must be received by that time. M. Morris, MES, clarified prior discussions with MDE regarding the WQC schedule. It is anticipated that the WQC could be provided prior to the TL. A. Sowers, USACE, added that receipt of the WQC in January/February is needed to enable the FONSI to be signed by the March target date.

- J. Watson, NMFS, asked for a further review of project features to enhance fisheries habitat. A. Sowers, USACE, replied that the following features are being considered or included:
  1. Rock reefs offshore of the bird island coves
  2. Eastern-oriented tidal channels into the northeast and central/south wetland cells
  3. Planting oyster seed or spat-on-shell on the eastern face of the northeast sill
- J. Watson asked about the northeast sill and the considerations being made regarding shortening the sill to address velocities. A. Sowers replied that the northeast sill is under consideration to be shortened due to 3 factors: 1. The modeling results for 2 of the modeled 25 storms indicate that velocities would exceed the metric established by the project team for suitable SAV habitat (100 cm/s) in waters to the east of the southern end of the northeast sill. There is a long fetch across shallow water off the northeast sill. The waves rebound off the modeled sill and increase velocities, potentially impacting SAV habitat. Shortening the sill would reduce the area potentially affected by increased velocities. 2. The northeast sill required foundation replacement and shortening its extent would minimize that impact from the project, and 3. The alignment currently shown in the design is from the feasibility study (2000s) when Tar Bar Wildlife Management Area (WMA) was more extensive in size. The alignment was drawn to wrap around the eastern shoreline of Tar Bay WMA. However, since that time, Tar Bay WMA has eroded and does not extend as far to the south. Therefore, a shortened sill could provide the desired shoreline protection sought while reducing impacts from foundation replacement and increased velocities.
- R. Limpert asked about the quantity of material needed to be supplied by the borrow area. A. Sowers replied that she did not have the number readily available but clarified that the full quantity would not be needed at one time. Sand is needed for bird island habitat development, interior wetland dikes, and foundation replacement. The plan is to dredge the sand as needed based on the phase of the project.



# Mid-Chesapeake Bay Island Ecosystem Restoration Project

## *Barren Island Construction*

Joint Evaluation Committee Meeting  
March 31, 2021



# Agenda

## 1. Mid-Bay Project History

- Location
- EIS Review
- Recommended Plans
- Project Purpose

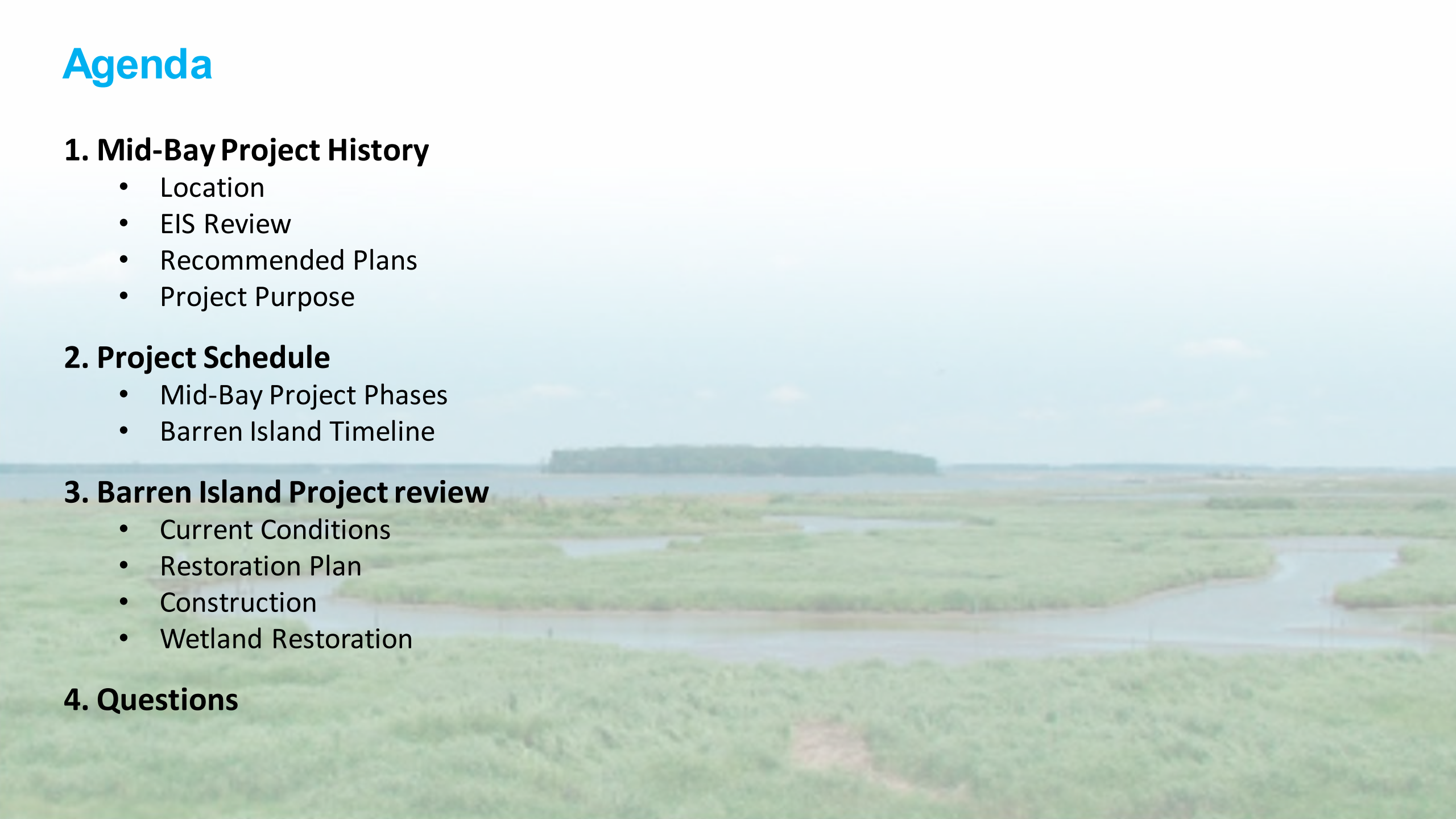
## 2. Project Schedule

- Mid-Bay Project Phases
- Barren Island Timeline

## 3. Barren Island Project review

- Current Conditions
- Restoration Plan
- Construction
- Wetland Restoration

## 4. Questions





# Project History

# Project Location



James Island



Barren Island



# Mid-Bay Integrated Feasibility Report and Environmental Impact Statement (2008)

- Mid-Bay Integrated Feasibility Report and Environmental Impact Statement

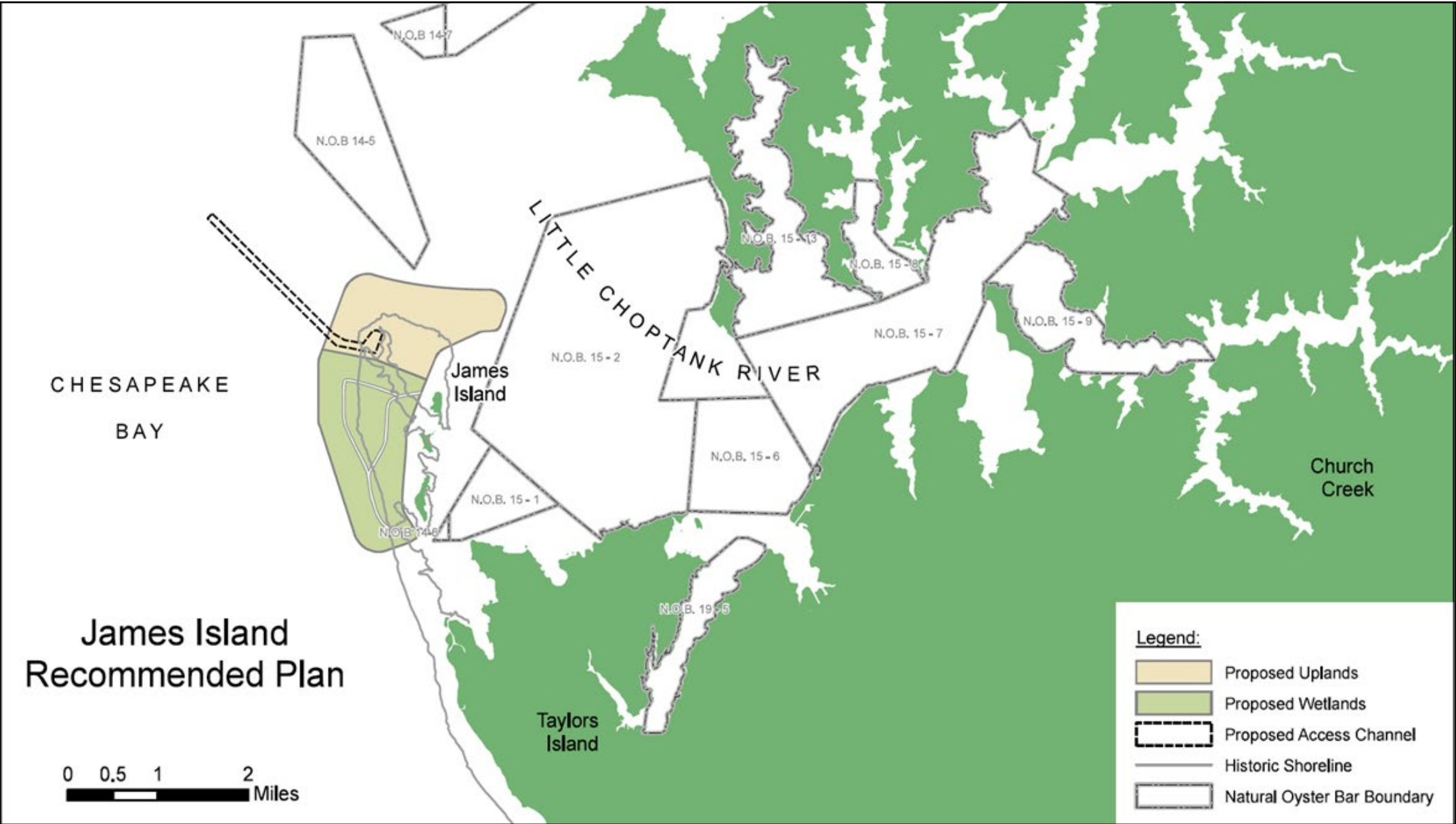


- 105 Potential Island Location → 2 Islands

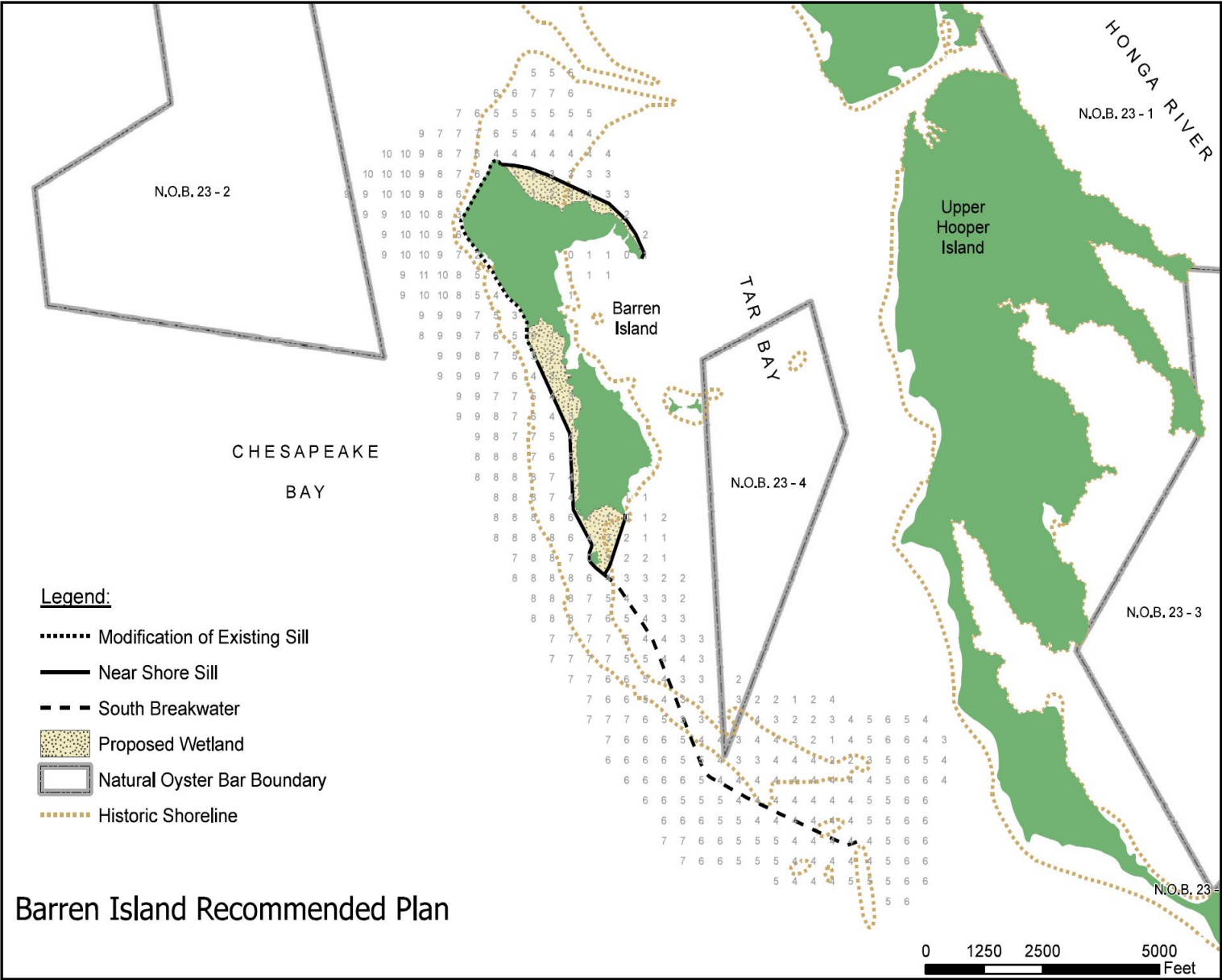


- 2 Islands → 29 Alignments

# James Island – Recommended Plan



# Barren Island – Recommended Plan





## Project Purpose

- Restore and protect wetland, aquatic, and terrestrial island habitat for fish, reptiles, amphibians, birds, and mammals;
- Protect existing island ecosystems to prevent further loss of island and aquatic habitat;
- Provide dredged material placement capacity for Federal navigation channels;
- Increase wetlands acreage in the Chesapeake Bay watershed
- Decrease local erosion and turbidity;
- Promote conditions to establish and enhance submerged aquatic vegetation; and
- Promote conditions that support oyster recolonization.

# Project Schedule

## Mid-Bay Project Phases

- Reconnaissance and Feasibility Studies – Identified Recommended Plans – Completed 2008
- Pre-Construction Engineering and Design – 2020-2024
- Sill and Breakwater/Exterior Dike Construction Following PED Phase & Funding Availability – ~2022-2028
- Continued Construction (including habitat development) and Operations and Maintenance Activities - ~2024-2065

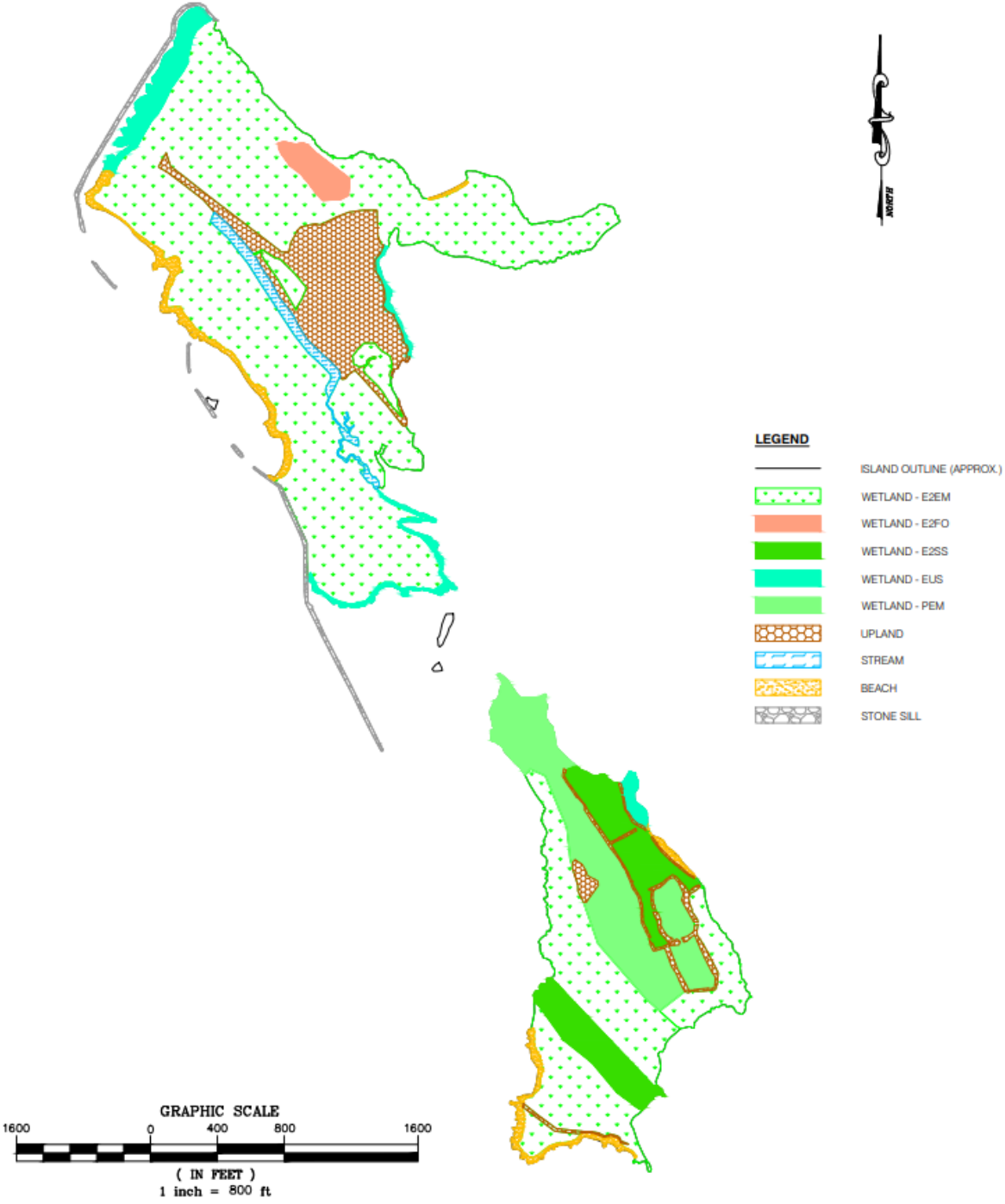
## Barren Island Schedule

- Environmental Surveys – Summer 2020 – Spring 2021
- ERDC modeling – Summer 2020 – Current
- Permitting – April 2021 – April 2022
- 35% Design Complete – April/May 2021
- 65% Design Complete – October 2021
- NEPA: EA Public Review – December 2021
- Signed FONSI – March 2022
- Construction Begins – Summer 2022

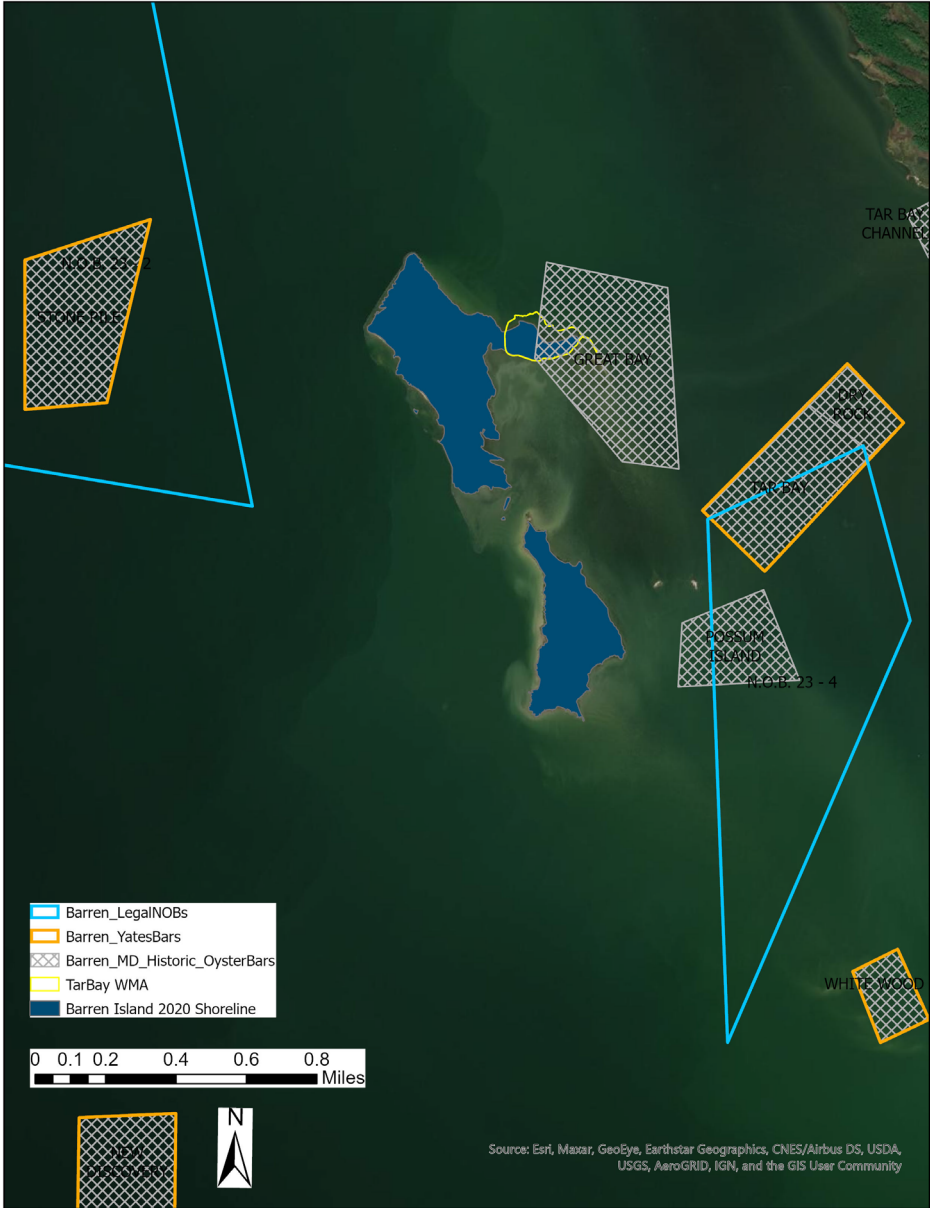
# Project Overview



# Current Conditions



# Current Conditions

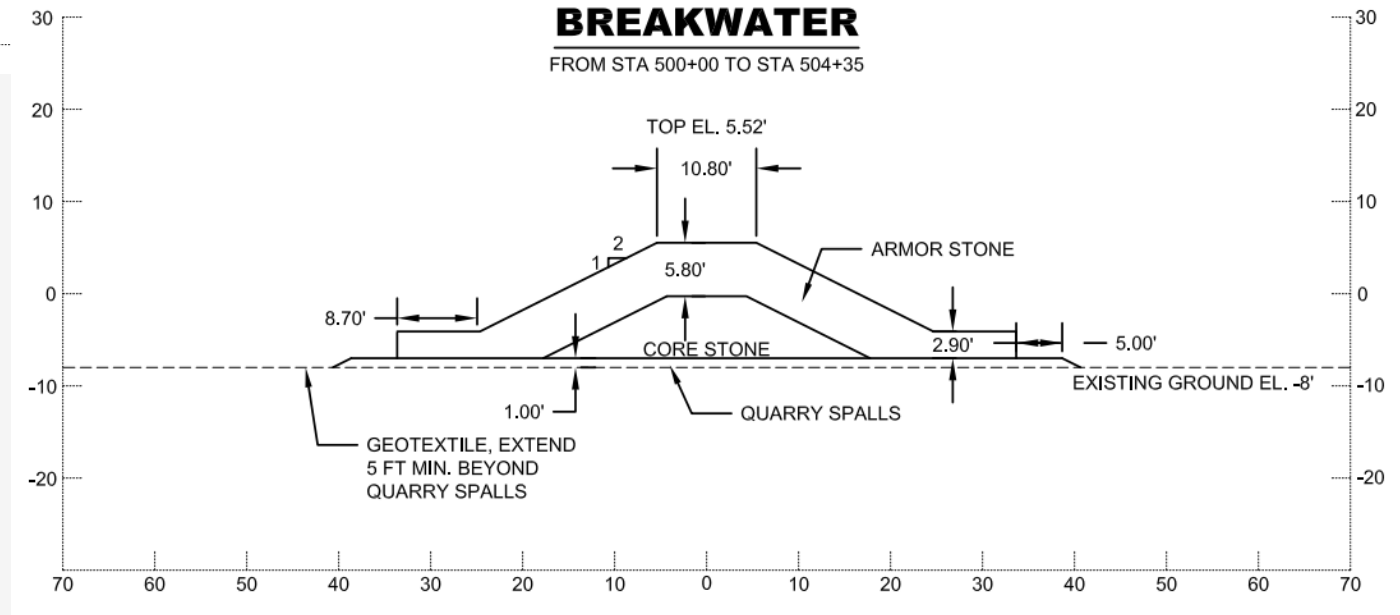
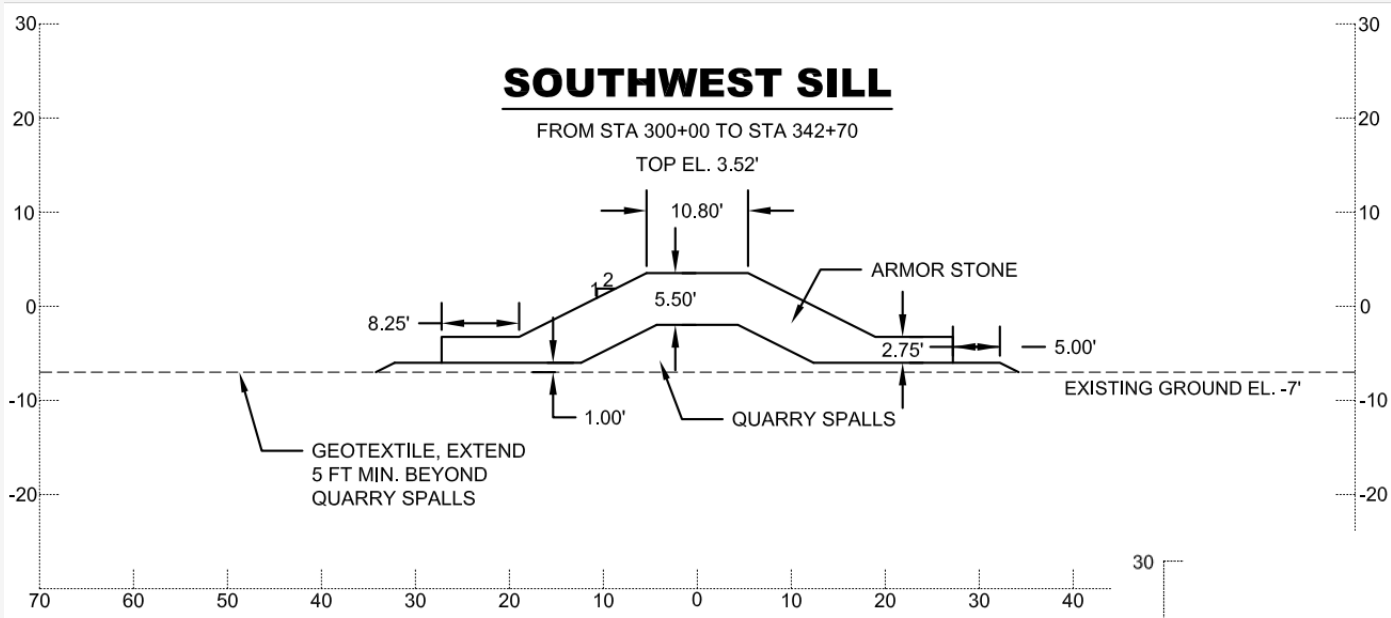


# Barren Island Restoration Plan

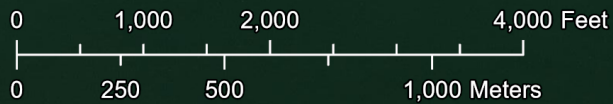
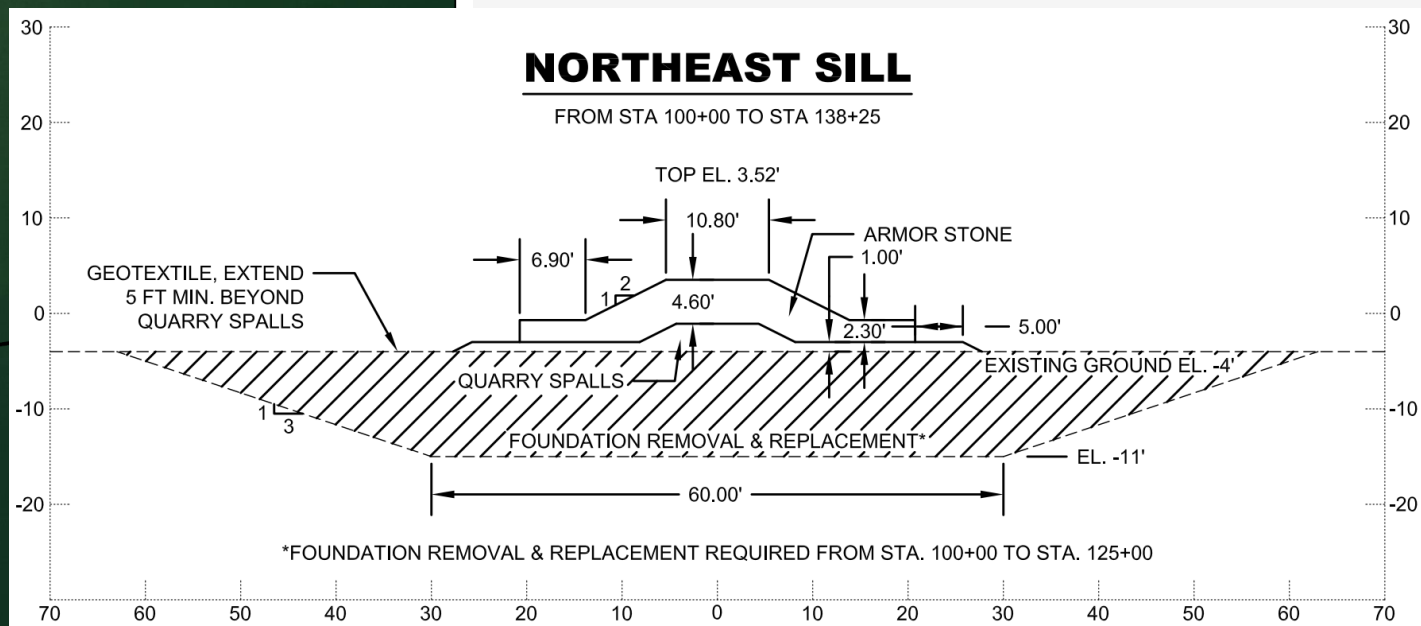
- 13,023 linear feet of sill
- 2,506 linear feet of breakwater
- 2 bird island (8.5 acres total)
- Minimum of 65 acres of wetland and intertidal mudflats








# Sill and Breakwater Construction Cross Sections



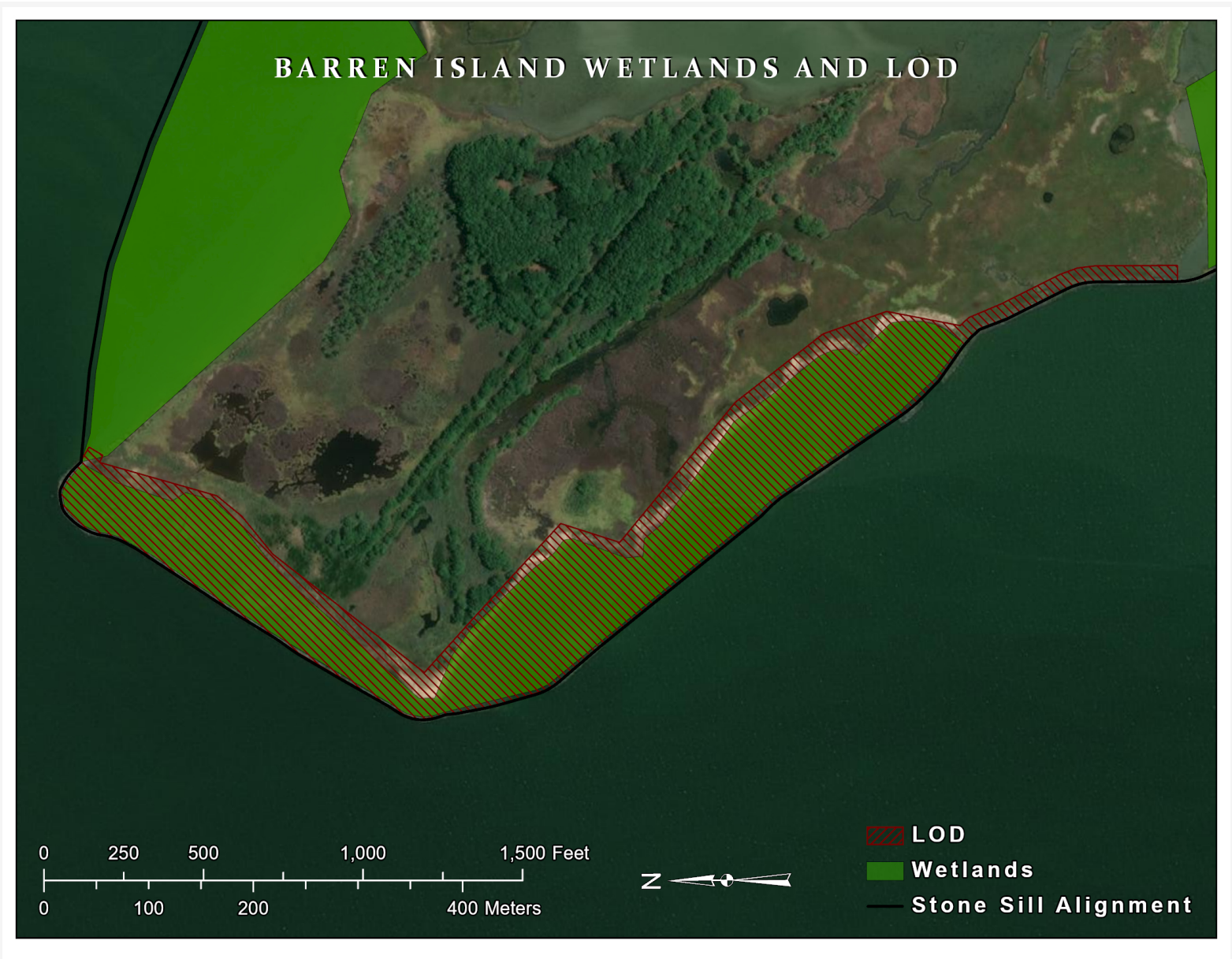
# Foundation Replacement



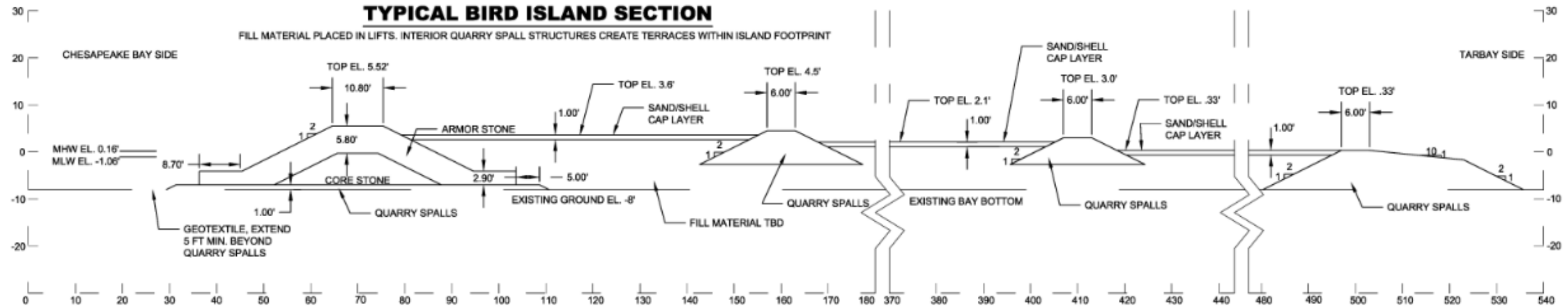
-  **Wetlands**
-  **Bird Islands**
-  **Existing Sill**
-  **Foundation Remediation**
-  **Stone Sill Alignment**



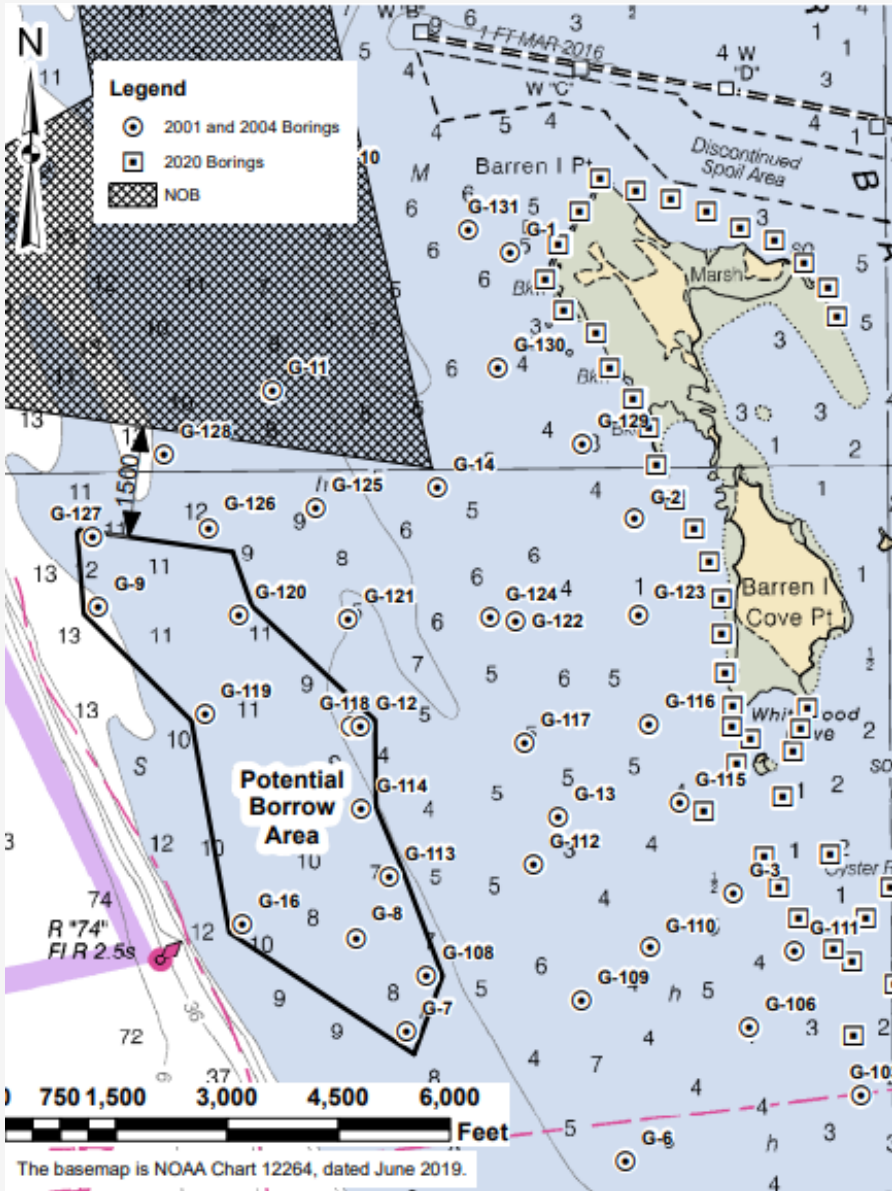
# Foundation Material Placement



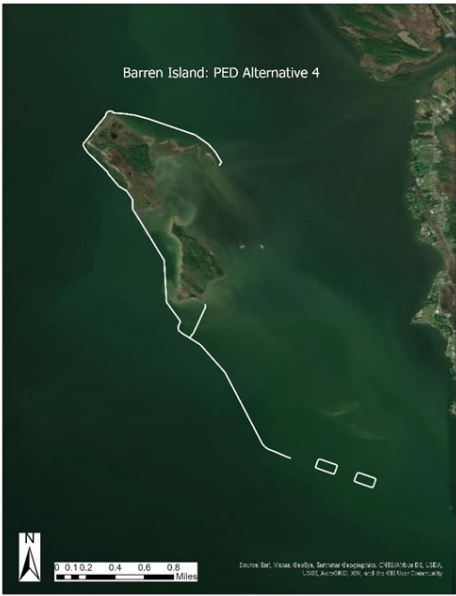
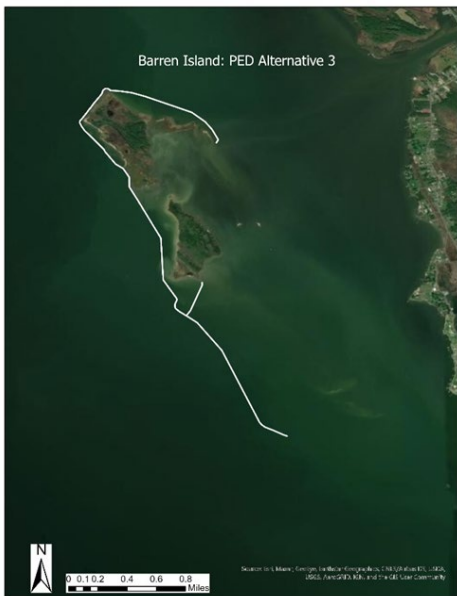
# Bird Islands



# Borrow Area



# Alternatives Analysis





# Wetland Restoration

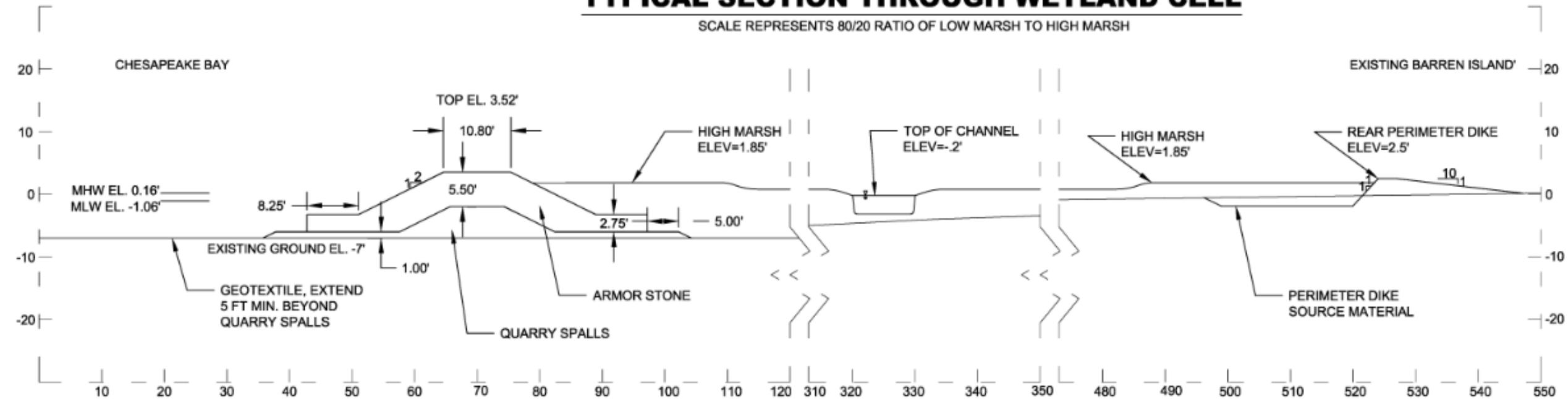




# Wetland Restoration Cross Section

## TYPICAL SECTION THROUGH WETLAND CELL

SCALE REPRESENTS 80/20 RATIO OF LOW MARSH TO HIGH MARSH



# Questions or concerns?







2021 MDOT MPA

# SPOTLIGHT SERIES

**MDOT**  
MARYLAND DEPARTMENT  
OF TRANSPORTATION  
MARYLAND PORT  
ADMINISTRATION



**Wednesday, May 19, 2021**

**5:30pm EST**

## **Mid-Chesapeake Bay Island Ecosystem Restoration Project**

This year marks the 20th anniversary of Maryland's Dredged Material Management Act, a tremendous effort which has guided how we manage dredged material successfully in ways that are good for our economy, our communities, and our environment. Join us for an informative discussion that will spotlight the Mid-Bay Ecosystem Restoration Project, a future dredged material placement site that will restore and expand beneficial island habitat in the Chesapeake. This will be hosted virtually, and is free and open to the public.

For more information click link below or go to [www.maryland-dmmp.com](http://www.maryland-dmmp.com)

**REGISTER HERE**



## FEATURED SPEAKERS



**Holly Miller:** MDOT MPA



**Trevor Cyran:** US Army Corps of Engineers



**Angie Sowers:** US Army Corps of Engineers



**Chris Guy:** US Fish and Wildlife Service



**Moderated by Kristen Keene:** MDOT MPA



Dredged Material Management Act  
Commemorating 20 Years  
**2001-2021**

**Maryland-DMMP.com**

# Project History



# Project Location



James Island

Barren Island is located directly to the west of Upper Hoopers Island in Dorchester County, Maryland



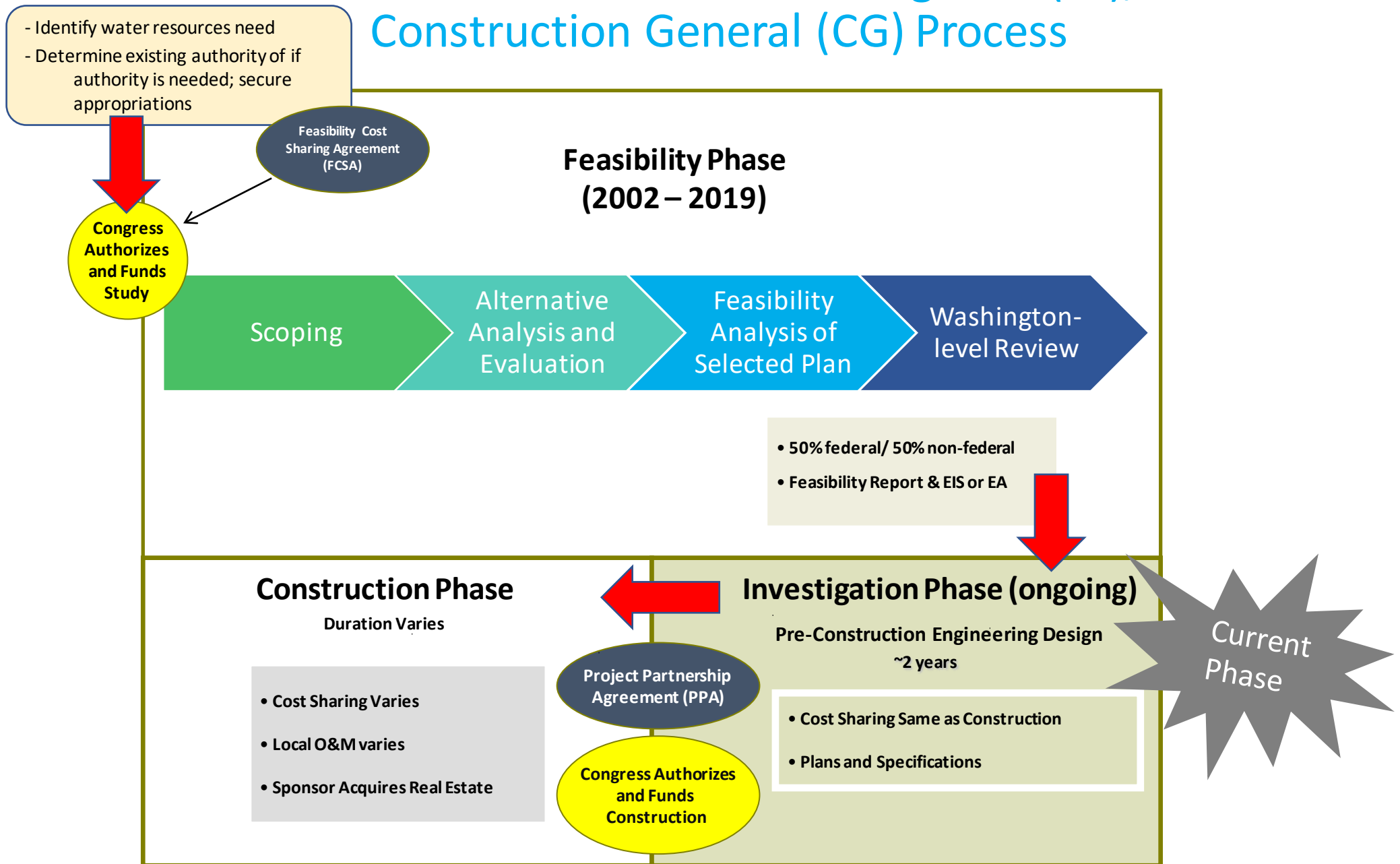
Barren Island



## Project Purpose

- Restore and protect wetland, aquatic, and terrestrial remote island habitat for fish, reptiles, amphibians, birds, and mammals;
- Protect existing remote island ecosystems to prevent further loss of island and aquatic habitat;
- Provide dredged material placement capacity for Federal navigation channels;
- Increase wetlands acreage in the Chesapeake Bay watershed;
- Decrease local erosion and turbidity;
- Promote conditions to establish and enhance submerged aquatic vegetation; and
- Promote conditions that support oyster recolonization.

# Civil Works General Investigation (GI)/ Construction General (CG) Process



# Mid-Bay Integrated Feasibility Report and Environmental Impact Statement (2008)

- Mid-Bay Integrated Feasibility Report and Environmental Impact Statement



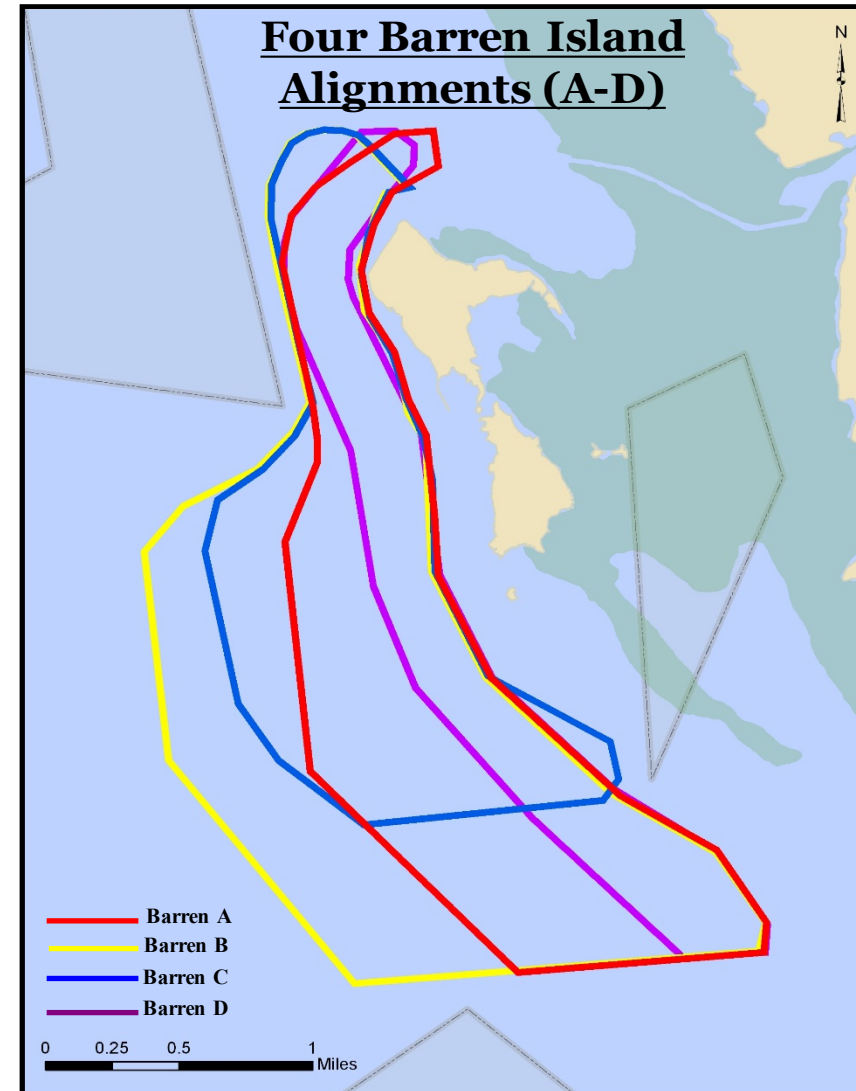
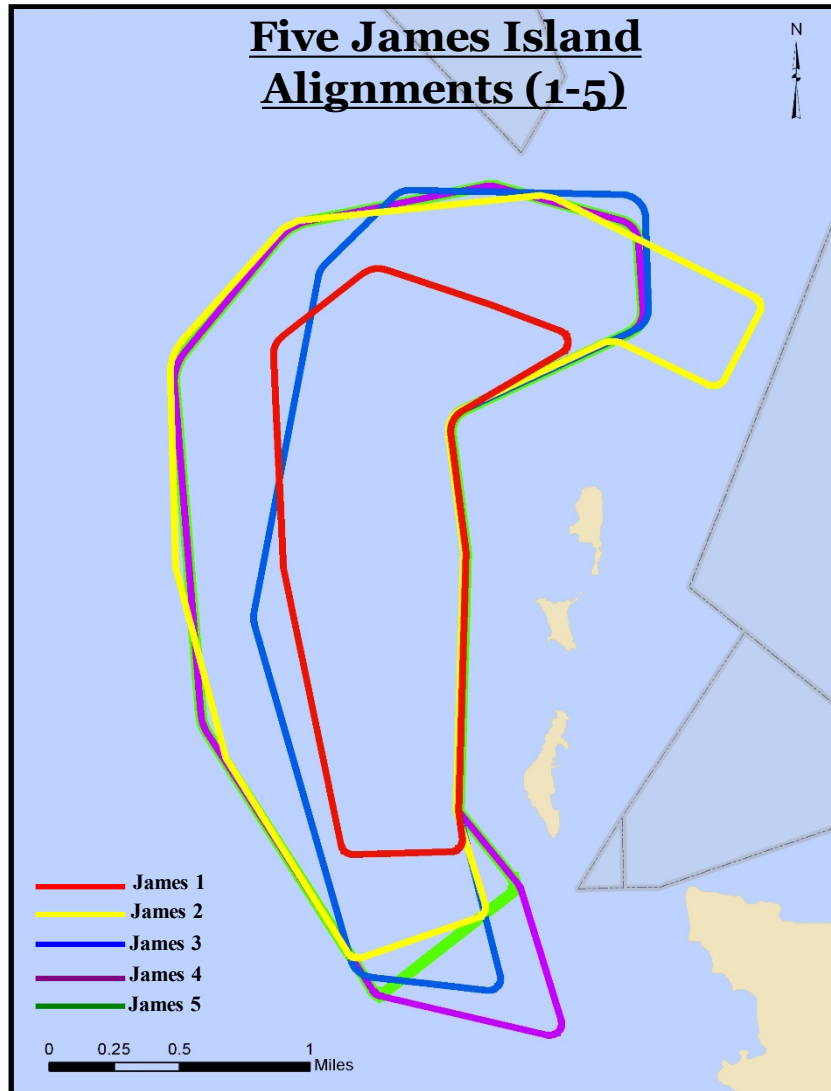
- 105 Potential Island Location → 2 Islands



- 2 Islands → 29 Alignments

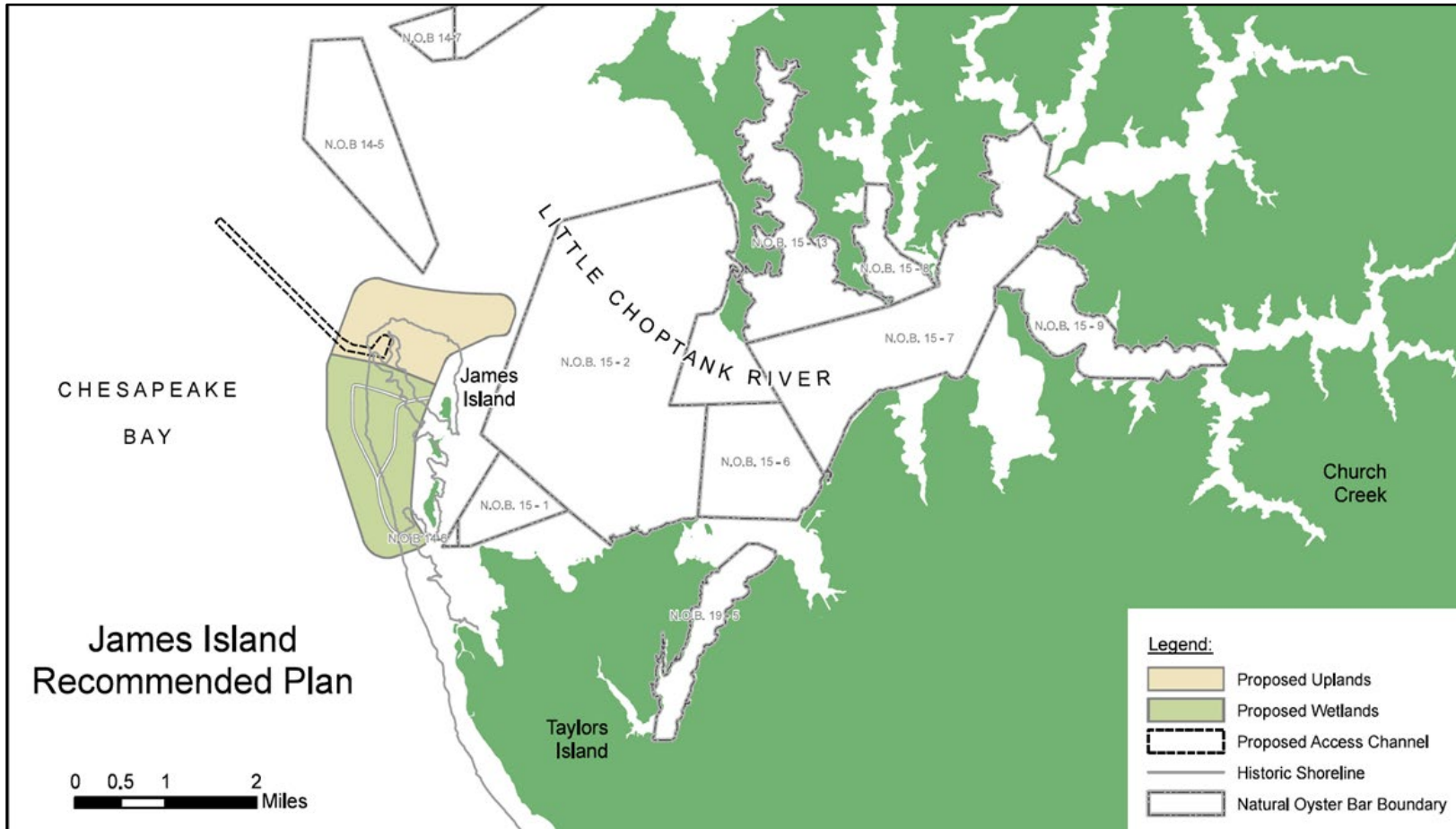
# Mid-Chesapeake Bay Island Ecosystem Feasibility Phase Analysis

## Alignments Evaluated





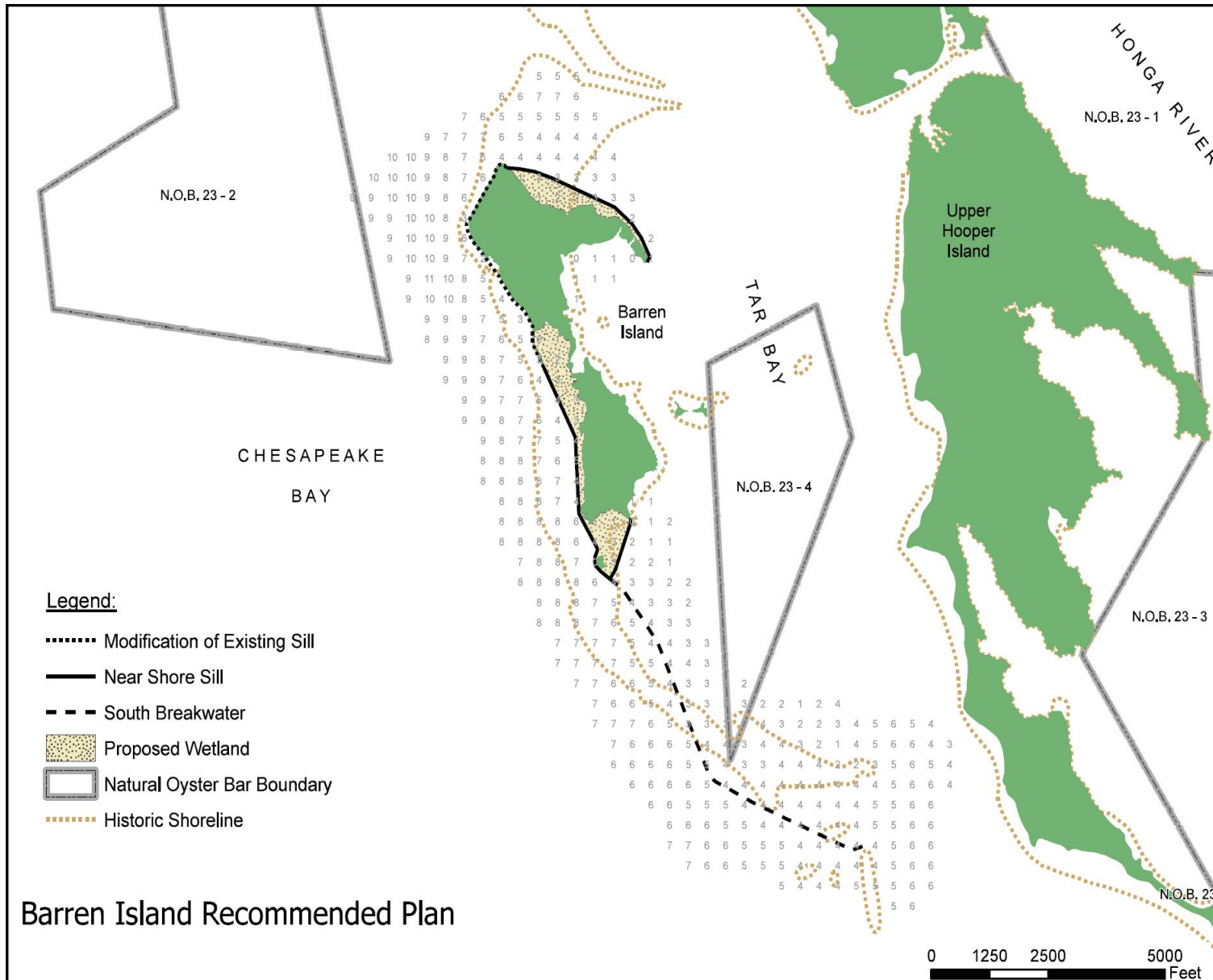
# James Island – Recommended Plan (Feasibility)



- 2,072 acres
- 55% wetland, 45% upland
- Upland dike height: 20 ft
- Access Channel Dredging
- Capacity: 90-95 mcy
- Placement Duration: 28-30 years
- Design Features
  - Tidal channels through wetlands
  - Freshwater ponds
  - Intertidal/unvegetated mudflats
  - Bird nesting structures



# Barren Island – Recommended Plan (Feasibility)



- 72 acres of wetland restoration, plus protection of existing island remnants and seagrass beds
- Sill height: 4 ft
- Southern Breakwater height: 6 ft
- Capacity: 0.38 mcy
- Placement Duration: ~7 years
- Design Features:
  - Existing sill modifications (4,900 ft)
  - Northern sill construction (9,760-ft)
  - Southern breakwater construction (8,200-ft)

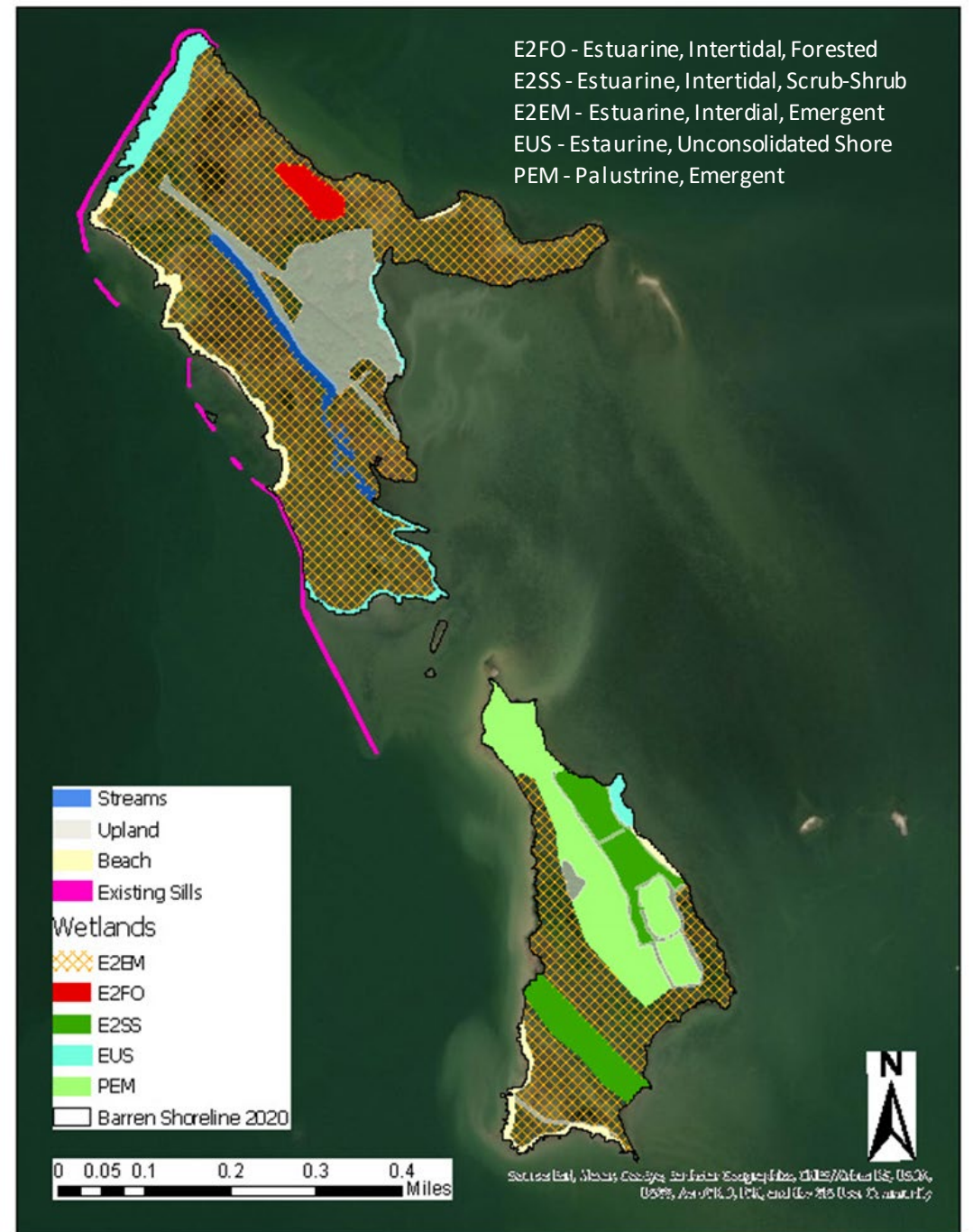
# PROJECT OVERVIEW

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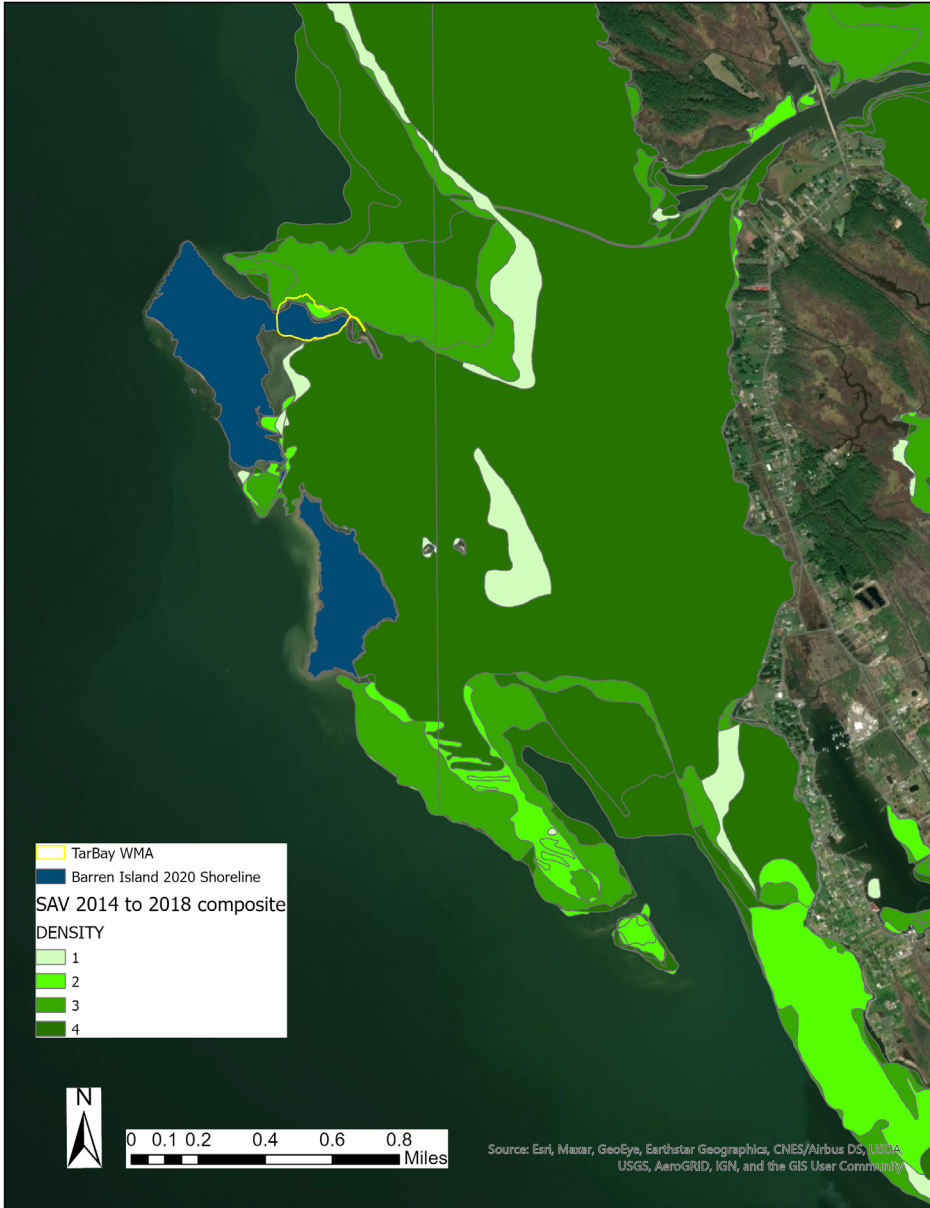
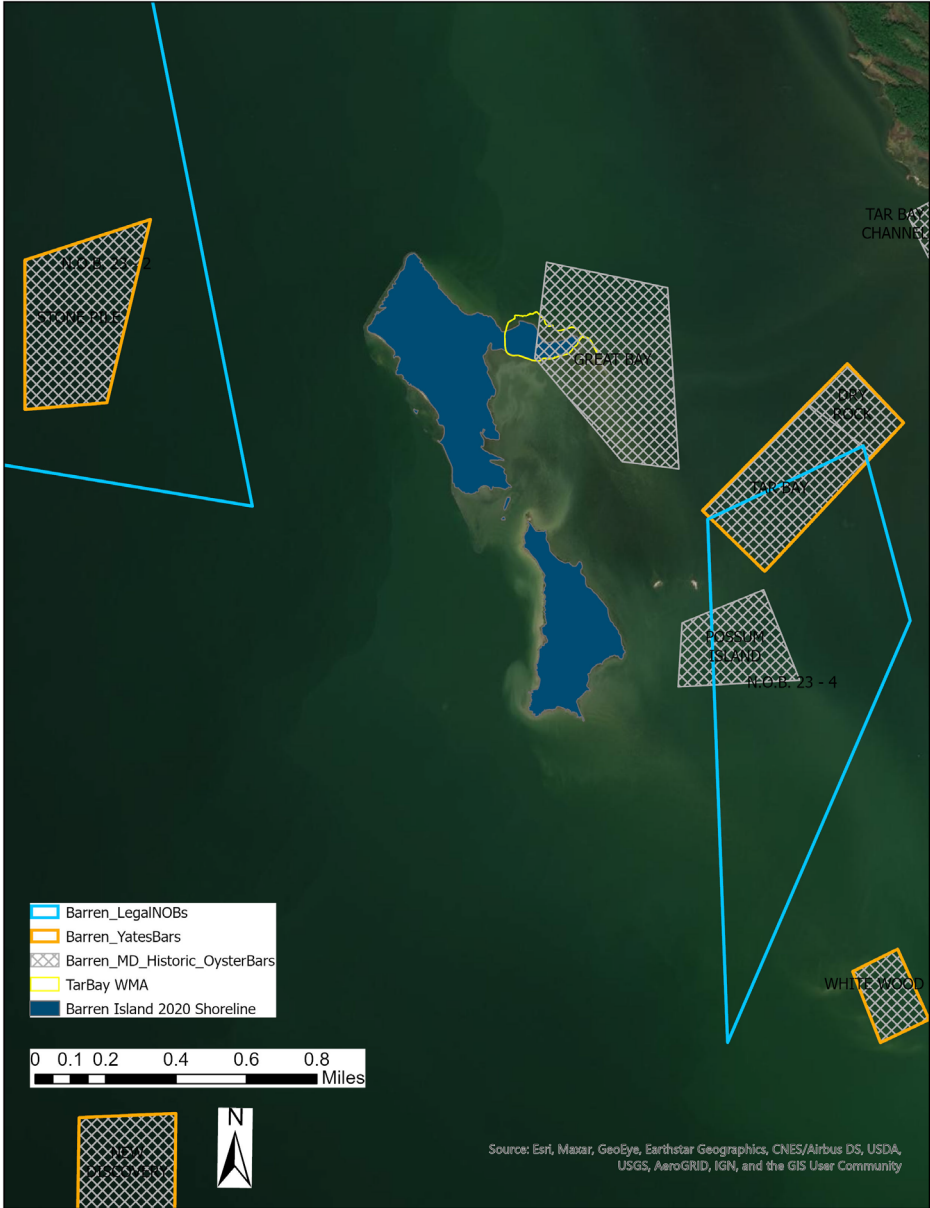
## BARREN ISLAND COMPONENT

## Barren Island: Current Conditions

- 138 acres
- Variety of habitats including:
  - Unconsolidated shore
  - 118 acres of wetlands
    - Emergent (75% of wetlands), shrub scrub, forested, and palustrine wetlands
    - Greater diversity of wetland types on southern remnant
  - 3.5 acres of beach
  - 14.5 acres of uplands
  - 2 acres of wetlands
  - Existing sills to the west (protect previous shoreline restoration projects)



# Current Conditions: Oysters and SAV





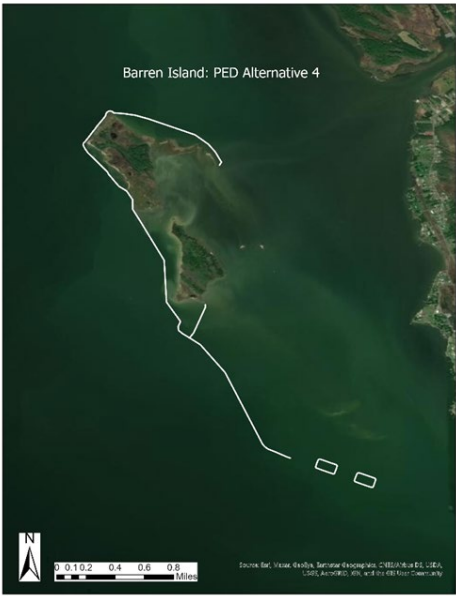
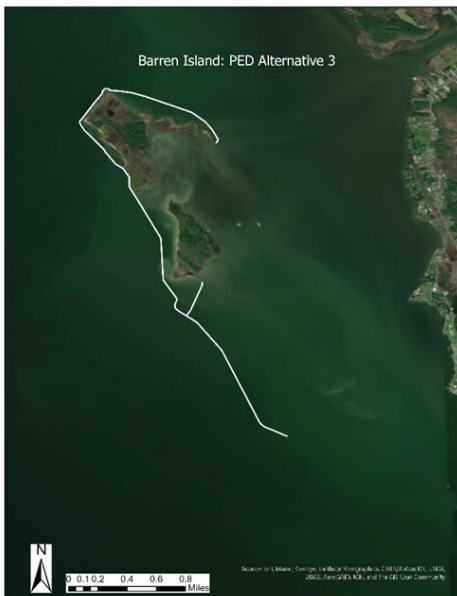
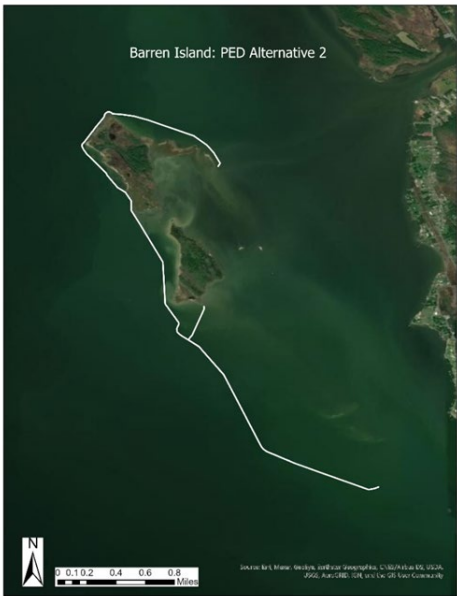
# Barren Island Restoration Plan

- 13,023 linear feet of sill
- 2,506 linear feet of breakwater
- 2 bird island (8.5 acres total)
- Minimum of 65 acres of wetland and intertidal mudflats

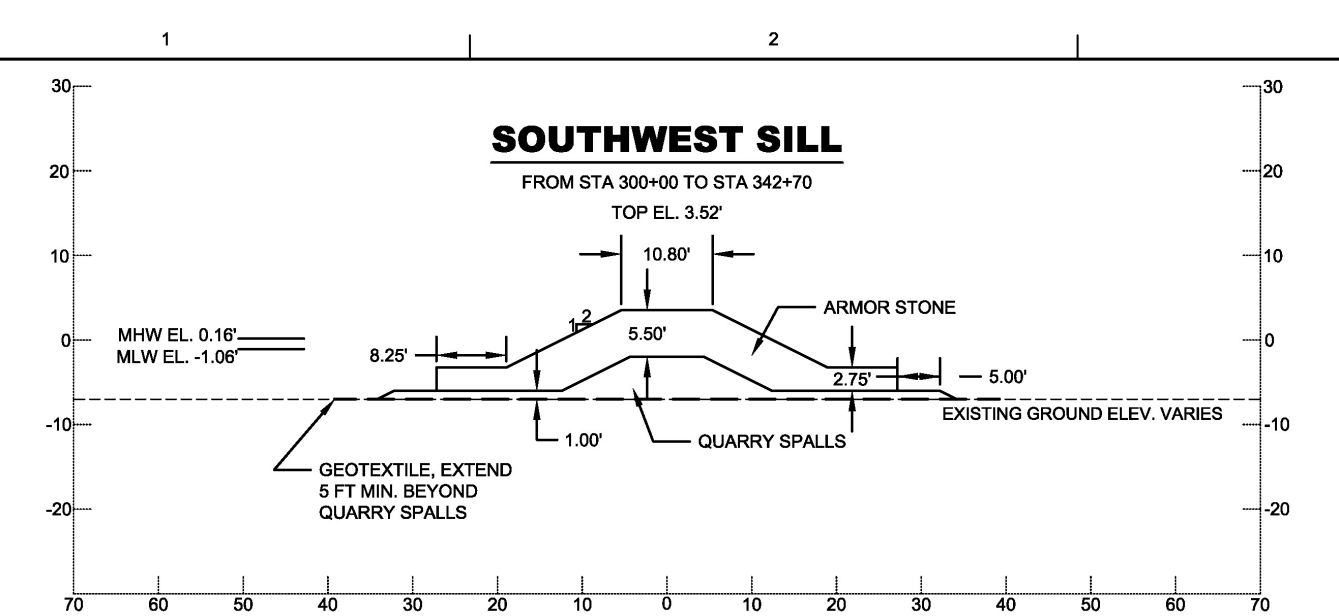




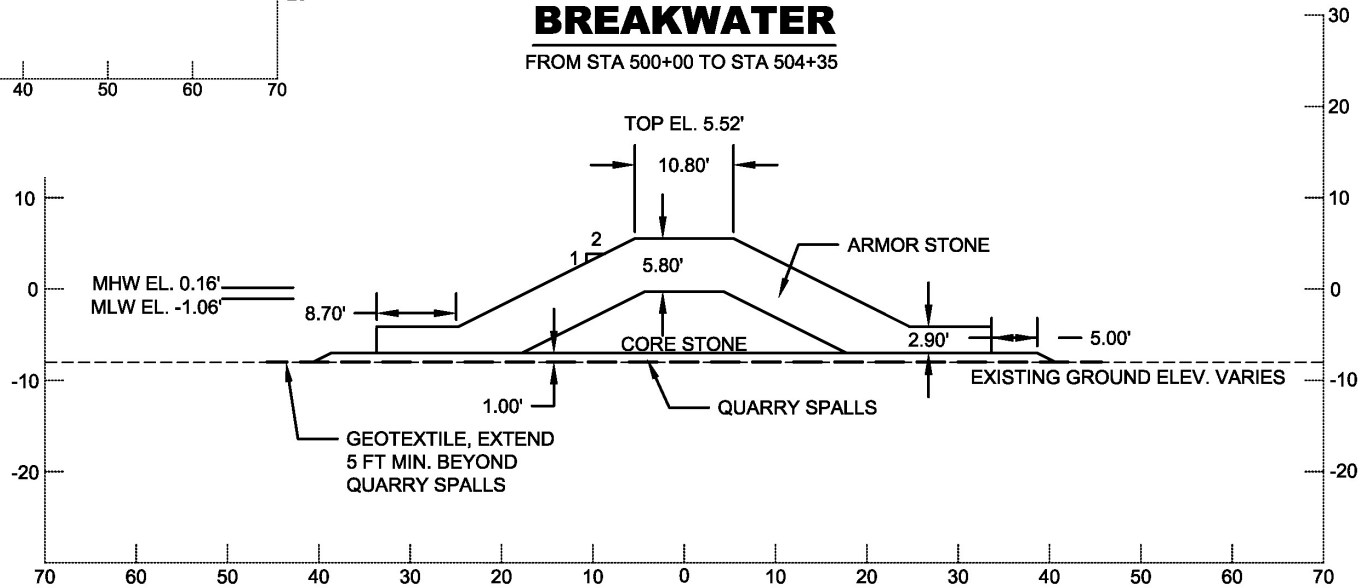
# Alternatives Analysis



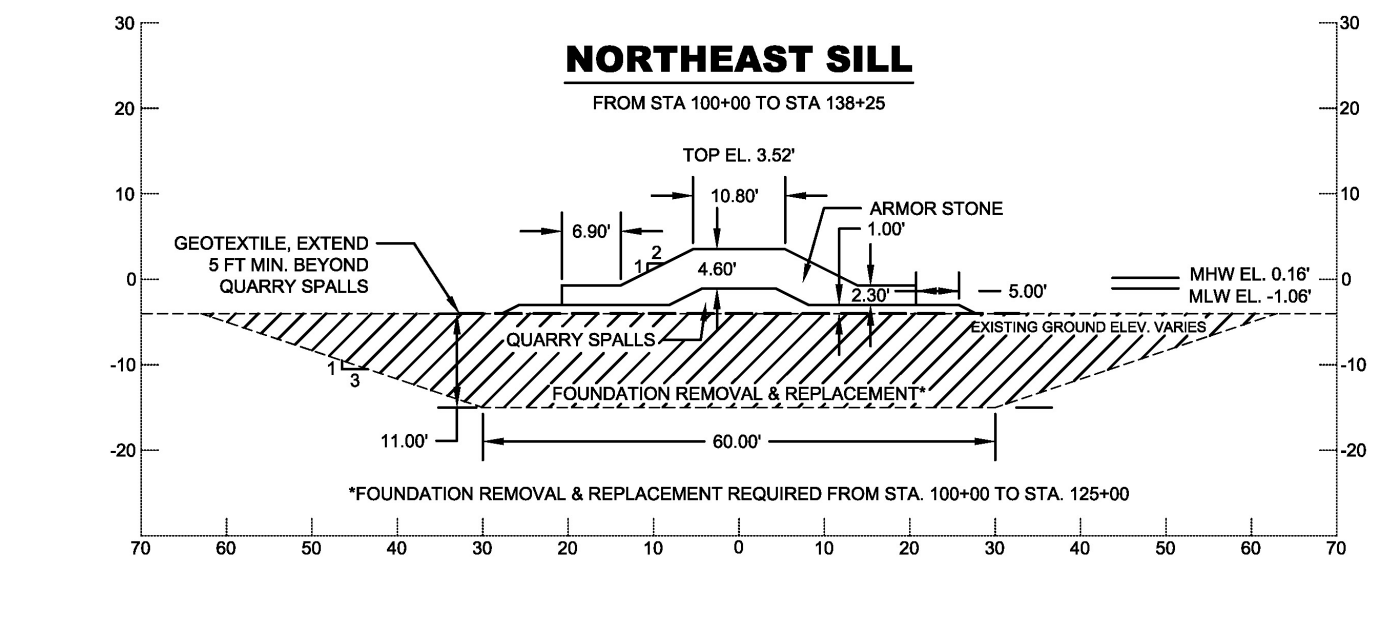
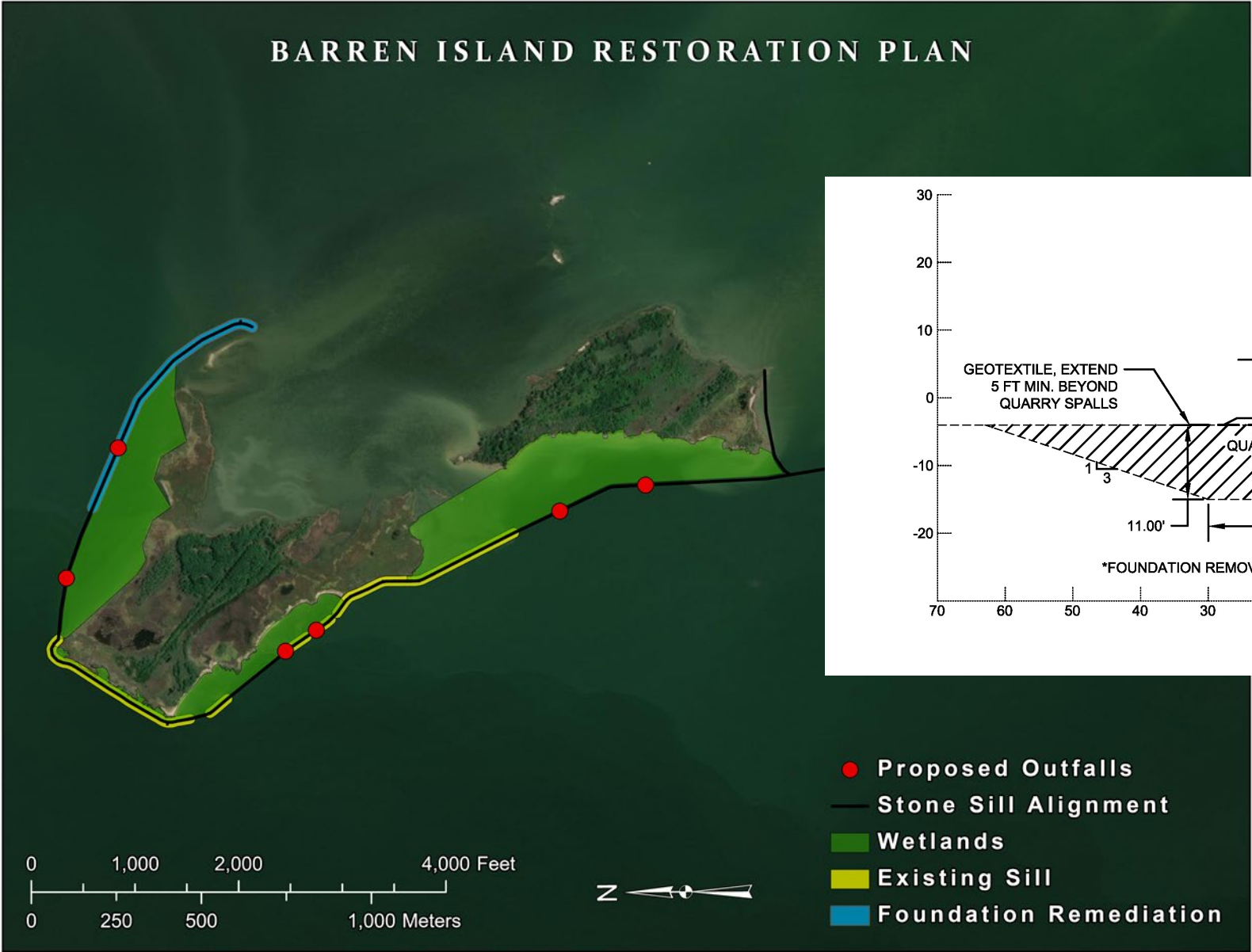
# Sill and Breakwater Construction Cross Sections



Sills - top elevation of 3.52"  
Breakwater – top elevation of 5.52"

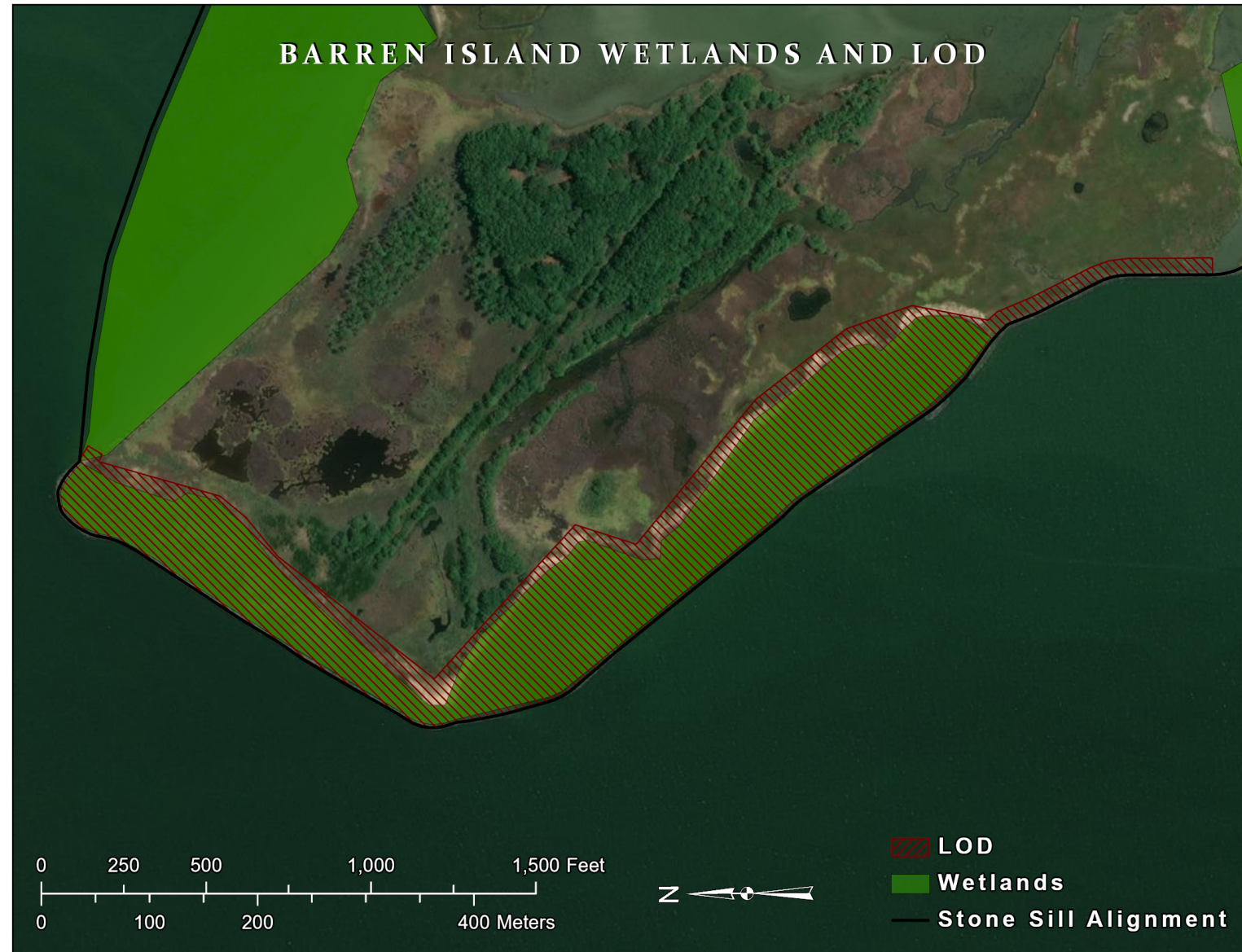


# Foundation Replacement





# Foundation Material Placement – Wetland Restoration on Northwest



# IMPACTS and BENEFITS



# Wetland Restoration and Habitat



Wetland Restoration (maximum potential):

- Northwest = 12.4 acres
  - Northeast = 22.2 acres
  - Southwest = 42.5 acres
- TOTAL = 77 acres

Nesting bird island habitat restoration = 8.5 acres

Conserve existing 138 acres of island

Preservation of conditions to support SAV

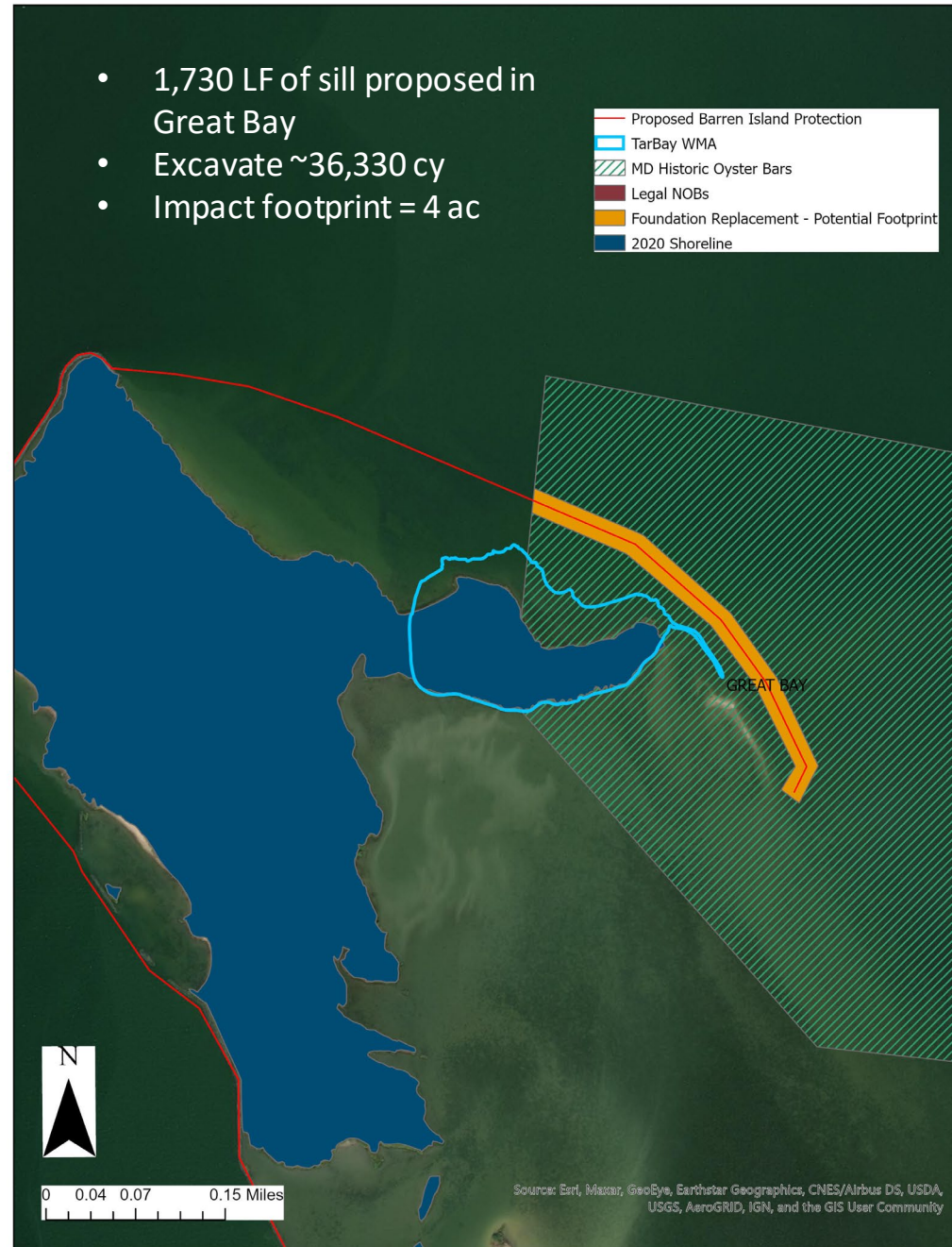
Wetlands impacted by wetland restoration = 1.0 acres

Shallow-water habitat conversion to wetlands and bird islands = 84.5 acres

Shallow-water impacts (sills and breakwater structures) = 30.4 acres

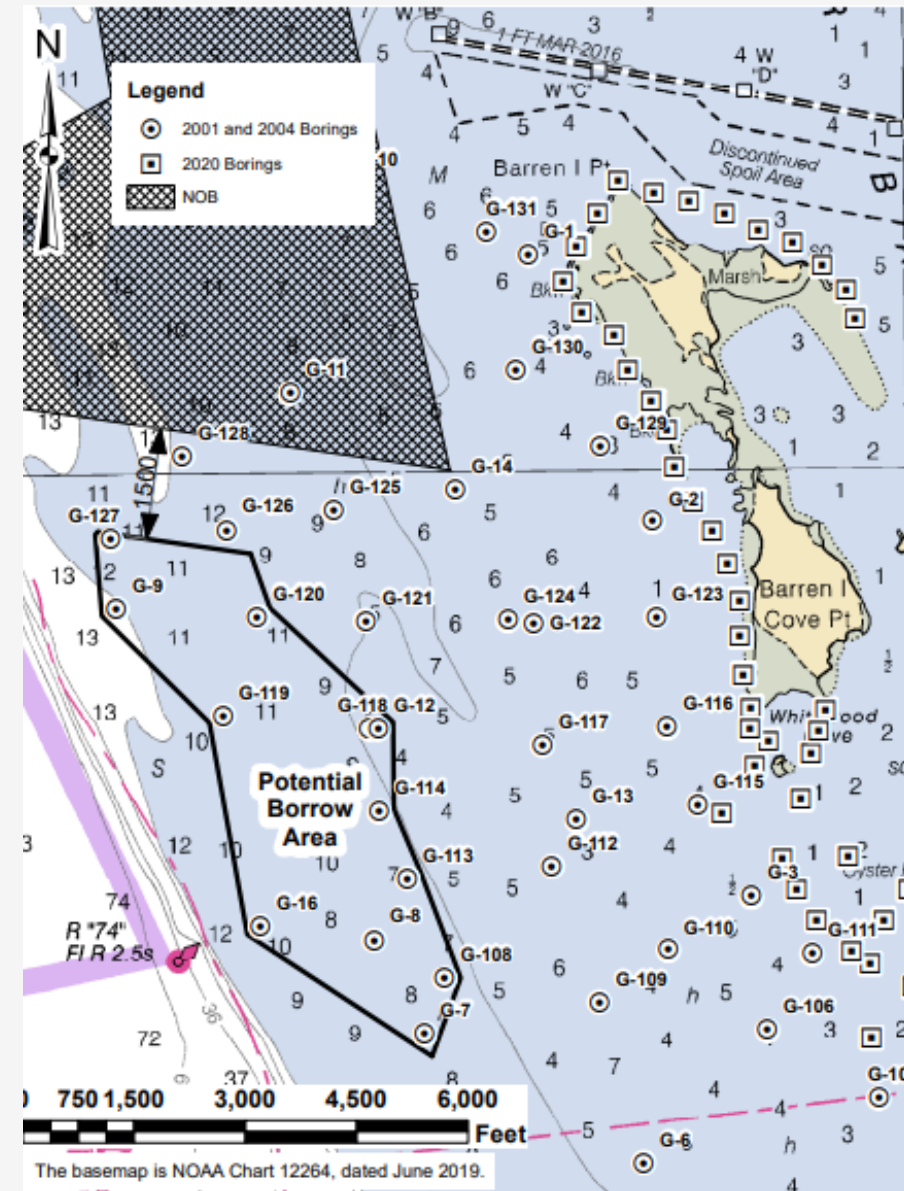
# Potential Oyster Impacts

- 1,730 LF of sill proposed in Great Bay
- Excavate ~36,330 cy
- Impact footprint = 4 ac



# Borrow Area

- Purpose: acquire sand for foundation replacement under northeast sill, creation of bird islands, and temporary dikes for wetland restoration
- Work is ongoing to determine extent of borrow area that would be needed to provide material needed



# NEPA Considerations (National Environmental Policy Act)

---

Development of a supplemental Environmental Assessment



# Environmental Compliance



- Draft Feasibility Study/EIS was released in August 2006; ROD signed 2019
- Received highest rating (lack of objections) from US Environmental Protection Agency
- No major objections or comments were received
- During process of updating NEPA in 2017 to enable ROD to be signed, it was decided with relevant agencies to complete update during design phase
  - Essential Fish Habitat
  - Endangered Species Act
  - Fish and Wildlife Coordination Act
  - Clean Water Act – Section 401 and 404
  - Critical Area Commission
  - Cultural

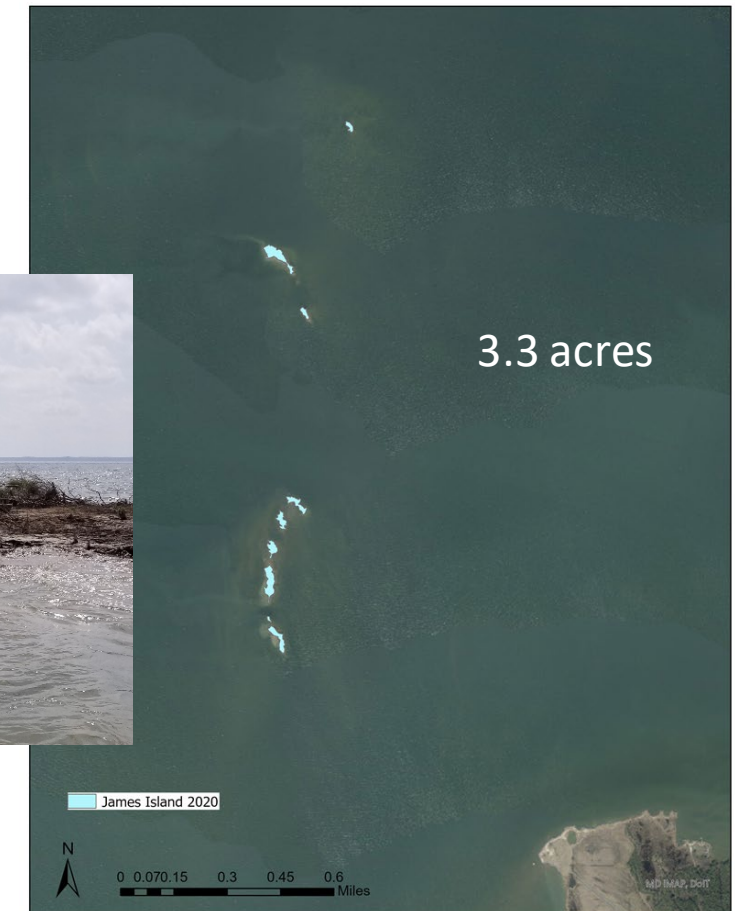


# Environmental Surveys – Sampling Plan

James and Barren Island						
Survey Type	Spring 2021	Summer 2020	Fall 2020	Winter 2020 - 2021	Spring 2021	Summer 2021
Water Quality/Nutrient		√	√	√	May	
Benthic Invertebrate		√	√		May	
SAV	√				2021	
Fisheries						
Bottom Trawl		√	√	√	May	
Beach Seine*		√	√	√	May	
Gillnet		√	√	√	May	
Pop Net			√		May	
Soft-shell and Razor Clam			√			
Pound Net Telephone Survey***			√			
Commercial Harvest Data Collection				√		
Crab Pot Survey^		√			May, June, July	
Avian						
Avian surveys - point counts		√			April/May	
Avian surveys - wetlands - SHARP					May, June	July
Avian surveys - passive listening counts/flushing survey				√		Aug, Sept
Predatory mammals				√		Aug, Sept
To be conducted by Anchor QEA						
To be completed through FWCA - FWS or subcontractor (Audubon or APHIS)						
To be completed by DNR						

# James Island – some initial results

- No terrestrial habitat left – survey included shoreline, mudflat, salt marsh, and open water
- Target locations (sampling locations from feasibility-phase surveys) no longer exist
- Because of lack of habitat diversity, the species list was mostly water birds and shorebirds.
  - Six species of sandpiper/plover - sanderling, spotted sandpiper, semipalmated sandpiper, least sandpiper, semipalmated plover, and ruddy turnstone
  - Gulls, terns, pelicans, and cormorants
  - Fish-eating raptors (osprey and eagle)
- Some locations for fisheries surveys were not able to be sampled due to current conditions



# Barren Island – some initial results

- Habitats were more diverse –survey included shoreline, mudflat, salt marsh, and open water plus forest and scrub shrub
- Marsh habitat
  - Hundreds of brown pelicans and double-crested cormorants
  - Shorebirds - sanderling, spotted sandpiper, and semipalmated plover
  - Terns, gulls, and raptors, plus some clapper rails and wading birds in the marshes
  - Terrestrial birds included migrant warblers, flycatchers, hummingbirds, resident brown-headed nuthatches, Carolina wrens, pine warblers, and cardinals

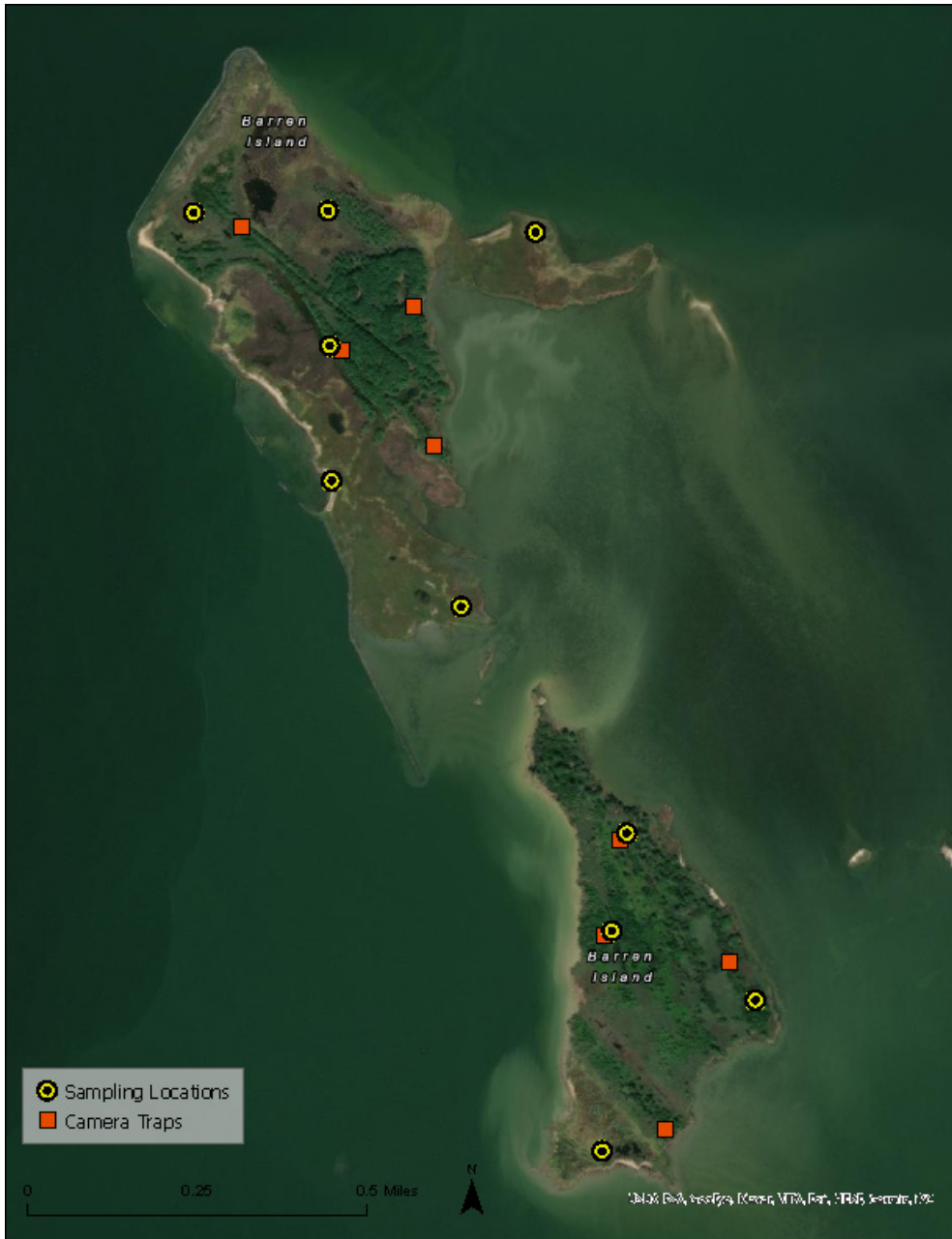




# Initial Avian and Predatory Mammals Surveys

## Mammals observed Jan 7, 2022

- Red Fox (visual and sign)
- Raccoon (sign)
- River Otter (sign)
- White tailed deer (visual and sign)
- Muskrat (sign)
- Also noted – remains of 1 box turtle and 2 diamond back terrapins



# Barren Island NEPA – Next Steps

- Summer 2021 – Complete biological surveys
- Now through July 2021 – Conduct relevant coordination to enable completion of draft assessments for inclusion in supplemental Environmental Assessment (EA)
  1. Essential Fish Habitat,
  2. Endangered Species biological assessment,
  3. Clean Water Act 404(b)(1) Analysis,
  4. Critical Areas Commission response
- July 2021 – Complete draft supplemental EA for internal review





# Project Schedule

## Mid-Bay Project Phases (Barren and James Island Components)

- Reconnaissance and Feasibility Studies – Identified Recommended Plans – Completed 2008 – Record of Decision signed in 2019
- Pre-Construction Engineering and Design – 2020-2024
- Sill and Breakwater/Exterior Dike Construction Following PED Phase & Funding Availability – ~2022-2028
- Continued Construction (including habitat development) and Operations and Maintenance Activities - ~2024-2065

## Barren Island NEPA Schedule

- Permitting – April 2021 – April 2022
- 35% Design Complete – April/May 2021
- 65% Design Complete – October 2021
- NEPA: EA Public Review – December 2021
- Signed FONSI (Finding of No Significant Impact) – March 2022
- Construction Begins – Summer 2022

## About Wetlands

[About Floodplains and Waterways](#)[About Wetlands](#)[Application Forms](#)[Documents and Information](#)[MD Wetland Conservation Plan](#)[Wetlands & Waterways Permits Interactive Search Portal](#)[Laws and Regulations](#)[Mitigation](#)[Program Contacts](#)[Frequently Asked Questions](#)[Wetlands and Waterways Home](#)

## Public Notices

MARYLAND DEPARTMENT OF THE ENVIRONMENT  
WATER AND SCIENCE ADMINISTRATION  
1800 WASHINGTON BOULEVARD  
BALTIMORE, MARYLAND 21230

**Notice of Application for State Wetland Licenses, Private Wetland Permits, Nontidal Wetlands and Waterways Permits and/or Water Quality**

# **Certification and the Opportunity to Provide Written Comment or Request an Informational Hearing**

**November 15, 2021**

The Water and Science Administration has received the applications listed below. A preliminary review has indicated that the listed projects may be subject to the opportunity for a public hearing once the application is substantially complete. Projects may be significantly altered during the review process. The applications and related information are available for inspection and copying. You may also request written notice of any hearing opportunity by having your name placed on the interested persons list for each project in which you are interested. To inspect the file or to have your name placed on the interested persons list, contact the assigned division at the telephone number indicated below or send an email to the assigned reviewer no later than December 15, 2021, unless otherwise noted in the Public Notice.

## **Wetlands and Waterways Program - (410) 537-3837**

### **Nontidal Wetlands Division - (410) 537-3456**

#### **Baltimore, Cecil, and Harford Counties**

201960846/19-NT-0150: MARYLAND TRANSPORTATION AUTHORITY, 300 Authority Drive, Baltimore, Maryland 21222 has applied for a Modification to 19-NT-0150. The modification request includes design changes such as an additional stormwater management facility along southbound I-95 south of MD 152, addition of a floodwater attenuation facility located near Old Joppa Road, various other design changes to erosion and sediment control and stormwater management facilities, culvert and outfall improvements, and stream channel stabilization throughout the corridor. Also included is revised design of I-95 NB widening and a noise wall between MD 24 and Bynum Run, geotechnical borings associated with a potential Park and Ride facility located near Old Mountain Road adjacent to I-95, and clearing of trees within a wetland, buffer, and floodplain along MD 7C in Cecil County. The modification also includes minor changes to impacts at the Eccleston Mitigation Site as well as the addition of the previously constructed HT-3012 Stream Restoration site and removal of the previously proposed Lilly Run Stream and Wetland Mitigation site from the mitigation package. The project is located on I-95 from north of Old Joppa Road to Bynum Run, just south of MD 543 in Harford County, Maryland. The modification results in an overall decrease of permanent impacts to 32,931 square feet of wetland, 103,386 square feet of 25-foot nontidal wetland buffer, 4,586 linear feet waterway, and 107,429 square feet of 100-year floodplain. In total, the project will permanently impact 99,733 square feet of forested nontidal wetland, 7,733 square feet of scrub-shrub nontidal wetland, 31,094 square feet of emergent nontidal wetland, 3,187 square feet of forested/emergent nontidal wetland, 387,739 square feet of 25-foot nontidal wetland buffer, 14,013 linear feet of perennial streams, 9,956 linear feet of intermittent streams, 103,207 square feet of 100-year floodplain, and temporarily impact 58,741 square feet of forested nontidal wetland, 6,258 square feet of scrub-shrub nontidal wetland, 83,592 square feet of emergent nontidal wetland, 5,236 square feet of palustrine, unconsolidated



bottom wetland, 192,652 square feet of 25-foot nontidal wetland buffer, 1,560 linear feet of perennial streams, 954 linear feet of intermittent streams, and 778,357 square feet of 100-year floodplain. Despite an overall reduction in impact, the project will result in new permanent impacts to 22,412 square feet of forested nontidal wetland, 170 square feet of scrub-shrub nontidal wetland, 6,319 square feet of emergent nontidal wetland, 69,795 square feet of 25-foot nontidal wetland buffer, 1,580 linear feet of perennial streams, and 1,663 linear feet of intermittent streams, and new temporary impacts to 2,608 square feet of palustrine, forested wetland, 721 square feet of palustrine, emergent wetland, 1,739 square feet of 25-foot nontidal wetland buffer, 273 linear feet of perennial streams, and 109 linear feet of intermittent streams, not previously authorized for disturbance. The mitigation requirement is 252,400 square feet of wetland mitigation and 10,634 linear feet of stream mitigation. The proposed mitigation will be provided off-site at the following locations: Eccleston Mitigation Site adjacent to Greenspring Valley Road and Park Heights Avenue in Baltimore County, Carsins Run Mitigation Site located along I-95 southbound in Harford County, and HT 3012 Stream Restoration Site in Baltimore County. A virtual public informational hearing for only the proposed work listed in this public notice is being held to gather information and hear testimony to assist the Department in making a determination regarding an application for a Nontidal Wetlands and Waterways Permit. **The virtual public hearing is scheduled for 6:30 p.m. on December 2, 2021.** The plans and an opportunity to ask questions will be provided from 6:30 pm – 7:00 p.m. The public informational hearing will begin promptly at 7:00 pm and end at 9:00 p.m. **In order to view or participate in the hearing, a participant must register at:** <https://attendee.gotowebinar.com/register/7017776319619504400> , webinar ID 285-539-851 and directions will be electronically forwarded to the email provided. If internet service is not available, the participant may call 1-866-901-6455 and then enter access code 834-073-155 to hear the public hearing. Phone only participants will not have the ability to provide testimony during the hearing, however, statements may be provided to Jennifer Bird by November 24, 2021, to be read during the hearing which may not be longer than three minutes in length. Information and questions can be provided orally by participants during the hearing through the virtual platform. Written comments and requests to be included on the interested persons list may be sent by December 30, 2021, to the Maryland Department of the Environment. For nontidal wetland concerns, send correspondence to the attention of Jennifer Bird, 1800 Washington Boulevard, Baltimore, MD 21230 or at [jennifer.bird@maryland.gov](mailto:jennifer.bird@maryland.gov) or 410-316-7959. Any further notices concerning actions on the application will be provided on the Maryland Department of the Environment's website, [https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/I-95\\_ETL\\_North\\_Sect200\\_PhaseII.aspx](https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/I-95_ETL_North_Sect200_PhaseII.aspx). Please refer to Subsection 5-907 of the Annotated Code of Maryland or the Code of Maryland Regulations 26.23.02 and 26.24.02 for information regarding the application process.

## Howard County

202061493/20-NT-3200: LKQ CORPORATION, 3918 Cedar Day Circle, Valrico, Florida 33506, has applied to construct a Pollution Control System (PCS), two storm drain outfalls, and removal and replacement of gravel base at an auto salvage compound. The PCS will entail the construction of two facilities at the top and bottom of Dorsey Run on the property. The storm drain outfalls will convey run-off from offsite and flow from tributaries which will bypass the auto salvage facility. Grading within the 100-year floodplain will result in the removal of existing contaminated gravel and replacement with clean gravel. The project will permanently impact 328 linear feet (3,006 square feet) of Dorsey Run (Use I) and 164,595 square feet of the associated 100-year floodplain. The project will also temporarily impact 665 linear feet (5,340 square feet) of Dorsey Run (Use I) and 40,480 square feet of the associated 100-year floodplain. The project is located at 8125 Washington Boulevard, Jessup, in Howard County. Written comments, requests for a public informational hearing and requests to be included on the interested persons list may be sent by November 30, 2021 to the Maryland Department of the Environment,

Attn: Debra Correia, 1800 Washington Boulevard, Baltimore, MD 21230 or at [debra.correia@maryland.gov](mailto:debra.correia@maryland.gov) or 410-537-3900. Any further notices concerning actions on the application will be provided only by mail to those persons on the interested persons list. Please refer to Subsection 5-907 of the Annotated Code of Maryland or the Code of Maryland Regulations 26.23.02 for information regarding the application process.

## **Prince George's County**

202161394/21-NT-0448: WERRLEIN WSSC LLC, 522 Defense Highway, Annapolis, Maryland 21401, has applied for the redevelopment of a vacant Washington Suburban Sanitary Commission (WSSC) administrative facility & associated parking lots into a single-family residential subdivision with associated infrastructure. The applicant has also proposed to provide floodplain compensation for the area being filled. The project will permanently impact 498 square feet of nontidal wetland, 4,914 square feet of the 25-foot nontidal wetland buffer, and 2.36 acres of the 100-year nontidal floodplain. The project is proposed on the Northwest Branch of the Anacostia River (Use I). The project location is 4017 Hamilton Street Hyattsville, MD 20781; at the intersection of 40th place and Gallatin Street in Prince George's County. Written comments, requests for a public informational hearing and requests to be included on the interested persons list may be sent by December 15, 2021 to the Maryland Department of the Environment, Attn: Ryan Din, 1800 Washington Boulevard, Baltimore, MD 21230 or [ryan.din@maryland.gov](mailto:ryan.din@maryland.gov) or 410-537-4247. Any further notices concerning actions on the application will be provided only by mail to those persons on the interested persons list. Please refer to Subsection 5-907 of the Annotated Code of Maryland or the Code of Maryland Regulations 26.23.02 and 26.17.04 for information regarding the application process.

## **Tidal Wetlands Division - (410) 537-3571**

### **Kent County**

202160896/21-WL-0641: SAFE HARBOR MARINA c/o Peter Clark at 14785 Preston Road Ste. 975, Dallas, Texas 75254 has applied to (A) construct and backfill 787 linear feet of replacement timber bulkhead within a maximum of 18 inches channelward of a deteriorated bulkhead in addition to (B) reconfigure the Great Oak Landing LLC marina located in the tidal waters of Fairlee Creek at 22170 Great Oak Landing Road, Chestertown, Maryland 21620. The reconfiguration proposes to: (1) remove all fixed piers and piles at docks F and G, remove the dock extension and piles on Dock D, and remove the existing 6.5-foot wide by 56-foot long travel lift pier; (2) Dock D: construct a 362-foot long by 8-foot wide main floating pier, with a 130-foot long by 8-foot wide floating "T" head, six 70-foot long by 7-foot wide floating finger piers, six 60-foot long by 6-foot wide floating finger piers and install 42 mooring piles to create 26 slips, all within a maximum of 660-feet channel ward of the mean high water line; (3) Dock F: construct a 494-foot long by 8-foot wide main floating pier, with a 128-foot long by 8-foot wide floating "T" head, eight 60-foot long by 6-foot wide floating finger piers, eight 50-foot long by 5-foot wide floating finger piers, six 40-foot long by 4-foot wide floating finger piers and install 59 mooring piles to create 46 slips, all within a maximum of 610 feet channel ward of the mean high water line; (4) Dock G: construct a 486-foot long by 8-foot wide floating main pier, with a 128 foot-long by 8-foot wide floating "T" head, eight 60-foot long by 6-foot wide floating finger pier, eight 50-foot long by 5-foot wide floating finger piers, six 40-foot long by 4-foot wide floating finger piers and to install 58 mooring piles to create 46 slips, all within a maximum of 640-feet channelward of the mean high water line; (5) Dock H: construct a 10-foot by 138-foot "L" head floating pier

extension attached to the existing 10-foot wide by 55-foot long H dock, all to extend no more than 180-feet channelward of the of the existing bulkhead; (6) Travel Lift: widen the existing travel lift well from 22.9-feet wide to 30.75-feet wide, by removing the existing Southern travel lift pier, and constructing a 6.5-foot wide by 56-foot long travel lift pier 7.85-feet southwest from its previous location, all to extend no more than 56-feet channelward of the of the existing bulkhead. For more information, please contact Andrew Belfield at [Andrew.Belfield@Maryland.gov](mailto:Andrew.Belfield@Maryland.gov) or 410-537-3514.

## Prince George's County

202160863/21-WL-0624: SMOOT HARBOR, LLC at 12500 Fair Lakes Circle, Suite 400, Fairfax, Virginia 22033 has applied to maintenance hydraulic or mechanical dredge a 7.29 acre approach and channel area to a depth of 10.84 feet at mean low water and transport 5800 cubic yards of dredge material; all dredge material to be transported via barge to a site known as the Piney Reclamation located at 12065 Forgotten Farm Place, Waldorf 20602 in Charles County, Maryland. The purpose of the project is to maintain navigation to Smoot Harbor. The proposed project is located within the tidal waters of the Smoot Harbor off the Potomac River along the shoreline of 165 Waterfront Street, National Harbor Maryland 20745 in Oxon Hill, Prince George's County. **The Public Notice period begins November 15, 2021 and ends on December 2, 2021.** For more information, please contact Melissa McCanna at [Melissa.mccanna@maryland.gov](mailto:Melissa.mccanna@maryland.gov) or at 410-537-4053.

202160863/-WP-0625: SMOOT HARBOR, LLC at 12500 Fair Lakes Circle, Suite 400, Fairfax, Virginia 22033 has applied to authorize regulated activities in private tidal waters of the Potomac River at Smoot Bay to upgrade, expand and reconfigure the present pier system to increase the number and size of marina slips; construct a new boat ramp and add visitor amenities; and maintain and improve navigable access at National Harbor, Oxon Hill, Prince Georges County, Maryland. The proposed project is located within the tidal waters of the Smoot Harbor off the Potomac River along the shoreline of 165 Waterfront Street, National Harbor Maryland 20745 in Oxon Hill, Prince George's County. Additional information can be obtained by contacting Melissa McCanna at [Melissa.McCanna@maryland.gov](mailto:Melissa.McCanna@maryland.gov) or at 410-537-4053. The proposed project, which has been divided into seven separate categories, is described below.

(A) Heritage Cove (SHA Piers): (1) Pier B, (Western "SHA" pier): Extend the existing pier landward 19 feet by 10 feet wide to connect the pier to uplands; construct one 252-foot long by 10.5-foot wide floating pier with associated gangway, and a 36-foot long by 10.5 foot East/West connector near-shore platform, a 60-foot long by 15-foot wide "L" head platform with associated gangways attached to the pier, and five 40-foot long by 7-foot wide floating finger piers; install eight 40-foot long by 18.5-foot wide boatlifts, emplace up to 16 mooring piles, construct a roof system over all the lifts to create eight covered boat slips, all extending a maximum of 295 feet channelward of the mean high water line. (2) Pier A, (Eastern "SHA" pier): Construct a 252-foot long by 10.5-foot wide floating pier, a 60-foot long by 15-foot wide "L" head platform with associated gangways attached to the pier; construct five 40-foot long by 7-foot wide floating finger piers, install eight 40-foot long by 18.5-foot wide boatlifts, emplace 16 mooring piles, construct a roof system over all the lifts to create eight covered boat slips, all extending a maximum of 295 feet channelward of the mean high water line.

(B) North Pier, North Marina: (1) Remove one 95-foot long by 4-foot wide floating pier; (2) Construct two 100-foot long by 100-foot wide platforms with tensile roof structures attached to an existing pier a maximum of 680 feet channelward of the mean high water line; (3) Construct two floating piers connected to an existing fixed pier with the following dimensions: 286-foot long by 12-foot wide with associated gangway, and 397-foot long by 12-foot wide with associated gang way, extending a maximum of 730 feet from the mean high water line.

(C) South Pier, North Marina: (1) Pier 2: Construct a 249-foot by 10-foot wide floating pier extension with a 130-

foot by 10-foot "T" head platform, eleven 60-foot long by 5-foot wide floating finger piers, and one 60-foot long by 8-foot wide finger pier. (2) Pier 3: Construct a 249-foot long by 10-foot wide floating pier extension with a 130-foot by 10-foot "T" head platform, and eight 60-foot long by 5-foot wide floating finger piers. (3) Pier 4: Construct a 249-foot long by 10-foot wide floating pier extension with a 61-foot by 10-foot "L" head platform, and four 60-foot long by 5-foot wide floating finger piers, all extending a maximum of 750 feet from the mean high water line.

(D) Gaylord Pier: (1) Construct two 60-foot long by 5-foot wide floating finger piers attached to the existing fixed pier and emplace 3 mooring piles extending a maximum of 284 feet from the mean high water line; (2) Construct associated gangways over existing floating structures, extending a maximum of 400 feet from the mean high water line.

(E) South Marina Boat Ramp: (1.) Construct a 61-foot long by 68-foot wide 4 lane boat ramp with two fixed 154-foot long by 8-foot wide launching piers with two 180-foot long sheet pile groins under the pier decking.

(F) South Marina. Construct a floating pier system creating 162 additional boat slips as follows: (1) Remove a 93-foot long by 12-foot wide floating T-head; (2) Construct a 314-foot long by 10-foot wide main access pier comprised of an existing 47-foot long by 10-foot wide South Marina pier with a 12-foot long by 10-foot wide floating pier, and a 255-foot long by 10-foot wide floating pier to be attached to an existing landward concrete pier and steel gangway; (3) Construct four 210-foot long by 8-foot wide floating piers (Piers A, B, C and F) with forty-two 28-foot long by 5-foot wide floating finger piers; (4) Construct two 390-foot long by 8-foot wide floating piers (Piers D and E) with thirty nine 28-foot long by 5-foot wide floating finger piers; (5) Construct a 610-foot long wave screen attached to Piers A and D, and construct a 128-foot long by 16-foot wide wave attenuator at the western end of Pier D, all extending a maximum of 420 feet from the mean high water line.

(G) Smoot Cove: (1) Install eighteen mooring buoys with a 100-foot mooring radius west of the Heritage Cove piers and to extend a maximum of 1,300 feet channel ward of the approximate mean high water line; (2) Install nine mooring buoys with a 140-foot mooring radius south of the Heritage Cove piers to extend a maximum of 700 feet channel ward of the mean high water line; (3) Install three mooring buoys with a 100-foot mooring radius east of the Gaylord Pier and to extend a maximum of 200 feet channel ward of the approximate mean high water line; and (4) Install five mooring buoys with a 100-foot mooring radius east of the South Pier/North Marina and to extend a maximum of 200 feet channel ward of the approximate mean high water line.

(H) Dredging. Mechanically or hydraulically dredge the following areas, all dredge material to be transported via truck to a site known as the Piney Reclamation located at 12065 Forgotten Farm Place, Waldorf 20602 in Charles County, Maryland. (1) Dredge a portion of a 1.37 acre approach/navigation channel area to a depth of 10.84 feet at mean low water MLW and a 0.14 acre area to excavate the South Marina Boat Ramp to a depth of 4.84 feet at MLW and transport 7,150 cubic yards of dredge material; (2) Dredge an 8.48 acre area of a channel and mooring area to a depth of 10.84 feet at MLW and transport up to 13,100 cubic yards of dredge material. (3) Provide periodic maintenance dredging for a period of six years of previously dredged channel and mooring areas to maintain the following depths: (3.i) A 9.8 acre area to a depth of 4.84 feet at MLW; (3.ii) A 25.8 acre area to a depth of 7.84 feet at MLW, and (3.iii) A 42.41 acre area to a depth of 10.84 feet at MLW.

## **Dorchester County - EFFECTIVE 10/22/2021**

202160895/21-WL-0640/21-WQC-0331/MDOT Maryland Port Administration, Amanda Peñafiel, World Trade Center, 401 E. Pratt Street, Baltimore, MD 21202 has applied to restore a remote island habitat at Barren Island, which is located in Dorchester County adjacent to Upper Hoopers Island. The project is the smaller portion of the Mid-Chesapeake Bay Island Ecosystem Restoration Project and will include the restoration of approximately 83 acres of wetlands, construction of approximately 13,023 linear feet of new and modified stone sills and 4,620 linear feet of segmented breakwater to immediately provide increased protection to the eroding Barren Island and to the potential submerged aquatic vegetation (SAV) habitat to the east of Barren Island, and installation of 2 bird nesting habitat islands (approximately 8.5 acres total). Approximately 52,500 cubic yards of material that is

unsuitable for construction foundation will be dredged from the northeast Barren Island stone sill location to an approximate depth of 7 feet and will be placed hydraulically or mechanically within the confined area behind the constructed stone sills at Barren Island. Approximately 429,000 cubic yards of authorized maintenance material dredged from small local federal navigation channels will be placed behind the confining stone sills up to the mean high water elevation to construct the wetlands. Wetlands will include low and high marsh plantings as well as intertidal mudflats. During final wetland planning, current conditions will be evaluated with respect to sea level rise projections and determinations of sustainable marsh elevations to identify high to low marsh ratios. A public hearing for only the proposed work listed in this public notice is being held to gather information and hear testimony to assist the Department in making a determination regarding an application for a wetlands license and permits. A public hearing was scheduled at the Madison Volunteer Fire Department (1154 Taylors Island Rd, Madison, MD 21648) at 6:30 PM on November 15, 2021, with an informational poster session held from 6:00 PM – 6:30 PM but has been **CANCELLED**. A NEW hearing date is planned to be held, if one is requested by the public during the open public comment period from October 22, 2021 to November 29, 2021 by 5:00 pm. **The informational public hearing is pre-scheduled for 6:30 p.m. on January 6, 2022 at the Madison Volunteer Fire Department, 1154 Taylors Island Rd, Madison, MD 21648. The pre-scheduled hearing will be cancelled if no hearing requests are received by 5 pm on November 29, 2021.** A poster session/display will be available from 6:00 PM to 6:30 PM where project drawings can be reviewed and MDOT Maryland Port Administration representatives will also be available to answer questions. Please check the Department's website for updates on the hearing status at the following link:

<https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/BarrenIsland.aspx>

Written comments and requests to be included on the interested persons list may be sent by November 29, 2021 to the Maryland Department of the Environment attention of Mary Phipps-Dickerson, 407 Race Street, Cambridge, Maryland 21613 or at Mary.Phipps-Dickerson@maryland.gov or 410-901-4033. Any further notices concerning actions on the application will be provided only by mail to those persons on the interested persons list.

## **Water Quality Certification - (410) 537-3837**

### **Dorchester County - EFFECTIVE 10/22/2021**

202160895/21-WL-0640/21-WQC-0331/MDOT Maryland Port Administration, Amanda Peñafiel, World Trade Center, 401 E. Pratt Street, Baltimore, MD 21202 has applied to restore a remote island habitat at Barren Island, which is located in Dorchester County adjacent to Upper Hoopers Island. The project is the smaller portion of the Mid-Chesapeake Bay Island Ecosystem Restoration Project and will include the restoration of approximately 83 acres of wetlands, construction of approximately 13,023 linear feet of new and modified stone sills and 4,620 linear feet of segmented breakwater to immediately provide increased protection to the eroding Barren Island and to the potential submerged aquatic vegetation (SAV) habitat to the east of Barren Island, and installation of 2 bird nesting habitat islands (approximately 8.5 acres total). Approximately 52,500 cubic yards of material that is unsuitable for construction foundation will be dredged from the northeast Barren Island stone sill location to an approximate depth of 7 feet and will be placed hydraulically or mechanically within the confined area behind the constructed stone sills at Barren Island. Approximately 429,000 cubic yards of authorized maintenance material dredged from small local federal navigation channels will be placed behind the confining stone sills up to the mean high water elevation to construct the wetlands. Wetlands will include low and high marsh plantings as well as intertidal mudflats. During final wetland planning, current conditions will be evaluated with respect to sea level rise projections and determinations of sustainable marsh elevations to identify high to low marsh ratios. A public



hearing for only the proposed work listed in this public notice is being held to gather information and hear testimony to assist the Department in making a determination regarding an application for a wetlands license and permits. A public hearing was scheduled at the Madison Volunteer Fire Department (1154 Taylors Island Rd, Madison, MD 21648) at 6:30 PM on November 15, 2021, with an informational poster session held from 6:00 PM – 6:30 PM but has been **CANCELLED**. A NEW hearing date is planned to be held, if one is requested by the public during the open public comment period from October 22, 2021 to November 29, 2021 by 5:00 pm. **The informational public hearing is pre-scheduled for 6:30 p.m. on January 6, 2022 at the Madison Volunteer Fire Department, 1154 Taylors Island Rd, Madison, MD 21648. The pre-scheduled hearing will be cancelled if no hearing requests are received by 5 pm on November 29, 2021.** A poster session/display will be available from 6:00 PM to 6:30 PM where project drawings can be reviewed and MDOT Maryland Port Administration representatives will also be available to answer questions. Please check the Department's website for updates on the hearing status at the following link:

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Contact Us

Privacy

Accessibility

1800 Washington Boulevard, Baltimore, MD 21230

(410) 537-3000

## **Public Comments**

**From:** [MM Whilden](#)  
**To:** [CENAB-MidBay Islands Project](#)  
**Subject:** [Non-DoD Source] Barren Island Supplemental Environmental Assessment  
**Date:** Tuesday, January 18, 2022 7:02:00 PM

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Thank you for the opportunity to review the draft supplemental Environmental Assessment (sEA) for the Mid-Bay Island Project at Barren Island and comment for the record. Based on documents available from USACE, mainly surveys conducted in 2003 and 2021, the baseline for terrapin populations and/or terrapin nesting in the project site remains unclear or undetermined. Please clarify the terrapin population or terrapin nesting baseline for the Barren Island area.

Thank you.

Marguerite Whilden  
The Terrapin Institute



CHESAPEAKE BAY FOUNDATION  
*Saving a National Treasure*

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January 18, 2022

U.S. Army Corps of Engineers  
Attn: Angie Sowers  
Planning Division  
10th Floor  
2 Hopkins Plaza  
Baltimore, MD 21201

Sent via email: [midbayislands@usace.army.mil](mailto:midbayislands@usace.army.mil)

**RE: Supplemental Environmental Assessment for the Barren Island Component of the Mid-Bay Project**

Dear Ms. Sowers,

Thank you for the opportunity to provide comments on the Supplemental Environmental Assessment for the Barren Island Component of the Mid-Bay Beneficial Use of Dredged Material project. Mid-Bay as authorized by Congress is a crucial next step in the development of dredged material management capacity under the State-federal Dredged Material Management Plan (DMMP).

The Chesapeake Bay Foundation (CBF) understands that both maintenance dredging and occasional expansion of navigation channels is a necessary element of maintaining port viability in a global marketplace and that capacity within the existing Poplar Island project is now foreseen.

CBF is pleased that the Barren Island component of the project is reaching the Environmental Assessment phase and supports the project for several reasons, including:

1. Beneficial reuse of dredged sediments can protect water quality from degradation associated with historic practices of open bay disposal.
2. Restoration of Barren Island may calm wave energy along the adjacent mainland marshes to the East, extending the life of those marshes.
3. There may be an opportunity to incorporating live oysters into the restoration to expand submerged aquatic vegetation, improve reef biodiversity and grow the reef vertically.

**1. Beneficial reuse of dredged sediments can protect water quality from degradation associated with historic practices of open bay disposal.**

Chesapeake Bay Foundation has a permanent seat on the Executive Committee for the DMMP and supports several of its committees, including the Innovative Reuse Committee which focuses on the beneficial use of dredged material for numerous purposes including increasing sediment supply to rebuild, restore and enhance coastal wetlands throughout Chesapeake Bay. At the same time, CBF's commitment to implementing the Blueprint or Bay TMDL supports beneficially reusing dredged sediments in a controlled manner to protect water quality from degradation associated with historic practices of open bay disposal of these sediments. CBF's Federal Affairs office has supported several congressional actions to authorize the Mid-Bay Project and appropriations for pre-construction, engineering and design.

**2. Restoration of Barren Island may calm wave energy along the adjacent mainland marshes to the East, extending the life of those marshes.**

Barren Island, like many in the Chesapeake, suffers from erosion and subsidence caused by sea level rise. Associated loss of wetlands, submerged aquatic vegetation and offshore nesting habitat for colonial waterbirds has become a critical sign of the climate crisis. Beneficially using dredged material generated as part of routine and expanding dredging for navigation to rebuild offshore islands and tidal wetlands can structurally replace some of what has been lost. Experience from Poplar Island shows that restored marshes and other coastal habitats in these remote locations away from human disturbance and mainland predators thrive and support some of the highest diversity and abundance of these wildlife species.

Moreover, the offshore location of Barren Island has the opportunity to calm wave energy along the adjacent mainland marshes to the East reducing the loss of wetland edges to wave erosion extending the life of those marshes under the reality of sea level rise. The siting and preliminary design of Barren Island also benefits from the experience and expertise of both MPA and the Corps of Engineers, but also the talented team of agency and academic researchers that have been adaptively managing Poplar Island.

**3. There may be an opportunity to incorporating live oysters into the restoration to expand submerged aquatic vegetation, improve reef biodiversity and grow the reef vertically.**

One opportunity CBF wishes to explore which could enhance the resilience of Barren Island is to incorporate live oysters within the 13,023 linear feet of new and modified stone sills and 4,620 linear feet of segmented breakwater. Scientific research suggests that incorporating living elements, like oysters, into hardened shoreline structures can reduce maintenance costs and maintain protection in the face of rising sea levels. To that end, we have joined the Mid-Bay Resiliency Working Group convened by MPA to discuss this design component and other resiliency measures. Consciously incorporating live oysters into the design of the perimeter stone sills will help improve water clarity to facilitate the expansion



of existing SAV beds at Barren Island. This artificial oyster reef would also support significantly higher nearshore biodiversity than a sandy or muddy bottom or the rocky revetment alone. Lastly, the natural growth pattern of oysters is to cement themselves together into a consolidated reef and grow vertically toward the water surface. This natural tendency of oysters would be expected to help the perimeter levee to grow vertically as sea levels rise extending the benefits of wave attenuation and containment of dredged material and restored marshes.

CBF is pleased that MPA is reaching the phase of permitting Barren Island and supports the Tidal Wetlands License. The early consideration of incorporating oysters into the final permitting and design will help maximize the success of future restoration efforts. For example, the diameter of rip rap used has been shown to affect the available interstitial space for stocking oysters, impacting their survival and potential for dislodgement. The slope of the structure, tidal range, and fetch may also play an important role. Researchers at the University of Maryland Center for Environmental Science have developed a Delft 3D hydrodynamics model to assess conditions under which incorporating oysters into such structures would be most effective. Given this approach is relatively new in Chesapeake Bay, CBF suggests that similar monitoring and adaptive management efforts engaging agency, non-profit, and academic partners that have been successful at Poplar Island be applied to this new approach to improving oyster habitat and resilience at Barren Island.

From the standpoint of implementation, we would like to offer that CBF's long experience and unique assets could be part of the oyster restoration component for both Mid-Bay islands once more detailed designs emerge. CBF's custom oyster restoration vessel can deploy millions of spat on shell into relatively shallow waters with precision placement more accurate than other vessels doing oyster restoration in the Bay. In addition, our program is designed to incorporate volunteers in the preparation of recycled shells for restoration significantly reducing the costs associated with buying prepared shell or spat on shell from hatcheries. Moreover, CBF has interest and capacity over the next few years to pivot our oyster restoration strategy to these kinds of coastal resilience applications of our oyster restoration program.

Sincerely,

A handwritten signature in black ink, appearing to read "Josh Kurtz", with a stylized flourish extending from the end.

Josh Kurtz  
Maryland Executive Director

## **Agency Comments**

**From:** [Runt, Christopher B CWO-4 USCG SEC MD/NCR \(USA\)](#)  
**To:** [CENAB-MidBay Islands Project](#)  
**Cc:** [Sowers, Angela M CIV USARMY CENAB \(USA\)](#); [D05-DG-SectorMD-NCR-Prevention-WWM](#); [D05-SMB-CGD5Waterways](#); [Jump, Lucas S PO1 USCG \(USA\)](#); [Smoak, Baxter B CDR USCG SEC MD/NCR \(USA\)](#)  
**Subject:** Mid-Chesapeake Bay Islands Ecosystem Restoration, Barren Island, Dorchester County, Maryland  
**Date:** Tuesday, December 21, 2021 10:29:42 AM  
**Attachments:** [PATON Application CG2554.pdf](#)  
[POPLAR ISLAND PATON.PDF](#)

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Good morning,

My name is CWO4 Christopher Runt and I am the Aids to Navigation Officer for USCG Sector Maryland-NCR.

We request that when construction begins for Barren Island and James Island for the Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Island Project) that USACE consider contacting the USCG to establish Private Aids to Navigation (PATON) at [CGD5Waterways@uscg.mil](mailto:CGD5Waterways@uscg.mil) or to the PATON Manager, Mr. Matt Creelman directly at [Matthew.K.Creelman2@uscg.mil](mailto:Matthew.K.Creelman2@uscg.mil). Please copy Sector Maryland-NCR on the e-mail at [D05-DG-SectorMD-NCR-Prevention-WWM@uscg.mil](mailto:D05-DG-SectorMD-NCR-Prevention-WWM@uscg.mil).

I have attached a blank PATON application as well as the application that was completed for Poplar Island. We had a series of vessel allisions with the stone walls surrounding Poplar Island prior to the establishment of the lighted and unlighted buoys that surrounded the island during construction.

Thank you.

Respectfully,

CWO4 Christopher Runt  
USCG Sector Maryland-NCR  
Aids to Navigation Officer  
410-576-2526

**From:** [Rebecca Thur -DNR-](#)  
**To:** [Sowers, Angela M CIV USARMY CENAB \(USA\)](#)  
**Cc:** [Roland Limpert -DNR-](#); [John Moulis -DNR-](#); [Mary Phipps-Dickerson -MDE-](#)  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Shellfish Aquaculture interests near Barren Island Ecosystem Restoration Project Area  
**Date:** Friday, January 7, 2022 2:04:13 PM  
**Attachments:** [Shellfish Leases near Barren Island.png](#)  
[Lease Coordinates near Barren Island Restoration Project 1-7-22.xlsx](#)

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Hi Angie,

At the interagency meeting on December 6th, I said that I would send you information about shellfish aquaculture leases in the vicinity of the Barren Island Ecosystem Restoration Project Area, for their consideration in spatial planning/mapping. We have tentative concerns about potential sedimentation impacts on three leases closest to (south of) the southernmost proposed construction activities.

Attached is a screenshot of the leases (in blue) in closest proximity to the project, and also a spreadsheet of the corner coordinates in DMS for each lease for your own mapping purposes.

Please let me know if you require any additional information about the use of these areas or their locations that may be helpful to your overall spatial planning exercises and impact assessments.

Regards,



**Rebecca Thur**  
Shellfish Leasing & Permitting Program  
Coordinator  
Aquaculture and Industry  
Enhancement Division  
Department of Natural Resources  
580 Taylor Ave., E-4  
Annapolis, Maryland 21401  
[rebecca.thur@maryland.gov](mailto:rebecca.thur@maryland.gov)  
(410) 260-8252 (O)  
(410) 260-8310 (F)  
[Website](#) | [Facebook](#) | [Twitter](#)

*Staff based out of the DNR Tawes Building in Annapolis are continuing to telework on a flexible schedule.*

Click [here](#) to complete a three question customer experience survey.

**From:** [sylvia.mosser@maryland.gov](mailto:sylvia.mosser@maryland.gov)  
**To:** [Sowers, Angela M CIV USARMY CENAB \(USA\)](#)  
**Cc:** [sylvia.mosser@maryland.gov](mailto:sylvia.mosser@maryland.gov)  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Acknowledgment of Clearinghouse Project: MD20220104-0002  
**Date:** Thursday, January 13, 2022 2:26:44 PM

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Hello Ms. Angela Sowers,

The following link includes the State Clearinghouse Review Process Acknowledgment letter for your project, Draft Supplemental Environmental Assessment (sEA): Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Island Project) at Barren Island and James Island with No Action Alternative and Eight Alternatives for Protective Measures and Habitat Restoration.

Click this link to view the acknowledgment letter,  
**[https://apps.planning.maryland.gov/EMIRC\\_Files/MD20220104-0002.zip](https://apps.planning.maryland.gov/EMIRC_Files/MD20220104-0002.zip)** . This is a 277 MB file.

Thank you.

Sylvia Mosser, Planner  
[sylvia.mosser@maryland.gov](mailto:sylvia.mosser@maryland.gov)  
410-767-4487

Myra Barnes, Lead Clearinghouse Coordinator  
[myra.barnes@maryland.gov](mailto:myra.barnes@maryland.gov)

[Please take our customer service survey.](#)



Larry Hogan  
*Governor*  
Boyd K. Rutherford  
*Lt. Governor*



Charles C. Deegan  
*Chairman*  
Katherine Charbonneau  
*Executive Director*

**STATE OF MARYLAND  
CRITICAL AREA COMMISSION  
CHESAPEAKE AND ATLANTIC COASTAL BAYS**

January 11, 2022

U.S. Army Corps of Engineers  
Attn: Angie Sowers  
Planning Division  
10th Floor, 2 Hopkins Plaza  
Baltimore, MD 21201

**Re: Mid-Chesapeake Bay Islands Ecosystem Restoration Project: Barren Island  
Draft Supplemental Environmental Assessment**

Dear Ms. Sowers:

We are in receipt of the draft supplemental Environmental Assessment (SEA) for the Maryland Department of Transportation's Maryland Port Administration's (MPA) Mid-Chesapeake Bay Islands Ecosystem Restoration Project. The purpose of the Mid-Bay Island Project is to: restore and protect wetland, aquatic, and terrestrial island habitat for fish, reptiles, amphibians, birds, and mammals; protect existing island ecosystems to prevent further loss of island and aquatic habitat; provide dredged material placement capacity for Federal navigation channels; increase wetlands acreage in the Chesapeake Bay watershed; decrease local erosion and turbidity; promote conditions to establish and enhance submerged aquatic vegetation; and promote conditions that support oyster recolonization. The project is located entirely within the Critical Area. This letter specifically addresses Critical Area Commission staff comments regarding the proposed work at Barren Island.

Due to MPA's status as a state agency and based on the description of the work proposed in the SEA, the project must comply with the Commission's regulations for state agency actions resulting in development on state-owned lands (COMAR 27.02.05). This includes the project receiving full review and approval by the Critical Area Commission. MPA staff has been in coordination with Commission staff regarding this process. This includes meetings to discuss the proposed development activities, the proposed impacts to the Critical Area, and the appropriate submission materials required to present this project to the Commission for approval. Based on the timeline given to our office, we expect this project to be presented to the Critical Area Commission in Spring 2022.

Thank you for the opportunity to provide comments. If you have any questions, please contact me at [nick.kelly@maryland.gov](mailto:nick.kelly@maryland.gov).

Sincerely,



Nick Kelly  
Regional Program Chief

cc: Amanda Peñafiel, Maryland Port Administration  
Maura Morris, Maryland Environmental Service  
Cassandra Carr, Maryland Environmental Service  
Paul Nevenglosky, NMP Engineering  
Abbie Coplin, NMP Engineering  
Kate Charbonneau, Critical Area Commission  
Annie Sekerak, Critical Area Commission



Larry Hogan, Governor  
Boyd Rutherford, Lt. Governor  
Jeannie Haddaway-Riccio, Secretary  
Allan Fisher, Deputy Secretary

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January 18, 2022

U.S. Army Corps of Engineers  
Attn: Angie Sowers  
Planning Division, 10th Floor  
2 Hopkins Plaza, Baltimore, MD 21201

Re: Maryland Department of Natural Resources comments to the Draft Supplemental Environmental Assessment (sEA) for the Mid-Chesapeake Island Ecosystem Restoration Project for Barren Island

Dear Ms. Sowers,

The Maryland Department of Natural Resources (DNR) has reviewed the Draft Supplemental Environmental Assessment (sEA) for the Mid-Chesapeake Island Ecosystem Restoration Project for Barren Island. DNR supports the selection of Alternative 8 as the preferred alternative and is also offering the following comments to the draft report. These comments are in addition to any comments that DNR has provided for previous study documents and in coordination meetings to date.

- General - DNR is concerned at how the Tar Bay WMA identity has been largely lost in these planning documents, and is providing the following comments:
  - This property is used for recreational hunting, fishing, bird watching, nature enjoyment, etc. by the public year-round. Upon restoration, the property and resulting constructed habitats will continue to be used by the public for a myriad of recreational uses.
  - During previous dredging projects that have used or affected other WMA properties, DNR has required a negotiated MOU / Use Agreement as a condition of authorizing the use of the WMA. The potential requirement for a MOU / Use Agreement for this project to use / affect the Tar Bay WMA property should be explored and initiated when warranted. The MOU / Use Agreement review process will include appropriate representation from within DNR units including the Office of the Secretary, the Office of the Attorney General, Environmental Review, Chesapeake and Coastal Services, the Critical Areas Commission, the Wildlife and Heritage Service, Land Acquisition and Planning, and Engineering and Construction Services.
  - DNR WHS Regional Operations would prefer to see sand-dominated dredge materials used to restore the beach-sand dune habitats at elevations strategically above MHW that have been lost on this property over time to erosion. Preferably, once the northeast sill has been constructed, sand-dominated dredge materials from a navigation channel maintenance project can be earmarked for use within the historic footprint of Tar Bay WMA as depicted by the 1998 shoreline as shown in Figure 11, on page 32. Restoration of sand dune habitat would aid in the restoration of suitable Diamondback terrapin nesting habitat within the Barren Island complex, as mentioned elsewhere in the comments.
  - DNR WHS Regional Operations is concerned about the restoration plan schedule. It is understood that at this time the sEA accounts for only the construction of the stone breakwater and sill components, however, DNR has questions about the frequency and quantity of nearby navigation channel maintenance dredging projects that will supply material for wetland / beach / dune restoration efforts. DNR is concerned that the constructed breakwaters and sills will remain on the landscape over a long

period of time, awaiting the supply of local dredging materials needed to initiate restoration activities, without understanding the impacts to the Tar Bay WMA in the interim. Additionally, DNR has questions regarding funding of future dredging, because DNR has had to fund smaller dredging projects in federal navigation channels in the past.

- Section 3.6 – DNR understands that the sand borrow areas are still being identified. Please continue to include DNR in site selection for the borrow location.
- Section 4.3.3 - DNR commends the Corps for incorporating hydrodynamic modelling into their planning and design and selecting the alternative with the least amount of (modelled) indirect SAV impacts. While permanent SAV impacts are mentioned in the sEA, it would have been beneficial to list the total SAV impact for each alternative design as well.
- Section 4.3.3 – Based on Bay-wide monitoring data, there were some large regional SAV losses in the Mid-Bay area in 2018/2019 and those beds are still recovering. These surveys (not affiliated with the Mid-Bay project) conducted in 2021 detected more SAV in the vicinity compared to 2020. Although the 2020-2021 SAV surveys performed for the Mid-Bay project did not detect significant SAV presence around the northern remnant, there were beds detected in the vicinity of Tar Bay WMA during 2021 and SAV was mapped (via VIMS surveys) throughout the project area in previous years. There is potential for SAV beds to further expand into areas planned for wetland restoration or sill construction in the years before the project is constructed. The following time of year restriction is typically applied to projects within 500 yards of SAV: *“To avoid potential adverse impacts to submerged aquatic vegetation beds, no instream work should be conducted from April 15 through October 15 of any year.”* DNR may request SAV surveys during the growing seasons immediately before construction to determine which portions of the project area and sill construction will be subject to this time of year restriction.
- Section 4.3.3 - SAV protection is listed as one of the project’s environmental benefits. DNR requests that SAV habitat monitoring be included in the project's post-construction monitoring to ensure that increased SAV habitat protection is a project outcome.
- Section 4.3.4 – The northeast sill encroaches into the boundary of the Great Bay historic oyster bar. DNR believes that the benefits for erosion protection to the Tar Bay Wildlife Management Area (WMA) (DNR managed land) outweighs impacts to this bar which is believed to provide low quality habitat. The sEA proposes seeding the outside of the breakwater with shell and spat which could be considered offsetting even any minimal impacts. DNR encourages oyster seeding on the outside of the breakwaters and sill for this project.
- Section 4.3.4 - DNR appreciates the sEA's acknowledging time of year restriction protections for oyster bars. The Great Bay bar is a historic bar believed to have limited productivity, and time of year restrictions are typically applied to state designated Natural Oyster Bars (NOBs) and oyster restoration sites. At this time DNR is prioritizing the Submerged Aquatic Vegetation time of year restriction for this project, which is described above. Please continue to coordinate with DNR regarding time of year restrictions as engineering and design for this project progresses.
- Section 4.3 – Dolphins are frequent visitors to the Chesapeake Bay during the summer months and documentation on the presence of dolphins in the Chesapeake Bay has been increasing in the past few years. Although marine mammals are addressed in Section 5.9, it may also be appropriate to discuss their potential presence in Section 4.
- Section 4.3.8 – Although oyster bars are discussed extensively in Section 4.3.4, the Commercial Fisheries section should emphasize the importance of the oyster fishery, including shellfish aquaculture, in the vicinity of Barren Island. During interagency meetings, DNR has expressed concerns about potential sedimentation impacts on at least three commercial shellfish aquaculture leases closest to (south of) the southernmost proposed construction activities. DNR has provided the project team with information on these existing leases, including boundary coordinates, for consideration in project planning. DNR requests that leaseholders in the vicinity of the project receive a 30-day pre-construction notification for construction activities on the south side of the island. Please contact the DNR Aquaculture and Industry Enhancement Division for an updated leaseholder list and contact information prior to notification.

- Section 4.3.8 – Additional coordination for impacts to commercial crabbing and fishing around Barren Island may be needed as project design progresses and construction begins.
- Section 4.4.1 – Diamondback Terrapin nesting has been documented on the beaches of Barren Island, including the west-side beaches of the northern remnant where wetland restoration is proposed to occur. Terrapin protection BMPs similar to those that were implemented at Poplar Island may be needed for activities impacting sandy shorelines during the nesting season (May through September). Additionally, if there is any way to allow beach habitat to re-establish or be created adjacent to the wetland areas, that would be helpful for terrapin nesting and hatchling/ juvenile habitat.
- Section 4.4.3 – DNR appreciates the extensive surveys that have been performed to document the wildlife and vegetation on Barren Island, and acknowledging potential time of year restrictions for raptors. DNR WHS might also have construction disturbance concerns for the existing great blue heron colony on Barren Island itself, for which we would likely ask for a time of year restriction (TOYR) during nesting season (February 15 through July 31) within 660' of the colony. Waterfowl concentration areas also surround the island and most of Tar Bay, and for shoreline work we would generally ask for a TOYR from November 15 through March 1, for projects above a certain threshold. Please continue to coordinate with DNR regarding these time of year restrictions.
- Section 4.5.1 – Although the presence of Tar Bay Wildlife Management Area is discussed earlier in the report, this area is DNR managed land which is a separate entity from the USFWS lands and should be noted in this section. Please reference the comments above regarding Tar Bay WMA.
- Section 4.5.9 – Construction related noise disturbances may be subject to time of year restrictions, as discussed above and in Section 4.4 of the report.
- Section 4.5.10.3 – Critical Areas coordination should be conducted directly with the Maryland Critical Area Commission.
- Section 5.6 – Please continue to coordinate with DNR regarding impacts to rare, threatened, and endangered species as project design and construction progresses.

The Maryland Department of Natural Resources appreciates the opportunity to review and comment on the Draft Supplemental Environmental Assessment (sEA) for the Mid-Chesapeake Island Ecosystem Restoration Project for Barren Island. We look forward to our continued participation in this project. Please feel free to contact me if you would like to discuss these comments in further detail.

Sincerely,



Gwen Gibson  
 Maryland Environmental Service/ Transportation Liaison  
 Environmental Review Program  
 Department of Natural Resources



**From:** [Witman, Timothy](#)  
**To:** [CENAB-MidBay Islands Project](#); [Sowers, Angela M CIV USARMY CENAB \(USA\)](#)  
**Cc:** [Nevshehirlian, Stepan](#); [Fitzgerald, Megan](#); [Mazzarella, Christine](#)  
**Subject:** [Non-DoD Source] EPA Comments: Mid-Chesapeake Bay Island Ecosystem Restoration Project at Barren Island - supplemental Environmental Assessment  
**Date:** Tuesday, January 18, 2022 6:32:58 PM

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Ms. Sowers,

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the December 14, 2021 public notice to solicit comments regarding the draft supplemental Environmental Assessment (sEA) for the Mid-Chesapeake Bay Island Ecosystem Restoration Project at Barren Island. This sEA was prepared by the U.S. Army Corps of Engineers in partnership with the Maryland Department of Transportation, Maryland Port Administration.

EPA understands the purpose and need of this project and offers the following comment:

- Prior to the start of dredging activities, EPA recommends sampling the proposed dredged material to confirm the quality of the dredged material and determine the viability of its use. Reference samples from the planned dredged material placement sites should also be identified and collected. By comparing test results from the dredged material and reference sediment samples, a determination can be made on the potential for the dredged material to cause unacceptable adverse impacts to benthic organisms at the ocean disposal site and potentially exclude it from consideration.

EPA also appreciates the outreach and coordination letter sent on August 14, 2020 to Ms. Barbara Rudnick. Please note that Barbara has taken a new position at EPA HQ and Stepan Nevshehirlian is the Chief of the Environmental Assessment Branch. Please send future correspondence to Stepan Nevshehirlian by email at [Nevshehirlian.Stepan@epa.gov](mailto:Nevshehirlian.Stepan@epa.gov).

Thank you,  
Tim

**Timothy Witman**

Environmental Assessment Branch  
Office of Communities, Tribes and Environmental Assessment  
Phone: (215) 814-2775  
Email: [Witman.Timothy@EPA.GOV](mailto:Witman.Timothy@EPA.GOV)

**USEPA - Mid-Atlantic Region**

1650 Arch Street (3RA12)  
Philadelphia, PA 19103-2029

**From:** [Troy Nowak -MDP-](#)  
**To:** [Sowers, Angela M CIV USARMY CENAB \(USA\)](#)  
**Cc:** [Leasure, Charles W CIV USARMY CENAB \(USA\)](#); [Bean, Ethan A CIV USARMY CENAB \(USA\)](#); [Beth Cole -MDP-](#); [Susan Langley -MDP-](#)  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Re: MHT Comments - Mid-Chesapeake Bay Island Ecosystem Restoration Project at Barren Island - supplemental Environmental Assessment  
**Date:** Wednesday, January 19, 2022 12:13:47 PM

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MHT recently received clarification from Ethan Bean, COE Cultural Resources Specialist, explaining that due to scheduling constraints the Barren Island portion of the Mid-Chesapeake Bay Island Ecosystem Restoration has been divided into multiple projects. And, at this time, COE requests comments on portions of the supplemental EA related to construction of sills, breakwaters, and wetland and bird island restoration within Barren Island's historic footprint only. This request does not include review of activities and locations related to the potential need for dredging of borrow areas, access channels, or other bottom disturbing activities. We understand investigation and selection of borrow areas and any additional construction or bottom disturbing activities deemed necessary as project planning proceeds will be considered as separate action(s) for environmental and historic preservation review.

MHT has no concerns related to construction of sills, breakwaters, and wetland and bird island restoration located within Barren Island's historic footprint only and recommends a determination of *no historic properties affected* for these proposed activities.

We request and look forward to review of any borrow areas, access channels, or other additional project elements as planning proceeds.

Thank you for this opportunity to comment.



**Troy J. Nowak**  
**Asst. Underwater Archeologist**  
**Maryland Department of Planning**  
**Maryland Historical Trust**  
100 Community Place  
Crownsville, MD 21032  
[Troy.Nowak@maryland.gov](mailto:Troy.Nowak@maryland.gov)

Pronouns - he/him/his

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On Wed, Jan 5, 2022 at 3:52 PM Troy Nowak -MDP- <[troy.nowak@maryland.gov](mailto:troy.nowak@maryland.gov)> wrote:

Thank you very much for your email. It appears that MHT did not previously receive a request for comment for this specific notice / draft sEA, but we do not require additional review time.

Based on the current project alternatives, MHT's concerns are limited to ancillary activities which involve bottom impacts located outside of the historic island footprint in areas where Phase I Identification surveys designed to locate submerged archaeological historic properties have not been completed. Specifically, staging, anchoring, access, and borrow areas, such as the previously proposed borrow area identified in our July 13, 2021 letter to COE, MDE, and MPA (attached).

We understand project design is currently at 35% completion. Appendix A of the current draft sEA notes that sand borrow areas will be determined as the project design is finalized – "A sand borrow source will likely be required for foundation removal and replacement, construction of the bird islands, and construction of containment dikes. Additional drilling will be performed prior to the 95% design level to investigate potential borrow sources. This section will be updated at the 95% design level with the borrow area analysis."

As a result, we consider historic preservation review of this project as ongoing. Additional coordination with MHT will be necessary to complete historic preservation review. Further work, such as Phase I Identification surveys, may be recommended in areas of expected bottom impacts located outside of the historic island footprint where Phase I Identification surveys designed to locate submerged archaeological historic properties have not been completed.

Please contact me if you have any questions. Email is best.

We look forward to continued coordination as project planning proceeds.

Thank you for this opportunity to comment.



**Troy J. Nowak**  
**Asst. Underwater Archeologist**  
**Maryland Department of Planning**  
**Maryland Historical Trust**  
100 Community Place  
Crownsville, MD 21032  
[Troy.Nowak@maryland.gov](mailto:Troy.Nowak@maryland.gov)

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*Governor*  
Boyd K. Rutherford  
*Lt. Governor*



Charles C. Deegan  
*Chairman*  
Katherine Charbonneau  
*Executive Director*

**STATE OF MARYLAND  
CRITICAL AREA COMMISSION  
CHESAPEAKE AND ATLANTIC COASTAL BAYS**

January 25, 2022

U.S. Army Corps of Engineers  
Attn: Angie Sowers  
Planning Division  
10th Floor, 2 Hopkins Plaza  
Baltimore, MD 21201

**Re: Mid-Chesapeake Bay Islands Ecosystem Restoration Project: Barren Island  
Draft Supplemental Environmental Assessment – Follow-Up**

Dear Ms. Sowers:

This letter is provided as a follow-up to the January 24, 2022 meeting between staff from the U.S. Army Corps of Engineers, the Maryland Department of Transportation's Maryland Port Administration (MPA), and the Critical Area Commission regarding the Mid-Chesapeake Bay Islands Ecosystem Restoration Project. It is our understanding that the Barren Island portion of the Mid-Bay Restoration Project is in the final stages of receiving a National Environmental Policy Act (NEPA) Finding of No Significant Impact (FONSI). As requested, below is an outline of the expected timeline for review and approval of the Barren Island portion of this project by the Critical Area Commission:

1. Due to MPA's status as a state agency and based on the description of the work proposed, the project must comply with the Commission's regulations for state agency actions resulting in development on state-owned lands (COMAR 27.02.05). This includes the project receiving full review and approval by the Critical Area Commission.
2. The Commission received an official submission package from MPA on January 19, 2022, with a request to be placed on the March 2, 2022 Critical Area Commission agenda.
3. Commission staff is currently reviewing the submitted materials to determine completeness. Based on our preliminary review of the application materials and based on our understanding that the Barren Island project will be heard by the Maryland Board of Public Works in March, we expect that this project will be placed on the next available

Critical Area Commission meeting agenda<sup>1</sup>. Commission staff will contact MPA if additional information is required.

Thank you for the opportunity to provide supplemental comments. If you have any questions, please contact me at [nick.kelly@maryland.gov](mailto:nick.kelly@maryland.gov).

Sincerely,



Nick Kelly  
Regional Program Chief

cc: Amanda Peñafiel, Maryland Port Administration  
Maura Morris, Maryland Environmental Service  
Annie Sekerak, Critical Area Commission

---

<sup>1</sup> The next scheduled Critical Area Commission meeting is March 2, 2022; currently, we expect the Barren Island project to be presented at this meeting. However, should the March meeting be cancelled, the MPA project would then be expected to be heard on April 6, 2022.





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
GREATER ATLANTIC REGIONAL FISHERIES OFFICE  
55 Great Republic Drive  
Gloucester, MA 01930-2276

January 26, 2022

William P. Seib, Chief  
Operations Division  
Baltimore District  
U.S. Army Corps of Engineers  
2 Hopkins Plaza  
Baltimore, MD 21203-1715

Re: Draft Supplemental Environmental Assessment for Mid-Chesapeake Bay Islands Ecosystem Restoration Project at Barren Island

Dear Mr. Sieb:

We have reviewed the draft supplemental Environmental Assessment (sEA), including the enclosed essential fish habitat (EFH) assessment and associated materials, provided on December 20, 2021, for the Preconstruction Engineering and Design (PED) phase of the Barren Island component of the Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Island Project) in, Dorchester County, Maryland. In 2009 the Mid-Bay Feasibility Report was released. Subsequently, the Mid-Bay Island Project was authorized under Section 7002 of the Water Resources Reform and Development Act of 2014. The record of decision was signed in 2019, thus initiating the PED phase of the study. The Baltimore District (the District) prepared this sEA in accordance with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.) to assess the potential environmental impacts from the proposed action. The District is developing this project in partnership with the Maryland Department of Transportation Maryland Port Administration (MDOT MPA).

The draft sEA contains updated information from the Feasibility Report relevant to Barren Island. While we are concerned about the cumulative impacts of the larger scale Mid-Bay project, which are briefly considered in your NEPA documents, our comments in this letter are directed in response to the Phase I proposal described in the PED and primarily focused on activities planned around Barren Island. We anticipate extensive future coordination as other phases are developed. Furthermore, our comments reflect our current understanding of the project. Several design elements have recently changed and certain impacts to our resources remain unclear. The NEPA documents provided also contain several inconsistencies and inaccuracies. As a result, our comments and EFH conservation recommendations reflect that lack of clarity and missing or conflicting information. We hope that the responses you provide to our comments and EFH conservation recommendations will help resolve those inconsistencies and more clearly describe the proposed action. We may then be able to revisit our EFH conservation recommendations.



### *Project Description*

The designated Preferred Alternative, Alternative 8, includes the construction of 29.6 acres of stone sill and breakwater structures in anticipation of future deposition of dredged material in the space between these structures and the existing island wetland/upland complex. The following design elements are considered during the current project phase:

- 13,023 linear feet of stone “sill” structure approximately 60 feet wide, with a crest elevation of + 5.8 ft MHW. The total footprint of this structure is approximately 18 acres. The sill is designed to accommodate a 30-year event and the design presents opportunities for increasing sill height to accommodate anticipated future sea level rise.
- A 4,260 lf stone breakwater approximately 80-feet wide, with a crest elevation of +8.3 ft MHW is proposed along the island’s western shoreline. This structure will impact a total area of approximately 8 acres.

The most recent Design Document Report (DDR) provided is limited in scope and only addresses the design of containment sills/dikes. The sill/breakwater design for Alternative 8 represents the 35% design outcome which was refined following the completion of hydrologic and hydraulic (H&H) modeling. The results of these models will be incorporated into the 65% design submission. Additional impacts are proposed in future phases to meet project goals/objectives. These phases will entail the extension of the northeast sill, the creation of two bird nesting islands, and filling of shallow waters to create wetland cells. Specific details include:

- Approximately 429,000 cy of maintenance dredging material will be placed behind the proposed sills and contained using temporary sand berms. Sand berms will result in 1.41 acres of impacts to existing wetlands. Dredged material, as available, will be used to fill shallow water areas across three placement cells: 12.4 acres behind the northwest sill, 42.5 acres behind the southwest sill, and 27.9 acres behind the northeast sill.
- An unspecified extent of existing benthic habitat will be dredged for the purpose of creating a suitable foundation for northeast sill. The temporary channel is proposed to be 60 ft wide and -10 MLW. The source of the sand fill for foundation replacement has not yet been determined and will be identified following ongoing geotechnical surveys. However, we are aware that certain areas under consideration may include areas colonized by submerged aquatic vegetation in the recent past.
- Using sand and rock fill, two additional islands will be created for the expressed purpose of colonial bird nesting. These islands will impact 4.9 acres and 3.41 acres of aquatic habitat, respectively. Target elevations are +8.3 MHW at the breakwater with slopes to existing depths (approx. -7 feet MLW). Fish reef structures will likely be used to attenuate wave energies on the northeast aspect of these islands.
- Outfalls or gaps will be constructed in the proposed sills for the purpose of dredged material dewatering, which will be in compliance with water quality standards set by the State of Maryland.

## *Consultation History*

We provided comments and recommendations dated May 20, 2005, in response to your EFH assessment drafted for the Mid-Chesapeake Island Ecosystem Restoration Integrated Feasibility Report & Environmental Impact Statement (EIS). These comments included recommendations to limit the source of material used for wetland restoration at Barren Island to navigation-related projects, to generally increase the number of tidal inlets in these projects, and to include crenulations along proposed stone structures to present additional habitat complexity. It remains unclear whether these recommendations will be fully implemented.

We provided further comments in our May 12, 2017, letter issued in response to the updated EFH assessment provided April 10, 2017. That letter requested updated biological information to inform our review of the project and included recommendations that areas of mapped SAV be avoided, and low marsh habitat creation be maximized. The most recent EFH assessment contains much of the information requested in that letter and we appreciate the extent to which additional biological data were collected and presented in this update.

While not part of this consultation, we have engaged with the District, MDOT MPA, and other state and federal agencies on multiple restoration, enhancement, and dredge material reuse projects, including the John Sarbanes Poplar Island Ecosystem Restoration Project. Since 1995, NMFS has conducted annual surveys to assess the relative success of the Poplar Island project in provisioning habitat for aquatic estuarine species. Given the thematic similarities between the Mid-Bay Island Project and those activities undertaken at Poplar, the designs of this project should be improved by building upon the knowledge gained through that research and other technical expertise available.

## **Authorities**

The Magnuson Stevens Fishery Conservation and Management Act (MSA) requires federal agencies such as the Corps to consult with us on projects that may adversely affect EFH. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in the consultation process. Please see our website (<https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-assessment-consultations>) for further information regarding your agency's obligations in this process, including the required response to our EFH conservation recommendations (CRs). In addition, the Fish and Wildlife Coordination Act (FWCA) requires all federal agencies to consult with us when proposed actions might result in modifications to a natural stream or body of water. It also requires that federal agencies consider the effects that these projects would have on fish and wildlife and provide for the improvement of these resources.

## Aquatic Resources and Anticipated Impacts from Proposed Actions

The project area presents a wide range of conditions and habitats suitable for a diverse suite of aquatic organisms. Several of these species are federally managed and have designated EFH. Since EFH also includes those waters, their associated qualities (e.g., turbidity, dissolved oxygen), and prevalent prey species, the proposed project will adversely impact EFH through a variety of complex and interacting pathways. Several additional species that are not federally managed but are of concern to our agency due to their ecological, economic, and/or historical value also occur in the project area. Impacts to these species are largely dismissed in your EFH assessment for reasons ranging from relative sea-level rise (RSLR) presenting greater quantities of aquatic habitat to certain life stages being “good swimmers.” While these concepts may be true in the most basic sense, they lack a nuanced perspective of aquatic habitats and the complexities of estuarine food web dynamics. As a result, we remain concerned that all practical efforts are not being made to minimize the impacts of these substantial dredging/filling activities and offset unavoidable impacts through the creation of productive aquatic systems. We briefly describe these resources and associated considerations in the subsections below.

### *Federally Managed Fish Species and Prey Species*

As you are aware, the project area contains designated EFH for seven species of fish, including bluefish (*Pomatomus saltatrix*), summer flounder (*Paralichthys dentatus*), black sea bass (*Centropristis striata*), windowpane (*Scophthalmus aqueous*), butterfish (*Peprilus triacanthus*), clearnose skate (*Raja eglanteria*), and scup (*Stenotomus chrysops*). These species use the shallow waters and the intertidal marshes around Barren Island as forage, nursery, and refuge habitat. Based upon the information provided in Appendix C, the placement of dredged material in the shallow waters around Barren Island and Tar Bay Wildlife Management Area (WMA) will have a direct adverse effect on EFH for several species and their prey by converting shallow-water habitats (e.g., SAV, tidal flats) to low and high marsh. The data presented in that survey indicates that federally-managed species such as bluefish and summer flounder use this habitat seasonally and that estuarine-resident prey species (e.g., sheepshead minnow *Cyprinodon variegatus*) are present throughout much of the year. This area also likely serves as seasonal foraging ground for other recreationally and commercially valuable species (e.g., striped bass *Morone saxatilis*) due to the documented presence of preferred prey items such as menhaden (*Brevoortia tyrannus*) and structured habitats (e.g., fallen trees).

The majority of the resulting impacts to EFH, including nursery habitat and prey species, will occur through the permanent conversion of subtidal shallows to stone sills/breakwaters and areas filled with dredged material. Compensatory mitigation has not been proposed to offset this loss of habitat and associated ecological functions. However, some of the lost or diminished aquatic habitat and functions can be restored and possibly enhanced in the future through the creation of intertidal low marsh, tidal flats, creeks/inlets, and potentially fish reef structures as part of the later phases of the project. Information gathered during years of study at Poplar Island and the surrounding marshes should be used to inform the design of these elements to maximize their aquatic habitat value. This includes maximizing the width and depth of tidal inlets, connecting tidal creeks to existing freshwater inputs, and providing a diversity of structured habitat (e.g., vegetation, reefs) to create a continuity of refugia for aquatic life.

### *Emergent Tidal Wetlands*

Intertidal marshes of the Delmarva peninsula provide many ecological functions including fish and wildlife habitat, primary productivity via plant/microalgae/fungal growth, nutrient transformation, sediment retention, and carbon sequestration. Colonization by different species of emergent tidal marsh vegetation is dictated primarily by the frequency and duration of tidal inundation (hydroperiod). The assemblages of other primary producers (e.g., microalgae) and the associated benthic, epibenthic, and macrofaunal communities also exist along this continuum (Visser et al., 2019, Ziegler et al., 2020). The extent to which the productivity of these vegetative communities contributes to overall estuarine productivity is mediated in large part by the frequency of tidal flooding and their connectivity to tidal channels. The primary production of low marsh (i.e., regularly flooded) wetlands forms the base of the food web that supports invertebrates and forage fish that are then prey for larger fish such as bluefish. The low marshes, creeks, and open waters within the project area also provide habitat for a number of federally managed species and their prey. Tidal creeks and intertidal flats are an especially important habitat for juvenile summer flounder.

The surface elevation of intertidal emergent wetlands exists in dynamic equilibrium as influenced by a variety of factors including tidal inundation, plant growth, and sediment availability (Cahoon et al., 2009). For example, the mobilization of sediments from an eroding marsh edge allows for liberated sediments to be deposited on adjacent marshes, thus maintaining elevation relative to sea level (Ganju, 2019). Similarly, tidal creeks in stable marshes also exist in equilibrium whereby net sediment transport is at or near zero (Lazoni and Seminara, 2002; Ganju et al., 2017). They also serve as conduits for the delivery of sediment-laden waters to the marsh platform, which is one mechanism that can facilitate marsh platform accretion and long-term marsh persistence relative to sea level (Pratolongo et al., 2019). The dynamic nature of these systems points to the importance of establishing an understanding of the sediment budget for a particular site and incorporating this information into the design of created wetlands. We encourage you to consider these complexities during the formulation of wetland cell designs in future project phases to maximize the resilience of constructed features.

We recognize that island habitats and their corresponding fringing low marsh in the Chesapeake Bay are negatively influenced by erosion and RSLR (Beckett et al., 2016; Kirwan et al., 2016) which historically has led to the contraction/loss of islands and extensive upland conversion to tidal marsh (Schieder et al., 2018). However, low marsh habitat in the broader Chesapeake Bay is eclipsed by high marsh at a ratio of 3 to 1 (Correll et al., 2018), although the proportion of low marsh fringing island habitats is likely much higher. Fringing marshes of the Chesapeake Bay are experiencing ongoing, significant edge erosion associated with storm activity and RSLR, which threatens the ecological integrity of the Chesapeake Bay estuary. As a result, some level of disturbance may be appropriate to ensure the long-term integrity of these marsh/island complexes, provided the adverse effects to EFH and federally managed species are minimized and unavoidable impacts are offset through the creation of intertidal marsh that is connected to other near-shore fisheries habitats (e.g., reefs, SAV) via tidal creeks.



### *Submerged Aquatic Vegetation*

As described in Appendix C, areas in the vicinity of the proposed placement site are also annually colonized by submerged aquatic vegetation (SAV), primarily widgeon grass (*Ruppia maritima*) and horned pondweed (*Zannichellia palustris*). SAV is designated a habitat area of particular concern (HAPC) for summer flounder because it has been demonstrated to be preferred feeding and resting habitat (Orth and Heck, 1980; Lascara, 1981; Rogers and Van Den Avyle, 1983; Heck and Thoman, 1984) for this recreationally and commercially valuable species. HAPCs are a subset of EFH that are either rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area. Because of this, individual, cumulative and synergistic effects are a particular concern in these habitats. The Mid-Atlantic Fishery Management Council has defined the summer flounder HAPC as all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH. Because SAV, especially widgeon grass, can exhibit large spatial fluctuations from year to year the widely accepted practice for defining SAV habitat is to consider areas identified by the Virginia Institute of Marine Science (VIMS) as supporting SAV based on surveys conducted in the five most recent years. Any area mapped in those five years is considered to be habitat that supports SAV, even if SAV is not found there on a given date during the growing season.

The proposed filling activities around Barren Island will result in the permanent loss of approximately 34 acres of bottom that has supported SAV in recent years, with an unspecified subset of that area being directly impacted through the construction of stone structures. The construction activities associated with this project will likely also adversely affect SAV through a variety of direct and indirect impacts. For example, vessel operation in the project area may result in the disturbance of subaqueous bottom which may cause the direct destruction of SAV during the growing season and inhibit recolonization during future growing seasons (Sagerman et al., 2020). Also, the introduction of stone structures will likely cause localized scour, notably in the vicinity of the northeast sill, that could permanently render additional areas unsuitable for future SAV colonization. This combination of disturbances will result in permanent direct and indirect impacts to annually recurring SAV beds in the area immediately adjacent to the project placement site. While we concur that the no action alternative would likely result in greater overall long-term impacts to existing SAV habitat located between Barren and Hoopers islands, this does not obviate the need to implement avoidance and minimization measures for any of the build alternatives, including your preferred alternative. Finally, we appreciate the extent to which surveys and H&H modeling has been completed with specific attention to SAV habitat and encourage you to consider the secondary effects of sill-induced scour on habitat suitability for SAV while plans are developed for the northeast sill.

### *Oyster Reef*

Oyster reef habitats have been identified as productive fish habitat in the Chesapeake Bay and throughout their range. In their analysis, McGinty et al. (2019) determined that almost all productive fishing grounds in the Maryland portion of Chesapeake Bay occur in the immediate vicinity of natural oyster bars and offer a review of the literature linking oyster bars with fish habitat in this region. The waters surrounding Barren Island present oyster reef habitat which is valuable for a variety of commercially (e.g., black sea bass, striped bass) and recreationally important species of fish and their prey. These areas also host a variety of oyster aquaculture

leases that support local watermen. The proposed dredge and fill activities associated with the northeast sill will result in direct impacts to a documented oyster bar which should be offset through habitat enhancements (e.g., reef creation, oyster reef enhancement) elsewhere.

### *Tidal Flats*

Intertidal and subtidal unvegetated flats are vitally important habitats for various fish and invertebrates. Because of their landscape position and setting within the tidal frame, intertidal and subtidal unvegetated flats are by nature constrained, typically making up only a small portion of the habitat within a system. These areas play an important role in regard to primary production, secondary production and water quality. An extremely productive microalgal community typically occupies the surface sediments (MacIntyre et al., 1996) and can represent a significant portion of overall primary productivity in a system (Pinckney and Zingmark 1993; Buzzelli et al., 2002). Benthic microalgal, bacterial, and imported primary production in the form of phytoplankton and detritus support diverse and highly productive populations of benthic animals in and on intertidal and subtidal un-vegetated flats. These include ciliates, rotifers, nematodes, copepods, annelids, amphipods, bivalves and gastropods, which are preyed upon by mobile predators (i.e., wading birds, fish) at different stages of the tide. This dynamic system provides various ecological functions, including: nursery grounds for early stages of development of many species; refuges and feeding grounds for a variety of forage species and juvenile fishes; significant trophic support to fish and shellfish (Sullivan and Currin 2000; Page and Lastra 2003; Currin et al., 2003); and, stabilization of sediments and modulation of nutrient fluxes (Sundback et al., 1991; Miller et al., 1996; Cerco and Seitzinger, 1997; Yallop et al., 1994, 2000).

Although they were not surveyed/delineated for this sEA, aerial imagery indicates that tidal flats will likely be filled to create stone structures and associated marsh cells. To offset these losses, we recommend that existing flats be incorporated into wetland cell design to the extent possible and that additional tidal flat habitat be created as an integral habitat feature when wetland cells are designed in future project phases.

### *Diadromous Fish*

Diadromous fish use the shallow waters of the mainstem Chesapeake Bay as migrating, resting, nursery, and feeding habitats at various points in their complex and diverse life histories. These species include anadromous fishes such as striped bass (*Morone saxatilis*), white perch (*Morone americana*), hickory shad (*Alosa mediocris*), American shad (*A. sapidissima*), alewife (*A. pseudoharengus*), blueback herring (*A. aestivalis*). The catadromous American eel (*Anguilla rostrata*) also uses the project area to complete similar life history stages. All of these species are either currently commercially and recreationally valuable (e.g., striped bass) or formerly supported expansive coastal fisheries before populations (e.g., *Alosa* spp., American eel) reached historic lows due to human activities. Due to their broad economic value, cultural significance, and need for conservation, we advocate for avoidance and minimization efforts to protect these species under the authority of the FWCA. Project activities, such as dredging may disturb these species during certain stages (e.g., spawning) of their complex life histories and certain avoidance and minimization measures, such as seasonal work windows or measures to reduce the release of suspended sediments into the water column, may be necessary for future project phases.

## Concerns and Recommendations

Overall, the Mid-Bay Island Project will convert approximately 2,200 acres of shallow-water habitat into rock sills, intertidal wetlands with tidal creeks, infrequently flooded high marsh, and uplands. Of these two islands, only approximately 1,750 acres was historically documented (ca. 1875) to be occupied by uplands and intertidal wetlands. While we acknowledge the value of remote island habitat for a variety of species, we strongly recommend that impacts to existing priority habitats (e.g., SAV, oysters) be minimized and that productive intertidal and subtidal habitats be created to offset these losses. We support limiting placement of dredged material to elevations at or below MHW, as is indicated throughout the sEA, because this elevation corresponds with the transition area between low and high marsh. Conversely, the document also suggests that considerations to change the high:low marsh ratio from what was previously established during the feasibility stage (i.e., 80% low and 20% high marsh) are underway in anticipation of RSLR. These changes have not been adequately justified and the justifications presented in the sEA appear to be based on simplistic representations of marsh ecosystems and their responses to RSLR.

Reducing created low marsh habitat will diminish the ability of these projects to offset proposed losses, which include extensive shallow-water fill with stone and dredged material, altered hydrodynamic conditions, shallow-water habitat alterations, and new access dredging. All biota found in this remote Chesapeake Bay island habitat, including several target avian species, depends heavily on aquatic biological productivity associated with regularly inundated salt marshes, tidal flats, creeks/inlets, SAV, and other shallow water habitats. The losses of tidal marsh elsewhere in the region due to RSLR, erosion, and upland development are not sufficient justification for these proposed fills. Rising sea levels pose substantial challenges to tidal wetlands. However, the best mitigation for those challenges is not through the expansive creation of high marsh, but rather through careful planning and adaptive management to achieve project goals. These measures include using updated tidal datums (anticipated 2025), establishing low marsh above the mean tide level (see: Raposa et al., 2016), and planning for adaptive management measures that introduce sediment into created marshes (e.g., thin layer placement). Creating high marsh is most reasonable where they tie into existing elevations of adjacent marsh communities. We will continue to discuss how best to achieve an ecologically-relevant balance of habitats from these projects that, with adaptive management, will continue to provide productive estuarine habitat for the foreseeable future.

As indicated in the sEA, we are also concerned that the construction of the northeast sill will present direct (i.e., fill) and indirect impacts (e.g., increased water velocities, scour) to existing SAV and shallow-water habitats, especially if it is constructed to its full extent in future phases. The purpose of the northeast sill is to protect the northern shore of Tar Bay WMA from wave action. According to information provided in this plan and aerial imagery, much of the existing land in this area was formed by repeated placement of dredged material within the last few decades. Furthermore, a substantial section of this sill will require dredging and filling operations to provide substrates with ample bearing capacity. Because these land masses are not historical and their preservation requires substantial impacts to the existing bottom, we recommend that the linear extent of the northeast sill be minimized as much as possible. Modeling efforts to

determine the hydrodynamic effects of the northeast sill are still ongoing and it is our understanding that updated results will be presented in conjunction with the 65% design. These modeling results will be necessary to anticipate potential indirect effects on SAV and should be presented to the resource agencies prior to the selection of a final design. If significant impacts to SAV are anticipated, then hydrodynamic approaches to mitigate increased velocities (e.g., increasing bottom roughness via reef creation) should be evaluated and incorporated into project plans. We also recommend that bathymetric surveys be conducted following the construction of the reduced portion of the northeast sill under Phase 1 to determine the effects (i.e., scour) this structure may have on shallow water habitats should it be extended.

The designated sill/breakwater crest elevations have changed in this most recent design phase to provide additional protections from wave action associated with high water events and RSLR more generally. We understand that these changes are based on stakeholder feedback and several instances of rounding up to the nearest foot. However, several of the figures and appendices still present heights that are several feet below what is currently proposed. While we understand that you wish to build this structure to withstand anticipated future conditions, these large stone structures present greater impacts to existing aquatic habitats. Furthermore, we are aware of no justification for the proposed changes to sill slopes from 1.5:1 to 2:1 other than it was the decision of the USACE Coastal Engineer. This change likely has a significant bearing on the extent of fill proposed to create these structures. We recommend that additional justification be provided for the stone sill crest height and slopes such that impacts of these structures are minimized to the extent possible while achieving project goals. Currently, it is not clear whether that has been achieved.

Based on the information presented regarding maintenance dredging in the channels around Barren Island, it appears that several years will elapse between the completion of the first phase (i.e., stone sills/breakwaters) and the last (i.e., final wetland cells). The Planning and Aid Report (PAR) indicates that this may take seven (7) years, although other sections of this NEPA document indicate that the frequency of local dredging will be dependent upon congressional allocations. This offers both a challenge and an opportunity. The challenge is that certain existing shallow water areas and their attendant marsh/SAV features will experience limited tidal exchange for extended periods of time, which will accentuate environmental stressors (e.g., heatwaves) and substantially limit aquatic productivity in these areas. We recommend that you evaluate the potential construction of a limited number of tidal inlets to allow for tidal flushing and greater nektonic access during the intervening years and greater aquatic connectivity throughout the created wetlands upon project completion. When placement is scheduled, these inlets could be temporarily blocked, preferably with sand berms, to contain the placed material. Once marsh vegetation was established in these areas, they could be reconnected via excavation, as necessary. The opportunity presented with this protracted timeline is that monitoring of early placement sites can inform future placement efforts. Because significant time will likely pass between each cell, there will be adequate time (e.g., greater than five years) to evaluate the success of each cell and then use that information in the design of future phases.

#### *Future design phases and coordination*

We are concerned that the borrow area dredging currently under consideration represents a two-fold impact for our resources (i.e., dredging and subsequent filling) for the purpose of creating stone sill foundations and colonial nesting bird habitat. Several fundamental aspects of this borrow activity remain unclear, including the location, quantity, and footprint of the proposed dredging. We continue to recommend that sand borrow material be sourced from navigational channels to the extent practicable to minimize impacts to undisturbed bottom. Specifically, borrow material should not be sourced from areas documented to support SAV, as these areas will likely become unsuitable for future colonization due to increasing water depths.

We appreciate the goals of these features and offer the following guidance to minimize impacts to aquatic habitats. First, while we acknowledge the challenges facing colonial nesting bird species and support the creation of limited, resilient colonial bird nesting habitat, impacts associated with these features (i.e., 8 acres of fill) should be offset through the creation of productive habitats for fish, including low marsh, tidal creeks/inlets, SAV, and oyster reef. Furthermore, the potential direct and indirect impacts of the northeast sill remain unknown and the details of its design are still under consideration. We support the reduction of the northeast sill to the minimum necessary to stabilize priority areas of Tar Bay WMA. This will help to minimize impacts to existing shallow water habitats, including the Great Bay Natural Oyster Bar (NOB). Future H&H modeling efforts should also examine the efficacy of oyster reef structures in lieu of stone sills to dissipate wave energies, reduce current velocities, and enhance the existing Great Bay NOB.

Future design considerations should allow for the proposed stone sills to be reconfigured to allow for greater tidal connectivity through the establishment of tidal inlets to constructed marshes. In the sEA, it is indicated that connectivity could be established through outfall structures. As has been demonstrated on Poplar Island (NOAA, 2011; Meyer and Teer, *in press*), the hardened and constricted nature of traditional outfall structures is not conducive to fish movement and can present significant challenges to aquatic connectivity. Thus, these inlets should be augmented to allow for greater nekton connectivity. They could also afford the opportunity to establish additional pocket beaches, intertidal mudflats, and other habitat features that are not colonized by emergent vegetation.

Finally, while we recognize that the scope of this document is limited to the stone structures surrounding Barren Island, it is notable that these foundational project components have bearing on future design considerations for the additional elements. While the stabilization of Barren Island has a spatially-fixed focus centered around erosion control of existing marshes and uplands, the scope and purpose of the James Island phase is distinctly different. Therefore, the design and alignment of the stone structures anticipated to create James Island should be examined within the context of the entire project such that ecological benefits and resilience may be fully realized throughout the project area.



## **Magnuson Stevens Fisheries Conservation and Management Act EFH Conservation Recommendations**

As discussed above, the project as currently proposed will adversely affect EFH for federally managed species such as bluefish and summer flounder due to the loss of habitat for these species and their prey. Additional information anticipated in future NEPA documents is necessary to fully evaluate the adverse effects and options for avoidance and minimization. Further consultation with us under the MSA and FWCA is also necessary as this information is developed and future phases of the overall project are planned.

Based upon the information available for the current phase of the project (i.e., Phase I of the Barren Island component of the Mid-Bay Islands Project), we recommend pursuant to Section 305(b)(4)(A) of the MSA that you adopt the following EFH conservation recommendations to minimize adverse impacts on EFH and aquatic resources of national importance:

1. Develop a work plan that avoids in-water construction during certain times of year, including:
  - a. the SAV growing season (April 15 through October 15) for in-water activities within 500 feet of mapped SAV;
  - b. the closure period for dredging activities within 500 feet of a designated natural oyster bar (June 1 through September 30, in any year).
2. Direct and indirect impacts to areas of mapped SAV should be monitored and offset through the creation of suitable fisheries habitat as part of the overall Barren Island Project. Work with us and other resource agencies (e.g., MDNR) in future design phases to offset anticipated losses.
3. Avoid vessel impacts to existing bottom by incorporating best management practices into project plans and operational requirements. These include:
  - a. Ensure contractors are aware of necessary minimization measures (e.g., shallow-draft vessels, high-tide operations) to avoid bottom impacts;
  - b. Avoid operating vessels in areas colonized by SAV to the maximum extent possible;
  - c. Coordinate with us and other resource agencies should dredging be required to provide access to construction areas.
4. Evaluate and incorporate gaps in the proposed sills to the maximum extent practicable to allow for greater tidal exchange prior to dredge material placement and following vegetative establishment.

### Anticipated Future Project Phases

5. Low marsh habitat in Chesapeake Bay marshes is vitally important habitat for numerous species and is generally eclipsed by high marsh at a ratio of 3 to 1 (Correll et al., 2018). As a result, the Corps should adequately prioritize the creation and enhancement of low marsh habitat, typically found below Mean High Water (MHW).
6. Work with us and other resource agencies to better incorporate the installation of fish reef structures and oyster reef creation/enhancement to offset the loss of structured aquatic

habitat. These features could also be used to protect constructed shorelines (e.g., bird islands, sill gaps) from erosion and mitigate the need for future island renourishment.

7. Provide us with information necessary to determine project impacts and anticipated outcomes, including the following:
  - a. Submit project plans for our review that depict all aspects of existing and proposed site conditions. This should include dredged material analysis, placement site existing contours (e.g., bathymetry, MHW, MLW), and as-built profile details depicting anticipated final conditions/contours.
  - b. Develop ecological performance standards to determine if the project is achieving its objectives of restoring and enhancing aquatic habitat that resembles an ecological reference. An ecological reference should be established and be based on the characteristics of an intact aquatic habitat of the same type within the same watershed.
  - c. Develop a monitoring and maintenance plan that includes performance measures, success criteria, adaptive management plans, and invasive species monitoring and control. This plan should be provided to us for review during the wetland design phase.

### **Endangered Species Act (ESA)**

Endangered species under the jurisdiction of NOAA Fisheries may be present in the project area. On February 5, 2018, you determined that the proposed action may affect, but is not likely to adversely affect listed species under our jurisdiction, and submitted your determination of effects along with justification and a request for concurrence. We concurred with your determination that the action is not likely to adversely affect listed species or critical habitat per the justification you provided and consultation was completed on February 5, 2018.

On August 14, 2020, we received a request for re-initiation of consultation regarding the District's Mid-Chesapeake Bay Island Ecosystem Restoration Project. We reviewed the information attached to your email requesting a determination from us regarding re-initiation of consultation and, based on the effect analysis from the previous consultation on the project, the information that you have provided indicating no changes to the project description, and the fact that no new listed species or designated critical habitat overlap with the action area, we provided a response on August 18, 2020, stating that it was not necessary to re-initiate the consultation we completed on February 5, 2018.

Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; or (c) if a new species is listed or critical habitat designated that may be affected by the identified action. Should there be additional changes to the project plans or new information becomes available that changes the basis for this determination, further coordination should be pursued. Please

contact Brian Hopper of our Protected Resources Division ([brian.d.hopper@noaa.gov](mailto:brian.d.hopper@noaa.gov)), should you have any questions regarding these comments.

## **Conclusion**

We look forward to working with you and your staff as the Mid-Bay Island Project progresses. We encourage early coordination with us as future phases of the project are developed. If you have any questions regarding EFH in the project area, please contact Jonathan Watson in our Annapolis, MD field office ([jonathan.watson@noaa.gov](mailto:jonathan.watson@noaa.gov)).

Sincerely,



Louis A. Chiarella  
Assistant Regional Administrator  
for Habitat and Ecosystem Services

cc: A. Sowers, C. Leasure, (USACE)  
K. Fiddler (MDOT MPA)  
B. Hopper (NMFS - PRD)  
S. Corson (NCBO)  
A. O'Donnell, C. Callahan (USFWS)  
M. Fitzgerald (USEPA)  
T. Roberson, M. Phipps-Dickerson (MDE)  
G. Gibson, R. Limpert (MDNR)  
T. Nies (NEFMC)  
C. Moore (MAFMC)  
L. Havel (ASMFC)

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## Maryland DEPARTMENT OF PLANNING

January 27, 2022

Ms. Angela Sowers, Ph.D., Water Resources Management Specialist, Civil Project Development Branch  
U.S. Army Corps of Engineers, Baltimore District  
2 Hopkins Plaza  
10-E-04  
Baltimore, MD 21203-1715

### **STATE CLEARINGHOUSE RECOMMENDATION**

**State Application Identifier:** MD20220104-0002

**Applicant:** U.S. Army Corps of Engineers, Baltimore District

**Project Description:** Draft Supplemental Environmental Assessment (sEA): Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Island Project) at Barren Island and James Island with No Action Alternative and Eight Alternatives for Protective Measures and Habitat Restoration

**Project Address:** Barren Island, Barren Island, MD 21634

**Project Location:** Dorchester County

**Recommendation:** Consistent Contingent Upon Certain Actions

Dear Ms. Sowers:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.02.04-.07, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation.

Review comments were requested from the Maryland Departments of General Services, Natural Resources, Transportation, and the Environment; Dorchester County; and the Maryland Department of Planning, including the Maryland Historical Trust. The Maryland Department of the Environment and Dorchester County did not provide comments; however, note that this was an expedited review period and these reviewers may still provide late comments.

The Maryland Departments of General Services, Natural Resources, and Transportation; and the Maryland Department of Planning found this project to be consistent with their plans, programs, and objectives.

The Maryland Department of Planning provided the following comments: "The project is aligned with the State Planning Vision of 'Environmental Protection' – 'Land and water resources, including the Chesapeake Bay and Coastal Bays, are carefully managed and maintain healthy air and water, natural systems, and living resources.'"

The Maryland Historical Trust (MHT) stated that their finding of consistency is contingent upon the applicant's completion of the review process required under Section 106 of the National Historic Preservation Act, as follows: "Conditioned on COE [Corps of Engineers] consulting with MHT to complete historic preservation review - (NHPA [National Historic Preservation Act] - Historic Properties / NEPA [National Environmental Policy Act] - Cultural Resources)."

Ms. Angela Sowers, Ph.D.

January 27, 2022

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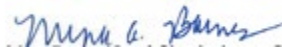
State Application Identifier: **MD20220104-0002**

The State Application Identifier Number must be placed on any correspondence pertaining to this project.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at [sylvia.mosser@maryland.gov](mailto:sylvia.mosser@maryland.gov).

Thank you for your cooperation with the MIRC process.

Sincerely,



Myra Barnes, Lead Clearinghouse Coordinator

MB:SM

cc:

Tanja Rucci - DGS  
Tyson Byrne - MDOT

Amanda Redmiles - MDE  
Tony Redman - DNR

Herve Hamon - DRCH  
Tracey Gordy - MDPLL

Beth Cole - MHT

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## Maryland DEPARTMENT OF PLANNING

January 27, 2022

Ms. Angela Sowers, Ph.D., Water Resources Management Specialist, Civil Project Development Branch  
U.S. Army Corps of Engineers, Baltimore District  
2 Hopkins Plaza  
10-E-04  
Baltimore, MD 21203-1715

### **STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENT(S) RECEIVED**

**State Application Identifier:** MD20220104-0002

**Project Description:** Draft Supplemental Environmental Assessment (sEA): Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Island Project) at Barren Island and James Island with No Action Alternative and Eight Alternatives for Protective Measures and Habitat Restoration

**Project Address:** Barren Island, Barren Island, MD 21634

**Project Location:** Dorchester County

**Clearinghouse Contact:** Sylvia Mosser

Dear Ms. Sowers:

We are forwarding the enclosed comments made by the Maryland Department of the Environment (MDE) regarding the referenced project for your information. MDE found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments summarized below.

1. "Construction, renovation and/or demolition of buildings and roadways must be performed in conformance with State regulations pertaining to 'Particulate Matter from Materials Handling and Construction' (COMAR 26.11.06.03D), requiring that during any construction and/or demolition work, reasonable precaution must be taken to prevent particulate matter, such as fugitive dust, from becoming airborne.
2. During the duration of the project, soil excavation/grading/site work will be performed; there is a potential for encountering soil contamination. If soil contamination is present, a permit for soil remediation is required from MDE's Air and Radiation Management Administration. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements for these permits.
3. If a project receives federal funding, approvals and/or permits, and will be located in a nonattainment area or maintenance area for ozone or carbon monoxide, the applicant needs to determine whether emissions from the project will exceed the thresholds identified in the federal rule on general conformity. If the project emissions will be greater than 25 tons per year, contact the Air Quality Planning Program of the Air and Radiation Administration, at (410) 537-4125 for further information regarding threshold limits.
4. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste

Ms. Angela Sowers, Ph.D.

January 27, 2022

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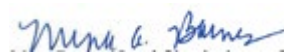
State Application Identifier #: MD20220104-0002

activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.

5. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.
6. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437."

This concludes the review of this project. Should you have any questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at [sylvia.mosser@maryland.gov](mailto:sylvia.mosser@maryland.gov). Your cooperation and attention to the review process is appreciated.

Sincerely,



Myra Barnes, Lead Clearinghouse Coordinator

MB:SM

cc:

Tanja Rucci - DGS

Tyson Byrne - MDOT

Amanda Redmiles - MDE

Tony Redman - DNR

Herve Hamon - DRCH

Tracey Gordy - MDPLL

Beth Cole - MHT

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