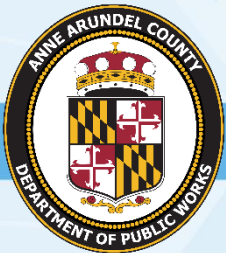
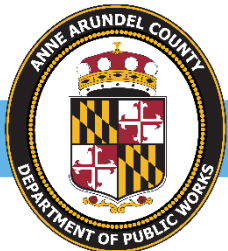


**Fort Smallwood Park  
Shoreline Stabilization  
Phase 2 & 3  
Pre-Construction  
Public Meeting**

**May 3, 2021**



**Thank you for  
joining us!**



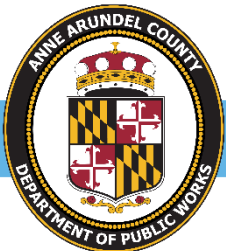
# Introduction

- Anne Arundel County Department of Public Works
  - Melissa Harlinski, Project Manager
- Anne Arundel County Department of Recreation and Parks
  - Erica Matthews, Chief - Planning and Construction
- Meeting Purpose
  - Increase community awareness of the planned park shoreline improvements
  - Overview of the project design and construction
  - Answer questions



# Agenda

- Welcome - Erica Matthews, Chief - Planning and Construction
- Shoreline Protection Project - BayLand
  - Phase 1 - Construction Recently Completed
  - Phase 2 - Construction 2021
  - Phase 3 - Construction 2021
- Questions and Answers



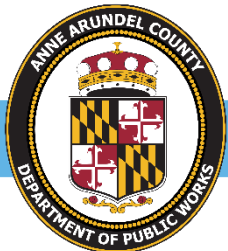
# Introduction to BayLand

- Environmental Engineering Firm
- Local Firm with 25 Years of Ecological Restoration Experience
- Specializing in Projects at the Land-Water Interface
  - Stream & Ecological Restoration
  - Stormwater Management & Watershed BMPs
  - Marine, Dredging & Shoreline
- Project Design Team
  - Sepehr Baharlou, P.E., Project Manager
  - Anna Johnson, P.E., Coastal Engineer



# Project Background

- In 2007, the County prepared a shoreline evaluation report
  - Divided the shoreline into 3 reaches
  - Prioritized reaches for restoration
  - Recommended a design approach for each reach
- County implemented the project in 3 phases
- Phase 1 was completed in November 2019
- Phase 2 & 3 will be constructed between May 2021 and February 2022





# Phase 1 - Pre-Construction Conditions



- 1,640 LF of high banks, fallen trees, & failing stone and rubble revetment
- Actively eroding shoreline - average 0.58 feet/year



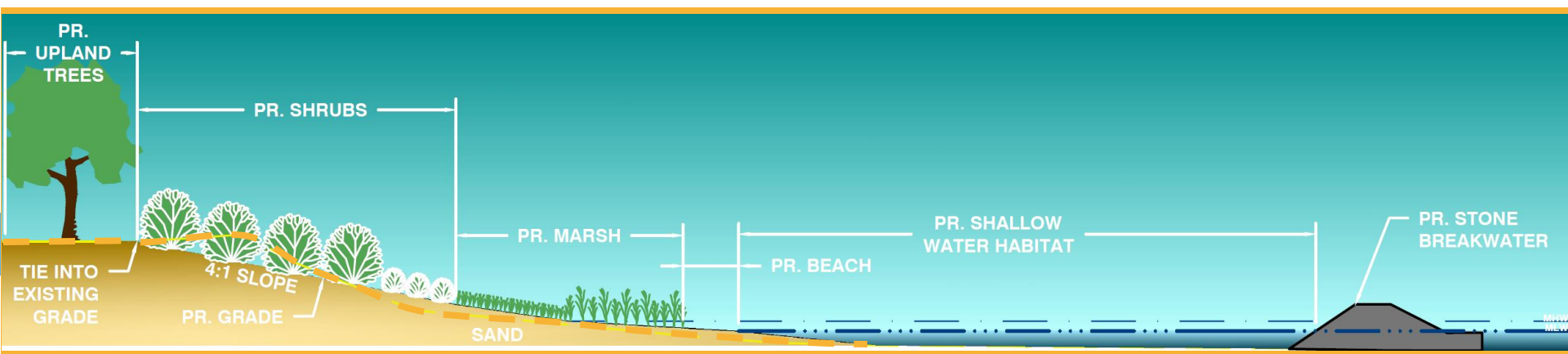
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# Phase 1 - Shoreline Protection

- Living Shoreline Techniques
  - Controls shoreline erosion
  - Provides a protective natural shoreline
  - Strategic placement of stone, sand fill, plants and other organic materials





# Phase 1 - Construction

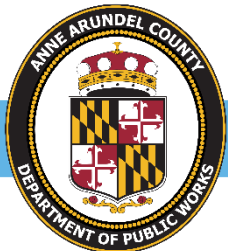
- Construction began on June 16, 2019 & completed by December 14, 2019;
- Contractor & Construction Inspection:



**REHAK'S CONTRACTING, LLC**  
Marine Construction

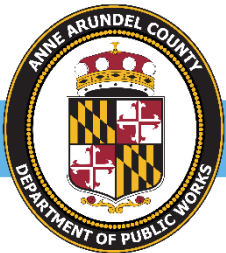
**EBA**  
ENGINEERING

- Minor adjustments to the construction conducted in October 2020;
- Additional sand added in February 2021 from a nearby dredging project



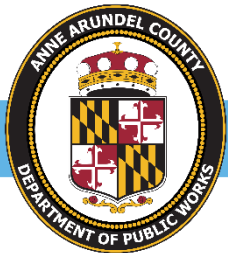
# Phase 1 - Shoreline Protection

- 11,000 tons of stone for erosion protection structures
- 6,500 cubic yards of sand fill to provide beach buffer and planting terrace
- Plantings:
  - Over 21,000 Marsh Plugs for flood protection and habitat enhancement
  - Over 550 trees and 500 shrubs planted for slope protection and mitigation





# Phase 1 - Shoreline Protection





# Phase 1 - Project Benefits

- Provides shoreline protection and reduces erosion
- Creates diverse marsh habitat
- Provides a natural transition to upland areas
- Provides for safe access to the water and trails
- Improves water quality to the Chesapeake Bay
- Annual pollutant load reductions
  - 100 pounds/year Nitrogen
  - 6 pounds/year Phosphorous
  - 95 tons/year Sediment
- Increases the Park's coastal resiliency to sea level rise



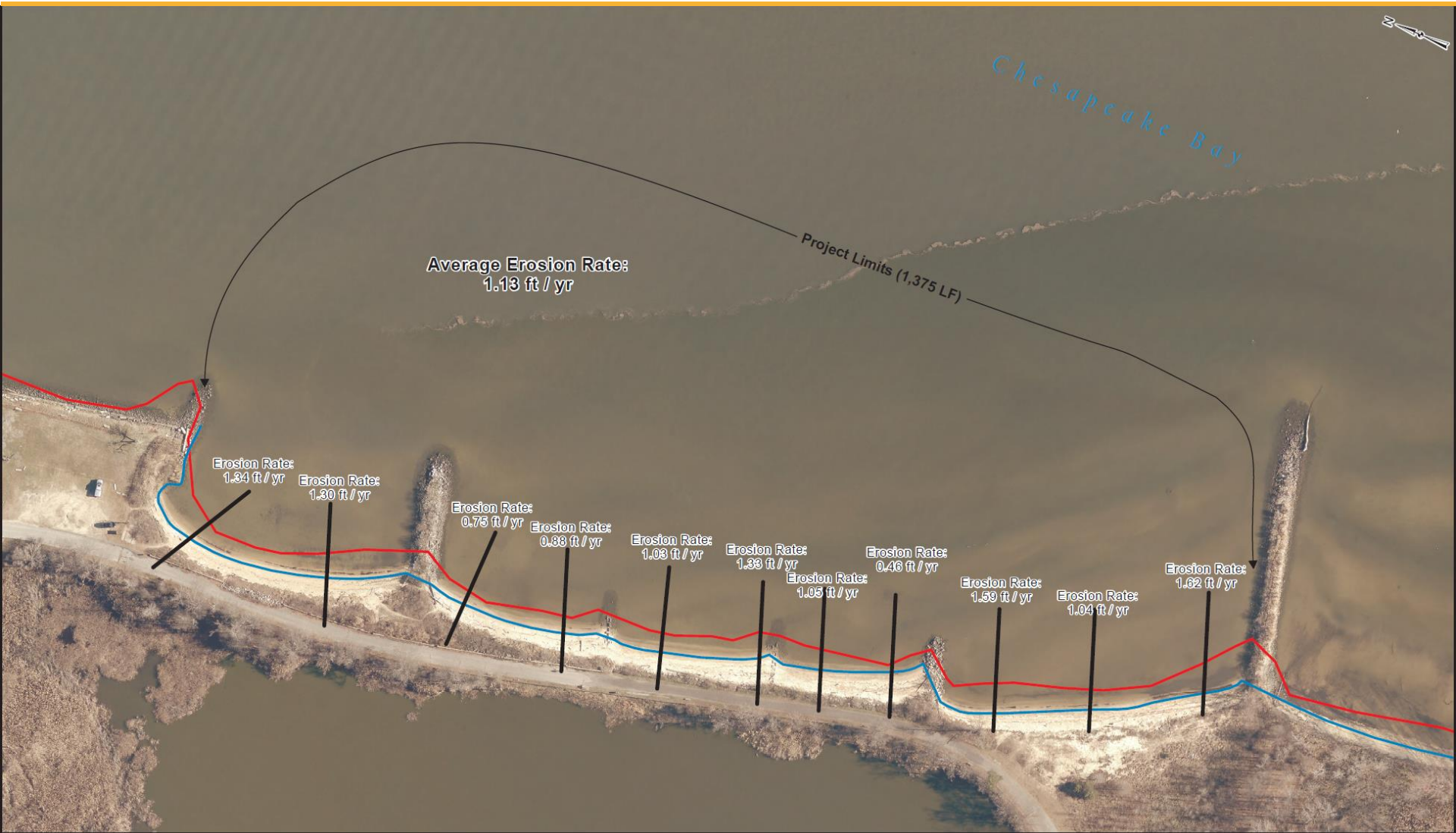


# Phase 2 - Existing Conditions

- Length of shoreline - 1,375 LF
- 20-50 feet wide beach
- Deteriorated stone jetties
- Jeopardizing Bay Front Drive
- Actively eroding shoreline - average 1.13 feet/year



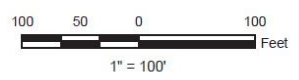
# Phase 2 - Erosion Rate Map



Notes:  
 1. Aerial Photography from Anne Arundel County dated 2016.  
 2. 1994 Shoreline from Maryland Department of Natural Resources and IMap services.  
 3. 2016 Shoreline is MHW as observed on 2016 aerial photograph.

**Legend**

- Transects
- 2016 Shoreline
- 1994 Shoreline



**BayLand**  
 Consultants & Designers, Inc.  
*"Integrating Engineering and Environment"*

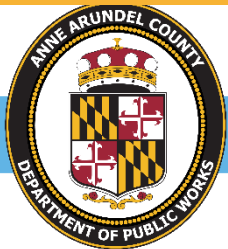
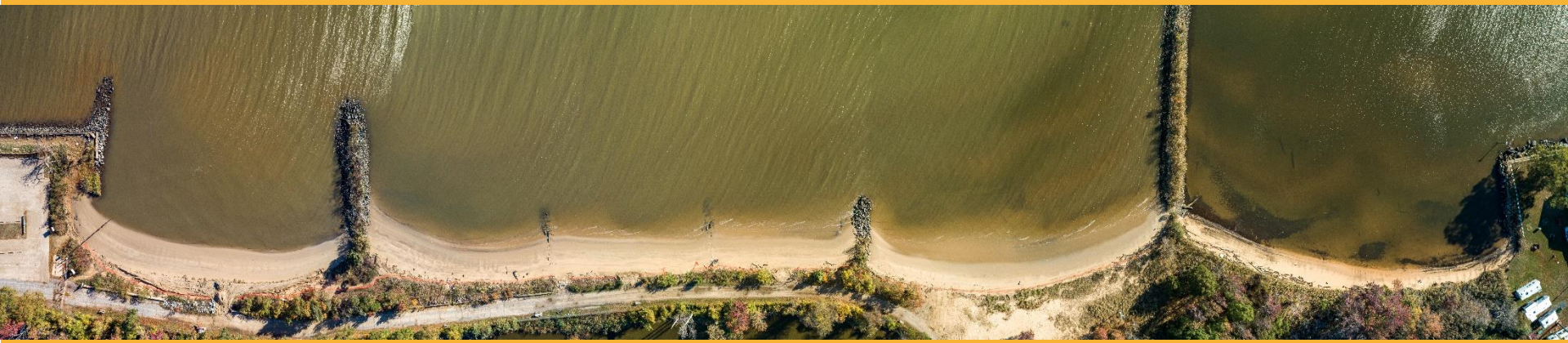
7455 New Ridge Road, Suite 1 Hanover, Maryland 21074  
 Phone: (410) 694-9401 Fax: (410) 694-9405  
 Website: www.baylandinc.com

Fort Smallwood Park  
 Reach 1  
 Erosion Rate  
 1994-2016



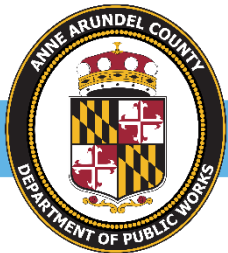
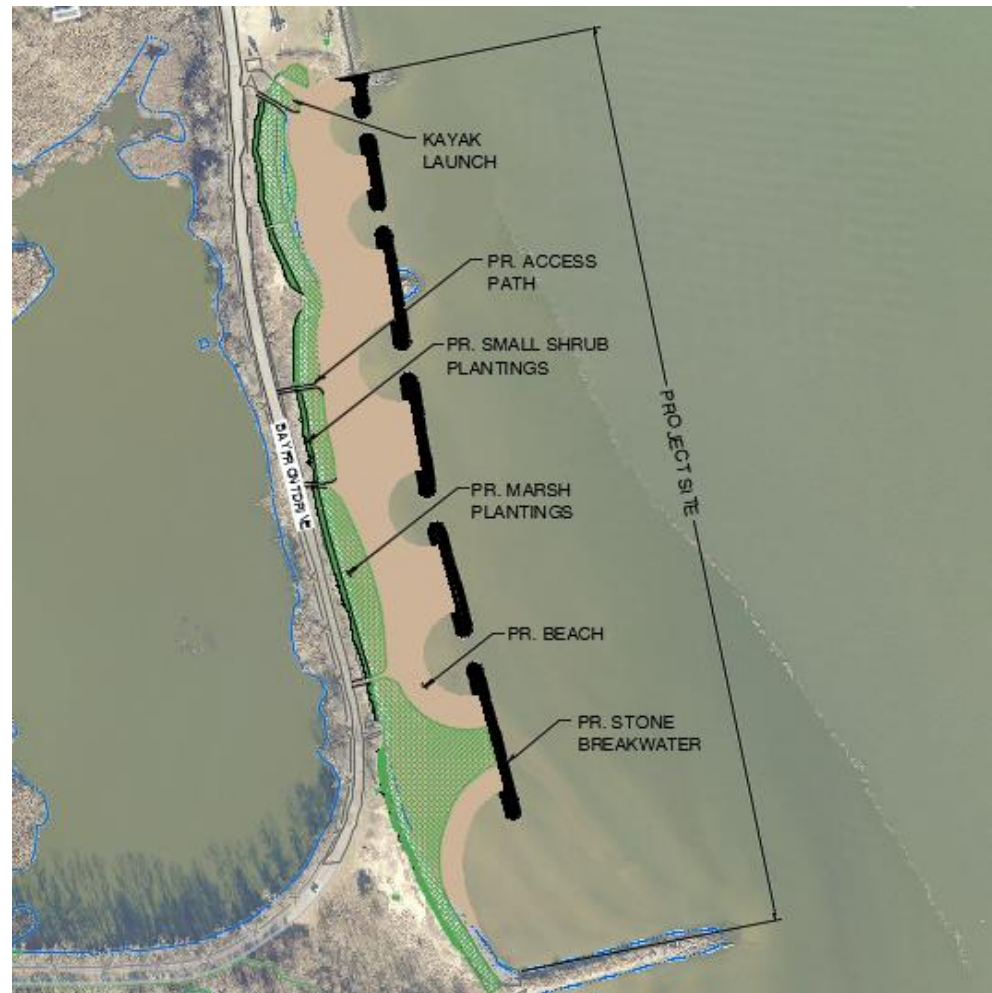
# Phase 2a - Beach Nourishment

- Fall of 2019 – Beach nourishment using 4,100 sandy material from Bodkin Creek dredging project.
- Sand was strategically placed where beach was narrowest
- Widened the beach by about 20 feet



# Phase 2 - Shoreline Protection

- Headland breakwaters
  - Armor stone to reduce wave energy
- Beach nourishment
  - Provides wide, gradual sloping beach
- Installation of kayak launch
- Marsh and shrub plantings
  - Dissipate wave energy, help with sand retention





# Phase 2 - Shoreline Protection

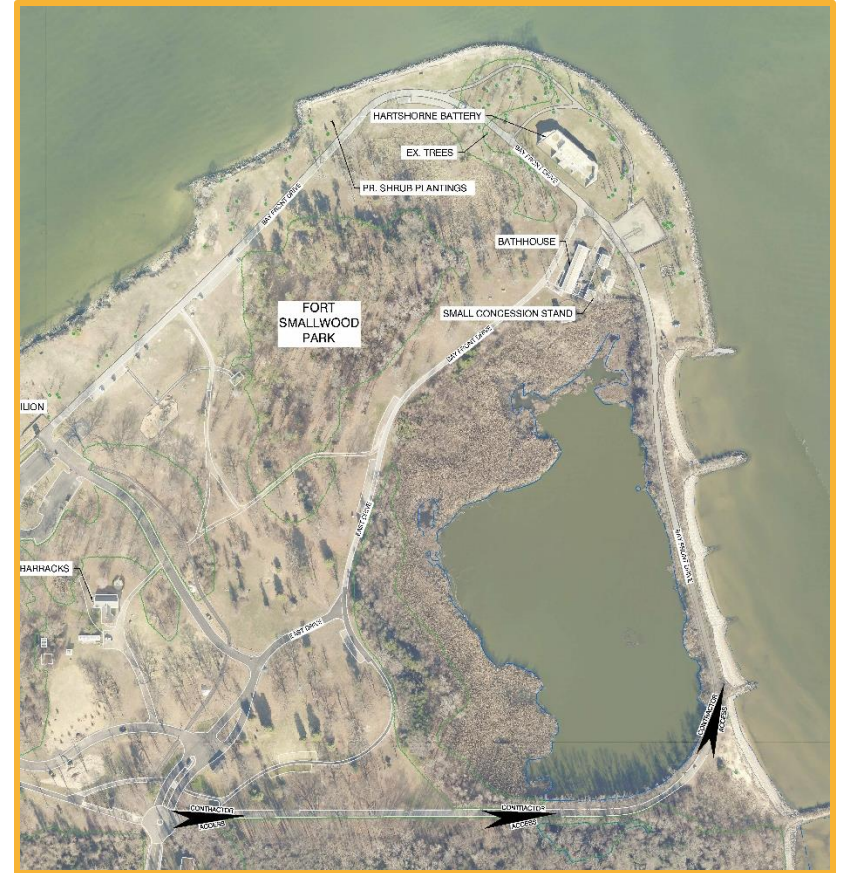


- Provides wide beach for recreational use and swimming
- Provides shoreline protection and reduces erosion
- Provides a natural buffer along the shoreline
- Improves water quality to the Chesapeake Bay
- Increases the Park's coastal resiliency - sea level rise



# Phase 2 - Construction Details

- Material Quantities:
  - 6,000 tons of stone
  - Over 7,200 Cubic Yards of Sand Fill
  - Plantings:
    - 21,000 marsh plugs
    - 85 trees
    - 200 shrubs
- Construction access will be through Cabana Rd.
- Construction scheduled to begin in May 15, 2021 and be completed by December 15, 2021



# Phase 2 - Construction

- Contractor - Bourn Environmental
  - Contractor based in Mitchellville, MD
  - Service-Disabled Veteran Owned Small Business with a focus on the Chesapeake Bay Watershed.
  - Specializes in Environmental Restoration Construction for a variety of clients
  - Travis Haramis - Project Manager
  - Andrew Sterling - On-Site Supervisor



- Construction Inspection - Greenman-Pederson, Inc.
  - Office in Columbia, MD
  - Bill Park - Project Manager
  - Andrew Rose & Abhijit Subedi - Onsite Inspectors

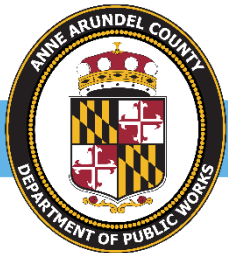


- Construction Sequence
  - Issue Notice to Proceed & Pre-Construction Meeting
  - Mobilization of the equipment and personnel
  - Removal of existing structures
  - Construction causeways to rock structures
  - Construction of rock structures
  - Placement of sand
  - Marsh and shrub plantings





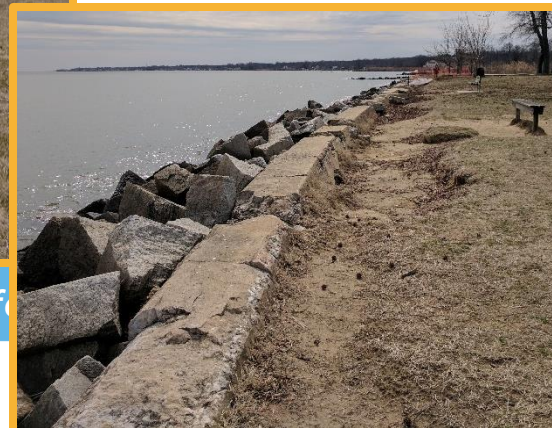
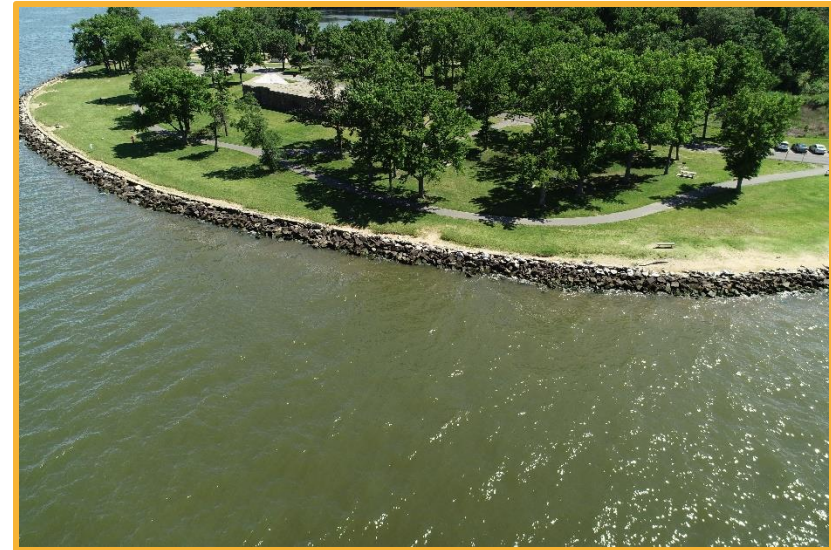
# Phase 2 - Typical Construction Equipment and Operation (Other Sites)





# Phase 3 - Existing Conditions

- Length of shoreline - 1,630 LF
- Failed bulkhead with stone and rubble reinforcement
- Frequent sink holes and wash out areas



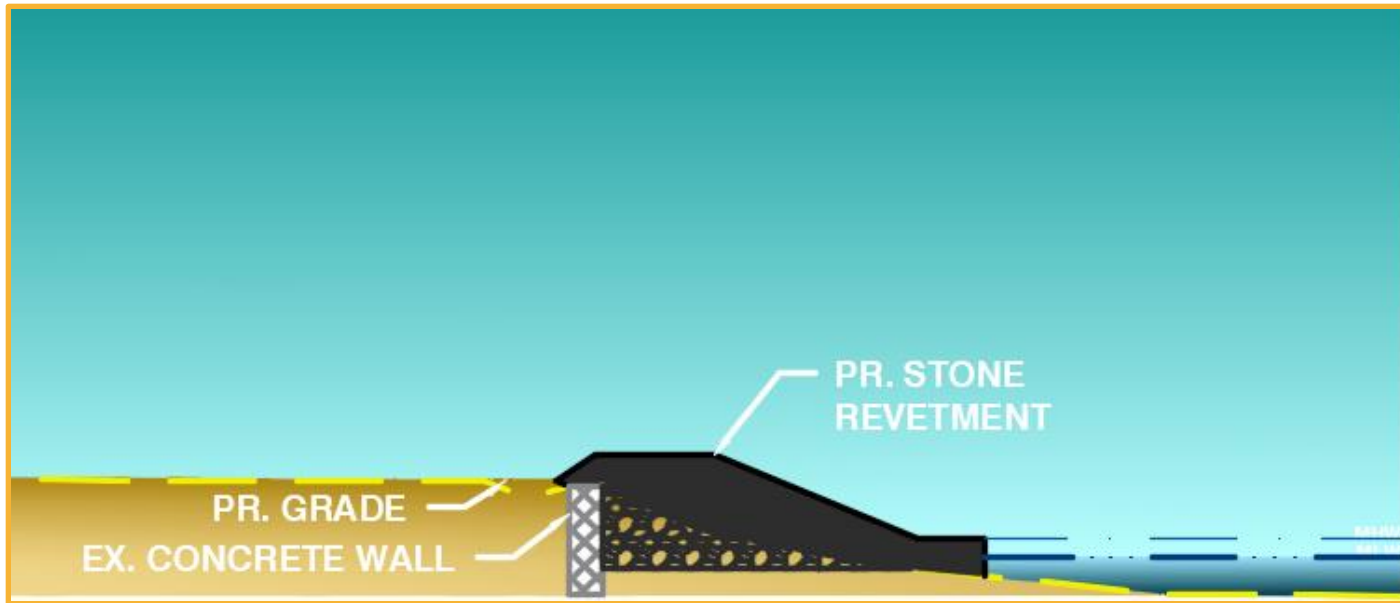
# Phase 3 - Shoreline Protection

- Stone Revetment
  - Armor stone to reduce wave energy
- Provides 3 fishing piers
- Tree & shrub plantings





# Phase 3 - Shoreline Protection



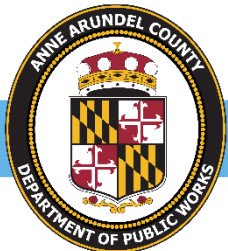
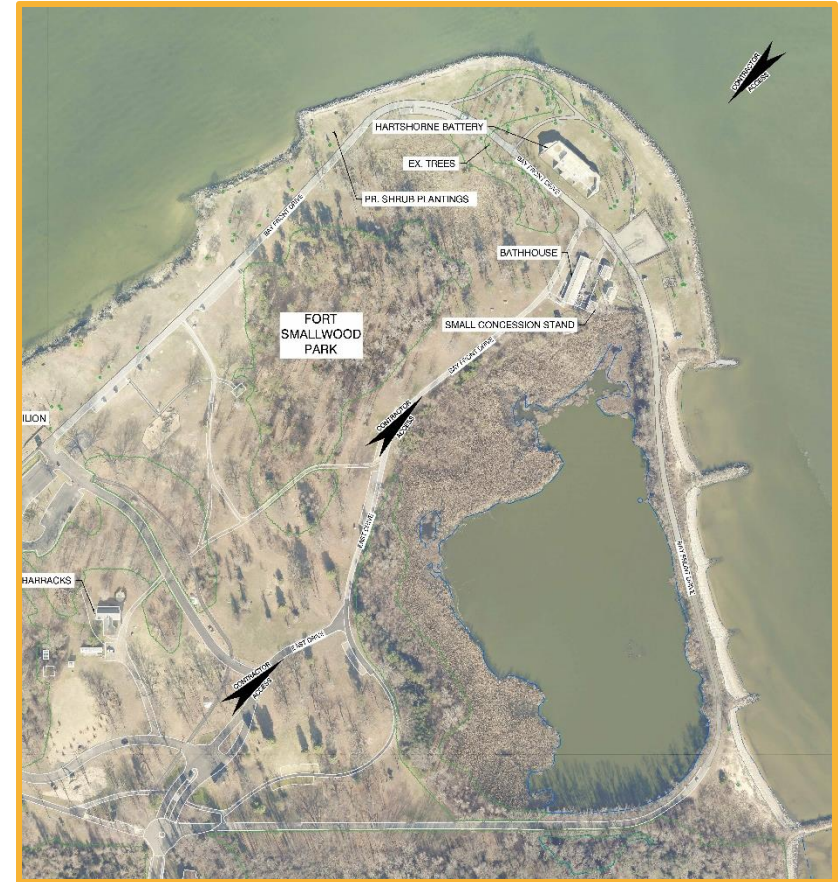
- Provides shoreline protection and eliminates erosion
- Provides for long term protection of cultural resources
- Provides access for fishing and other recreational activities
- Increases the Park's coastal resiliency to sea level rise





# Phase 3 - Construction Details

- Material Quantities:
  - 12,000 tons of Stone
  - Plantings:
    - 180 Trees
    - 85 shrubs
- Construction access will be via water and East Drive
- Construction scheduled to begin on or after June 15, 2021 and completed by January 15, 2022



# Phase 3 - Construction

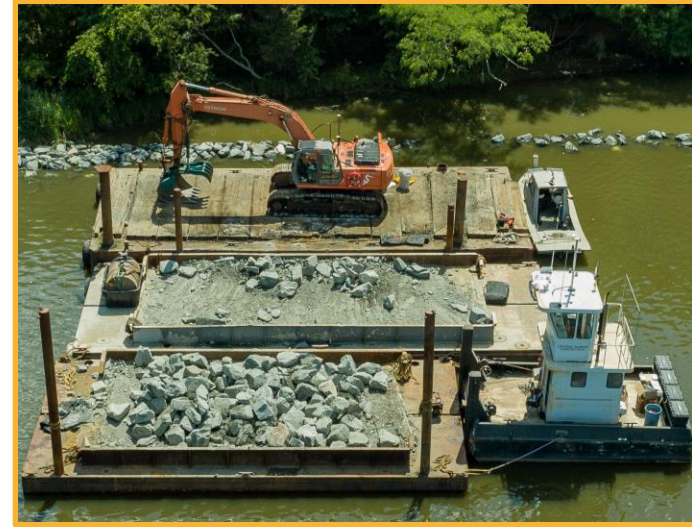
- Contractor - ShoreLine Design, LLC
  - Local Anne Arundel Marine Contractor based in Edgewater, MD
  - Specializes in Marine Construction for a variety of clients
  - Constructed over 14 miles of shoreline protection
  - Specialized equipment for waterside access
  - Wes Matheu - On-site supervisor
- Construction Inspection - Development Facilitators, Inc.
  - Office in Millersville, MD
  - Onsite Inspector - Jeff McMillan



- Construction Sequence
  - Issue Notice to Proceed & Pre-Construction Meeting
  - Mobilization of the equipment and personnel
  - Construction of rock revetment & fishing piers
  - Tree and shrub plantings

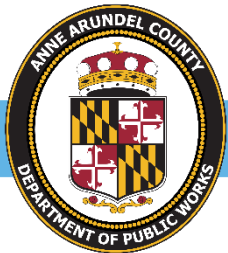
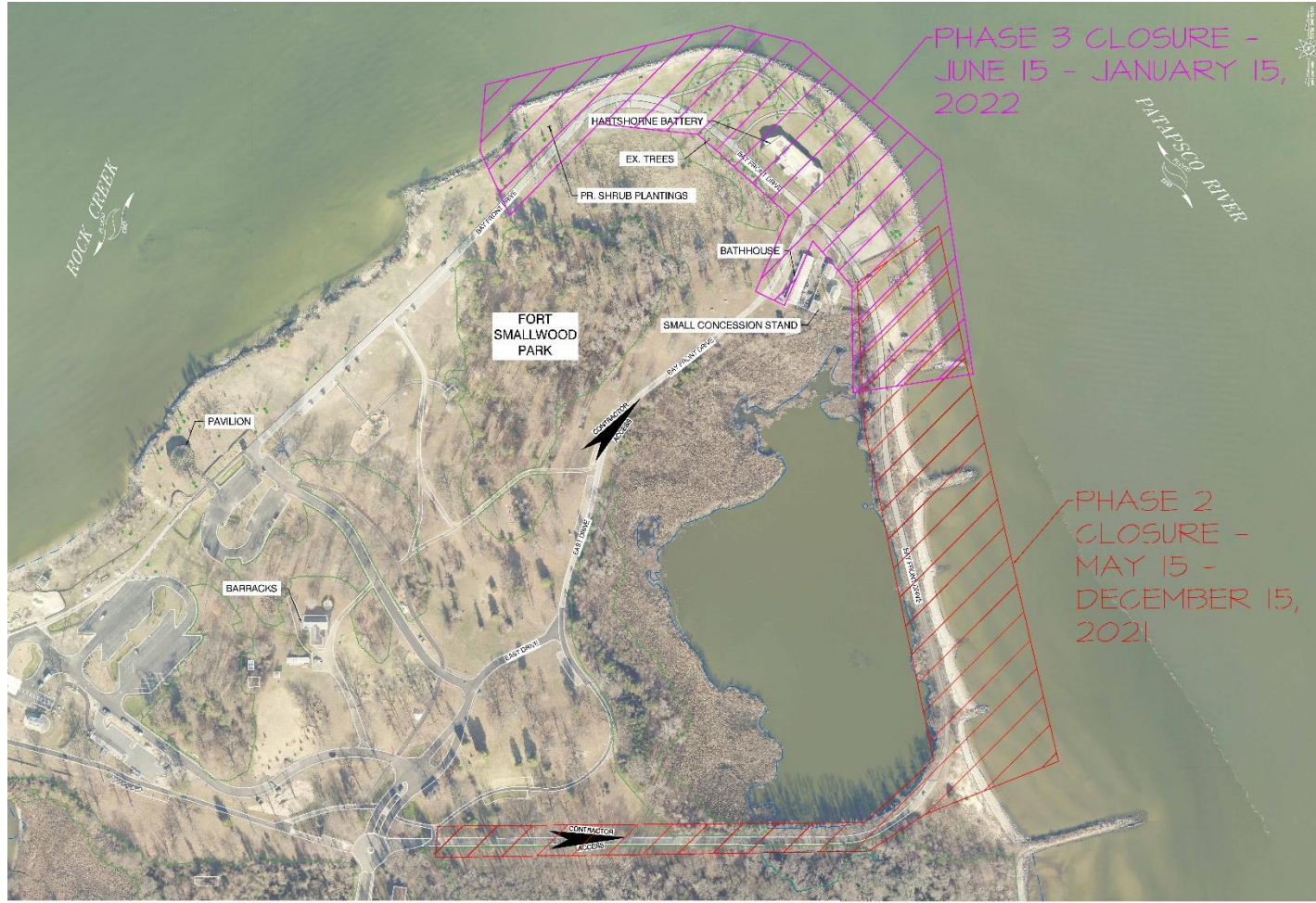


# Phase 3 - Typical Construction Equipment and Operation

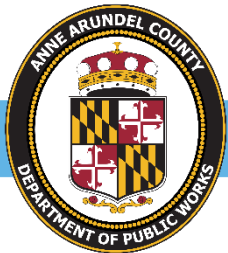




# Construction Related Park Closures - Summer/Fall 2021



# Answer Questions and Discussion





**Please take a few moments to complete our survey  
by scanning the QR code or on our website at**  
[https://www.aacounty.org/departments/recreation-  
parks/about-us/lpprp/index.html](https://www.aacounty.org/departments/recreation-parks/about-us/lpprp/index.html)





# Thank you!!!



Questions can be mailed to:

Anne Arundel County

Department of Recreation and Parks

Attn: Erica Matthews, Capital Projects

1 Harry S. Truman Parkway

Annapolis, MD 21401

(410) 222-7300

[rpjack50@aacounty.org](mailto:rpjack50@aacounty.org)

Melissa Harlinski, DPW

[pwharl45@aacounty.org](mailto:pwharl45@aacounty.org)





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