

Arundel-on-the-Bay Living Shoreline & Regenerative Stormwater Conveyance

Living Shoreline Implementation as an Element in a Coastal
Community's Response to Localized Flooding

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Biohabitats Inc.

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Acknowledgements

Project Partners

Arundel-on-the-Bay Community
South River Federation
A.A. County Watershed Stewardship
Academy; Dept. of Public Works
Critical Areas Commission

Project Funders

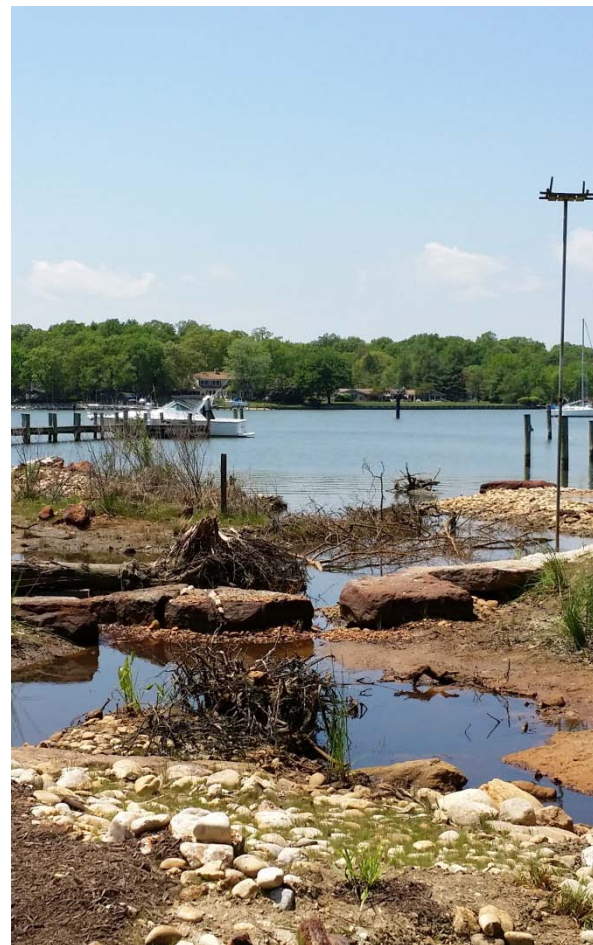
MD Department of Natural Resources
Chesapeake Bay Trust

Project Design

Biohabitats, Inc.

Construction & Planting

Underwood & Associates
Chesapeake Conservation Corps
Keller Williams Corporate Volunteers





Overall Grant Project Goals:

- Improve runoff water quality – reduce nutrient & sediment loadings
- Alleviate local ponding by roadside BMPs
- Reduce erosion and/or ponding through improved conveyance
- Further education for AOB residents on managing stormwater & erosion
- Serve as a model for low-lying communities throughout the watershed





Pre-construction Conditions



Shoreline bulkhead, revetment and lawn area



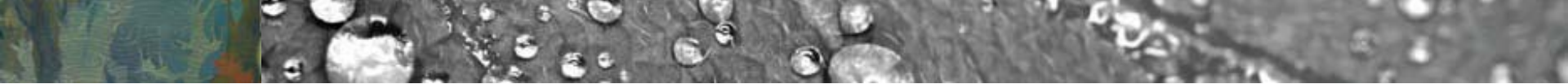
Swale outfall to shoreline



Pre-existing Conditions – Swales & Drainage



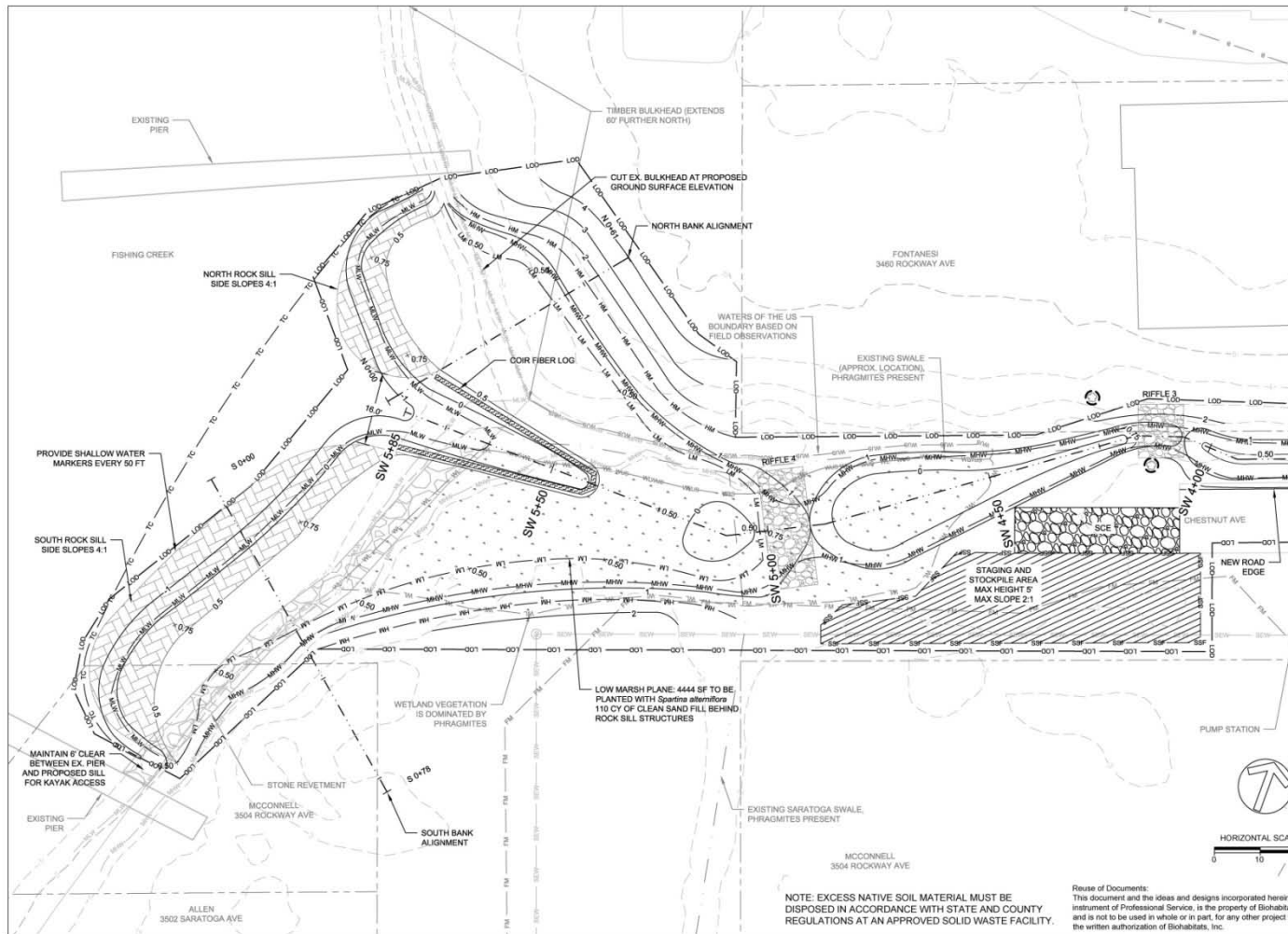
Drainage conveyance, maintenance and water quality issues



Project Objectives

- Remove and replace bulkhead and lawn area
- Install an ecologically functional living shoreline
- Create riparian and estuarine wetland habitat
- Enhance swale drainage functions & improve localized water quality
- Treat incoming stormwater run-off from roads & neighborhood
- Address localized nuisance ponding and flooding
- Provide enhanced aesthetics and educational opportunities
- Engage the community in stewardship activities

Project Construction Drawing



NOTE: EXCESS NATIVE SOIL MATERIAL MUST BE DISPOSED IN ACCORDANCE WITH STATE AND COUNTY REGULATIONS AT AN APPROVED SOLID WASTE FACILITY.

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**ARUNDEL-ON-THE-BAY
ECOLOGICAL
ENHANCEMENT PROJECT**

**NOT FOR
CONSTRUCTION**

05-23-2013 GRADING PERMIT SUBMITTAL
03-07-2013 90% SUBMITTAL
04-06-2012 CONCEPT DRAFT
04-27-2012 REVISED CONCEPT
08-15-2012 30% NEWPORT CONCEPT

DATE ISSUES / REVISIONS
OWNER - PROPERTY OWNERS ASSOCIATION OF
ARUNDEL-ON-THE-BAY
PO BOX 4895
ANNAPOLIS, MD 21403
APPLICANT:



2830 BOLCHONS ISLAND ROAD, SUITE A
EDgewater, MD 21037
PH 410-228-3802 FAX 410-228-0264
WWW.SOUTHRIVERFEDERATION.NET

DESIGN CONSULTANT:



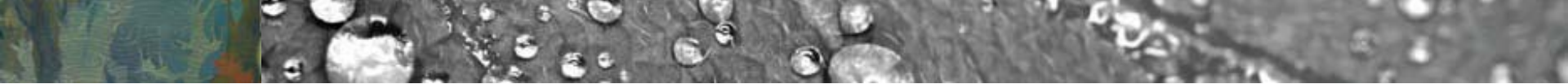
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Restoring the Earth's Ecological Stewardship

**ARUNDEL-ON-THE-BAY
ECOLOGICAL
ENHANCEMENT
PROJECT**

**PROPOSED
CONDITIONS**

PROJECT NO. 12028 D1 SCALE: 1" = 10'

SHEET NO. 6 OF 21



Design Features

- Increased capacity of roadside swales
- Gravel and sandstone substrate & stabilization materials
- Sand and woodchip filtering and planting media
- Native freshwater wetland and riparian plantings
- Living shoreline – cobble and sandstone sill
- Sandy substrate marsh plain material import
- Native tidal marsh grasses as fringe plantings
- Provide enhanced aesthetics and educational opportunities
- Engage the community in stewardship activities

Post-Construction First Year



Living Shoreline, Swale and Wetland Area

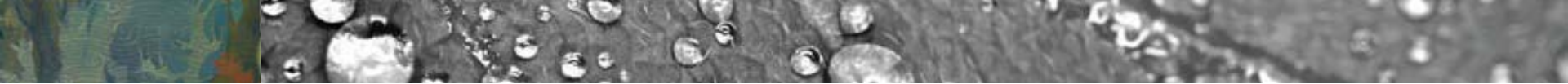


Stormwater Conveyance & Drainage Path



Swale Enhancement & Native Plantings





Estuarine Shoreline and Wetland Areas



Community Engagement





Volunteer Day Video



First Growing Season



Celebration of Completion – Ribbon Cutting



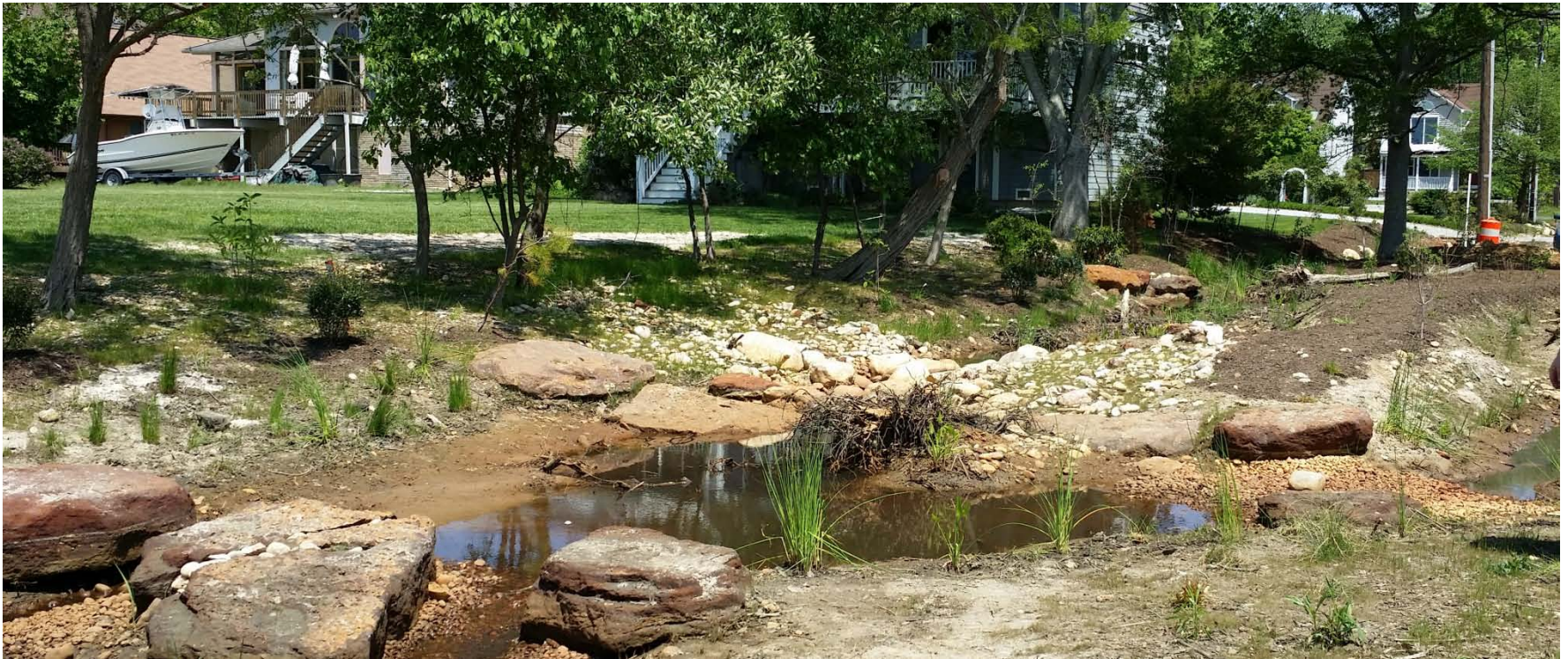
Oyster Harbor - Natural Drainage Enhancement

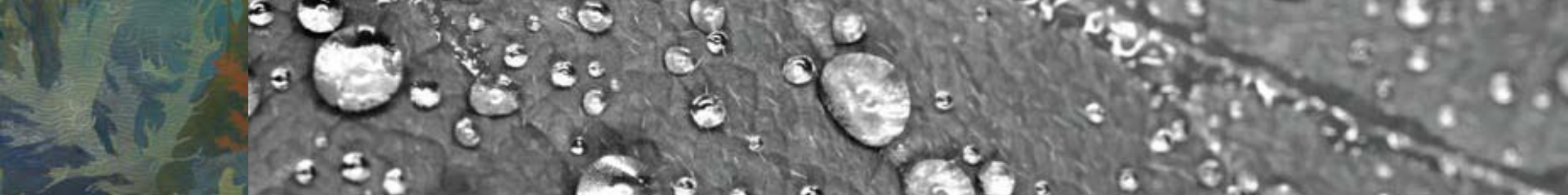




Future Opportunities :

- Expand demonstration to additional swale and shoreline areas
- Monitor for water quality, vegetation and fish & wildlife
- Share project results and lessons learned
- Continue to adaptively manage the project and the system





THANK YOU!
QUESTIONS?

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