## VIMS Shoreline Permit Application Report # 03-1185

### Applicant:
- **Baymark Construction Corporation**
  - **Locality:** Chesapeake Bay
  - **Watershed:** Eastern Shore Bayside
  - **Purpose:** Erosion Control
  - **Application Type:** Wetlands, Subaqueous
  - **Site Inspection:** 9/9/03

### Type of Activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Proposed Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakwater (ft)</td>
<td>1250</td>
</tr>
<tr>
<td>Breakwater</td>
<td>5 Unit(s)</td>
</tr>
<tr>
<td>Fill Intertidal Beach Community (Type XIII) (ft2)</td>
<td>1000</td>
</tr>
<tr>
<td>Impact Intertidal Beach Community (Type XIII) (ft2)</td>
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<td>Impact Subaqueous Bottom (ft2)</td>
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### Project Location

![Project Location Map](image)

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Center for Coastal Resources Management

P.O. Box 1346

Gloucester Point, VA 23062-1346

(804)684-7380, fax: (804)684-7179, e-mail: http://ccrm.vims.edu/
NOTE
The Virginia Institute of Marine Science (VIMS) recognizes that the regulatory process considers all aspects of a particular project, including socioeconomic factors. This report, however, only addresses marine environmental concerns.

Findings & Recommendations:

We have reviewed this proposal from a marine environmental viewpoint and it is our opinion that the individual and cumulative adverse impacts resulting from this activity may be locally significant in the short term (breakwater construction and beach adjustment) but if properly designed and constructed, should have minimal long term adverse impacts.

The reach of shoreline in question is experiencing significant erosion at present and has been eroding over a long period of time. The average erosion rate from 1850 to 1950 was greater than three feet per year. The net movement of sand in the along shore drift is to the south and there is a great deal of sand in the littoral system.

The gapped breakwaters are located primarily in subaqueous waters that support submerged aquatic vegetation (SAV) which is primarily growing in the troughs located between sand waves, running generally parallel to the shoreline. A few areas of slightly deeper water within the nearshore sand flat also support SAV. The SAV is a relatively stable feature in this area and the breakwater/beach nourishment activities will adversely affect some portion of this resource. It is not possible to predict the areal extent of this impact without knowing the location of the structures and the accompanying sand nourishment in relation to that of the seagrass beds. The breakwaters should be located as much as possible with an eye to avoiding the SAV beds in the area. Some type of compensation for this loss may be appropriate depending on what the actual losses are. The sand source is an upland borrow pit so no additional impact to SAV should occur in acquiring the necessary 66,600 cy.

Once the breakwaters and beach sand are placed and the shoreline has adjusted to the structures, they should reduce the amount of sand moving in a southerly direction along the nearshore. Every effort should be made to retain the nourishment sand both during and after construction. The tombolos and upper beach berm areas should have elevations sufficient to support the growth of dune grasses and we recommend that these areas be planted as part of this proposal.

From a marine environmental perspective, a properly designed and constructed breakwater system with adequate beach nourishment offers the best long term method for slowing erosion along this reach of shoreline. The recommendations offered in this report should help to minimize the unavoidable adverse effects on the marine environment.
Hydrologic units represent smaller, isolated watersheds defined by topography and flow direction. These units can be thought of as insulated ecosystems or landscapes within which resources can be managed at a larger scale. The cumulative impact of a project to resources within a hydrologic unit may be significantly greater than the impact to the larger watershed above.
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Permit Site Study Area

Chesapeake Bay
Northampton County

Project site

Tidal Marsh Inventory - TMI
- Arrow Arum-Pickerelweed
- Big Cordgrass
- Black Needle rush
- Brackish Water Mixed
- Cattail
- Freshwater Mixed
- Reed Grass
- Saltbush
- Saltmeadow
- Saltmarsh Cordgrass
- Yellow Pond Lily

SAV - 2001
Density
- less than 10%
- 10-40%
- 40-70%
- 70-100%

Roads
- Primary
- Secondary
- Tertiary

Intertidal flat
- Open water

0 0.25 0.5 Miles
**VIMS Shoreline Permit Application Report # 03-1185**

To Wetlands Board / VMRC: Please indicate Wetlands Board / VMRC action on this sheet and return to VIMS

**Application Number:** 03-1185
**Name:** Baymark Construction Corporation
**Locality:** Northampton County
**Waterway:** Chesapeake Bay

Please check here if this application was approved as proposed _____

Complete the form below if the application was modified.

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Please specify required modifications: ______________________________________________________
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Thomas A. Barnard, Director