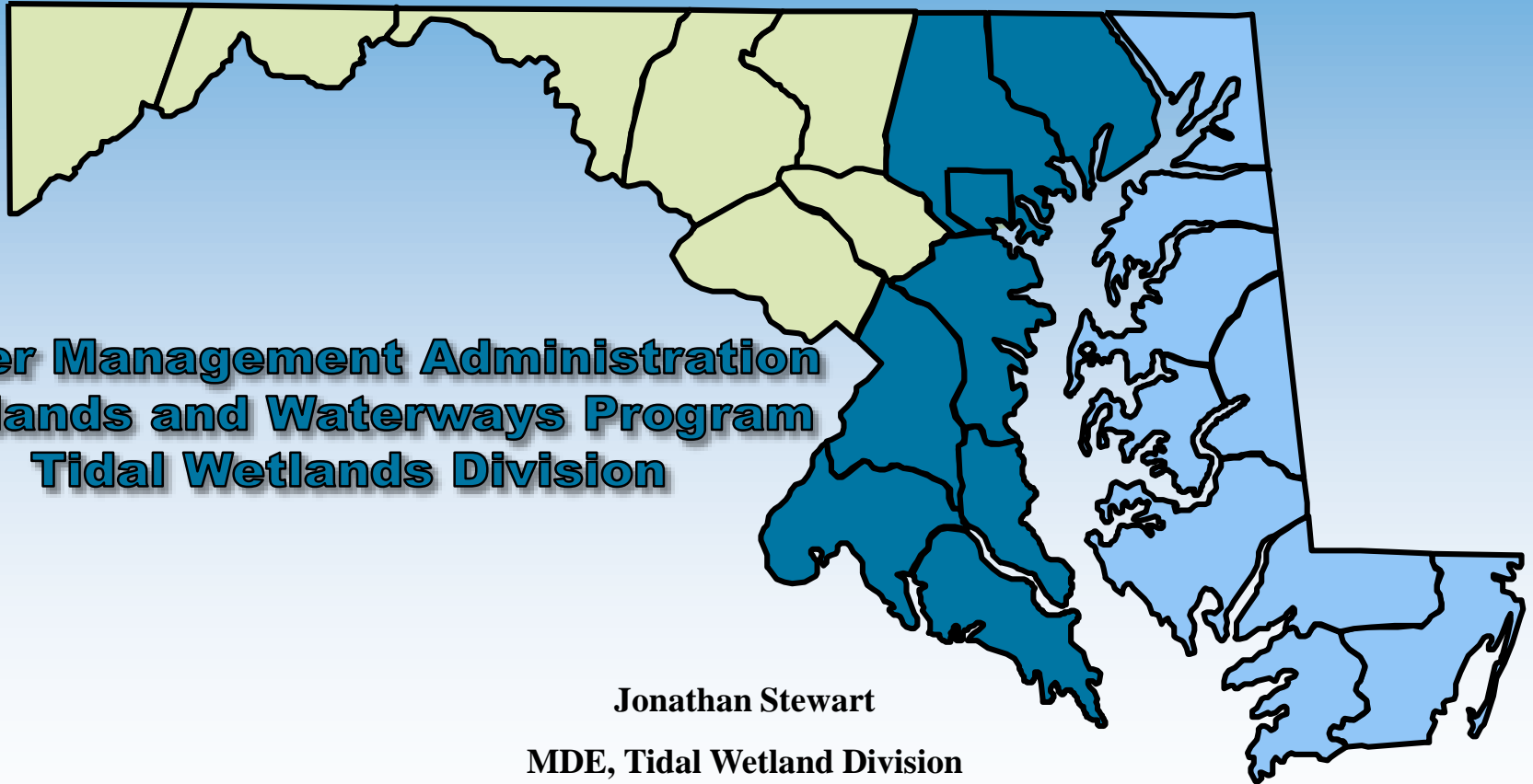




**Maryland**  
Department of  
the Environment



**Water Management Administration  
Wetlands and Waterways Program  
Tidal Wetlands Division**

**Jonathan Stewart**  
**MDE, Tidal Wetland Division**  
**Chief, Eastern Region**



# Living Shorelines

## Programmatic Tools and Policies

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Moving Maryland from Structural to  
Nonstructural Shoreline Erosion Control Measures



# Shorelines and Regulatory Boundaries

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- Length of Tidal shoreline in Maryland
  - NOAA's official value: 3,190 miles. <sup>i</sup>
  - U.S. Army Corps of Engineers value: 4,360 miles. <sup>ii</sup>
  - Maryland Geological Survey's value: 7,719 miles. <sup>iii</sup>
- MDE tidal regulatory boundaries based on:
  - 1972 Tidal Wetland Maps
  - Mean High Water Line
  - Landward extent of vegetated wetlands

<sup>i</sup> measured by hand in 1939-40 with a recording instrument on the largest-scale charts and maps then available.

<sup>ii</sup> U.S. Army Corps of Engineers. 1990. Chesapeake Bay Shoreline Erosion Study.

<sup>iii</sup> Hennessee, L., Valentino, M.J., and Lesh, A.M., 2003, Updating shore erosion rates in Maryland: Baltimore, Md., Maryland Geological Survey, Coastal and Estuarine Geology File Report No. 03-05, 26 p.



# Hardening the shoreline

## Historical common practice

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- Approximately 6% of shoreline protection projects authorized prior to 2008 were for living shorelines.



Talbot County, San Domingo Creek near St. Michaels



Dorchester County – Location unknown



# Reasons for 6% authorization rate:

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- Preference based regulation – no application fee incentive is not enough enticement
- Cost \$\$\$ - majority of contractors comfortable with typical shoreline protection techniques – bulkheads and revetments (pricing/installation/durability)
  - Higher quotes for LS work
  - Greater upland disturbance for LS work compared to bulkheads or revetments
  - No guarantee LS to protect property as well as bulkhead or revetment
- Contractors/agents/applicants providing different information to multiple agencies – MDE, Critical Area Commission, local jurisdiction



# Living Shoreline Protection Act of 2008

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- House Bill (H.B.) No. 973 took effect October 1, 2008
  - Improvements to protect a person's property against erosion shall consist of nonstructural shoreline stabilization measures that preserve the natural environment, such as marsh creation, except
    - In areas designated by MDE mapping as appropriate for structural shoreline stabilization measures; and
    - In areas where the person can demonstrate to MDE's satisfaction that such measures are not feasible, including areas of excessive erosion, areas subject to severe tides, and areas too narrow for effective use of nonstructural shoreline stabilization measures.
    - MDE will implement a waiver process to the nonstructural requirement



# Major shift in regulatory review of projects

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- Act changed preference driven regulation to rebuttable presumption regulation:
  - every site is capable of supporting a soft shoreline stabilization technique, and
  - it is the responsibility of the applicant to prove that a different technique than a living shoreline is necessary to protect the property from erosion.
- Act required MDE to adopt regulations that included a waiver process
- Act amended Environmental Article 16-201



# Authorizing a shore erosion control project

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- MDE may authorize if:
  - There is documented evidence of erosion by the applicant
  - There are no existing wetlands on site that are effectively controlling shore erosion
  - Proposed project does not adversely affect
    - an adjacent property;
    - navigation (applicant has not adequately offset impacts);
    - threatened or endangered species, species in need of conservation, or significant historical/archeological resource;
    - natural oyster bars or private oyster leases





# Prior to February 4, 2013



Anne Arundel County – Location unknown

- Erosion control measures considered in order of preference
  - No action
  - Nonstructural shoreline stabilization
  - Structural measures to stabilize nonstructural stabilization
  - Revetments
  - Breakwaters
  - Groins
  - Bulkheads

COMAR 26.24.04.01(prior to February 4, 2013)



# Regulations implemented

## February 4, 2013

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- Applicant shall first consider:
  - No action
  - Relocation of structures
- If neither of the above options are feasible:
  - Nonstructural shore erosion control project
    - If structural component is necessary for project, it may include:
      - Breakwater, sill, or sand containment structure that is acceptable to the Department
      - Beach that is acceptable to the Department for the purpose of habitat enhancement
- Applicant may use structural shore erosion control project:
  - MDE approved waiver
  - Mapped as appropriate for structural stabilization  
( $\geq 8'$ /yr)

COMAR 26.24.04.01



# Applying for a shore erosion control structure

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- **Waiver from living shoreline:** (COMAR 26.24.04.01-2)
  - Use the Department Form
  - Complete waiver process prior to submission of application
- **Required with application:** (COMAR 26.24.04.01-3)
  - Waiver
  - Buffer Notice Form
    - Applicant certifies submission of BMP with application
    - Applicant certifies to abide by the requirement to obtain an authorization from MDE, receive approval for a BMP from local jurisdiction, and obtain all other local permits
  - Proposed Buffer Management Plan



# Waiver Form

COMAR 26.24.04.01-2

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- Navigation – Distance from MHWL to center of closest mapped or unmapped channel
- Width of waterway – MHWL to MHWL
- Depth at toe of bank – MLWL to substrate at the shoreline bank
- Fetch – unobstructed distance over open water within each compass quadrant
- Shoreline Orientation – compass direction perpendicular to the project shoreline
- Bottom material – hard or soft / muck, sand, silt, or clay
- Sensitive species – will construction adversely impact
- Site access – from water or from land? / site require grading or vegetation removal/trimming?
- Mapped shoreline? – yes, then automatic waiver



# Critical Area

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- Living shoreline designs frequently impact the critical area
  - Prior to February 4, 2013 - MDE, Critical Area Commission(CAC), and/or local county critical area reviewers would coordinate when feasible
    - Often BMP would be submitted to the local jurisdiction after MDE/Corps authorization
    - Impacts to CA not minimized or avoided
  - After February 4, 2013 - applicant required to submit Critical Area Buffer Notification Form and a proposed buffer management plan on all proposed shoreline stabilization methods
    - Application sent to CAC for review and comments



# Benefits

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- Early Coordination with CAC
  - Site visit
  - Comments
- Opens dialog between applicant, local jurisdiction, and MDE
- Eliminates confusion regarding planting or restoration requirements
- Entire design reviewed prior to issuance of State and federal authorizations
  - Grading appropriate
  - Plantings appropriate
  - Access to site, material storage area, etc.



# Softening the shoreline

Future common practice

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- Shoreline protection projects authorized between 2012 – 2015
  - Approximately 20% of projects were for living shorelines.
  - Approximately 37% of projects were for revetments/breakwaters/groins
  - Approximately 43% of projects were for replacement bulkheads



# Current design parameters

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- Sill height -  $\leq +1$  above Mean High Water
  - NOAA/Corps guidelines in MDSPGP have top elevation set below MHW
- Window openings – 10% of the linear feet of sill, minimum 1 opening every 100',  $\geq 5'$  wide, window bottom  $\leq$  to Mean Low Water
  - NOAA/Corps guidelines in MDSPGP have vent opening widths of 10-15 feet spaced at every 100 feet with bottom constructed at MLW
  - Sills must be designed to facilitate ingress/egress of estuarine fauna during regular tidal cycles – MDSPGP, NMFS' (National Marine Fisheries Service), DNR
  - Low marsh must receive adequate flushing
- $\geq 50\%$  low marsh plantings
  - General License authorizes filling of near shore shallow water for the purpose of shore erosion control by tidal vegetated wetland creation
    - Low marsh vegetated wetland habitat, though not entirely similar, has many similar characteristics of shallow water habitat
    - National Marine Fisheries Service Habitat Conservation Division is always concerned about shallow water habitat conversion





# Contacts and WebPages

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## MDE Home Page

<http://mde.maryland.gov/Pages/Home.aspx>

## MDE/US Army CORPS Joint Application

[http://mde.maryland.gov/programs/Water/WetlandsandWaterways/PermitsandApplications/Pages/Programs/WaterPrograms/Wetlands\\_Waterways/permits\\_applications/tidal\\_permits.aspx](http://mde.maryland.gov/programs/Water/WetlandsandWaterways/PermitsandApplications/Pages/Programs/WaterPrograms/Wetlands_Waterways/permits_applications/tidal_permits.aspx)

## JPA Instruction Booklet and Sample Plans Guideline

[http://mde.maryland.gov/programs/Water/WetlandsandWaterways/PermitsandApplications/Pages/Programs/WaterPrograms/Wetlands\\_Waterways/permits\\_applications/tidal\\_instructions.aspx](http://mde.maryland.gov/programs/Water/WetlandsandWaterways/PermitsandApplications/Pages/Programs/WaterPrograms/Wetlands_Waterways/permits_applications/tidal_instructions.aspx)

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From this



To this