VIMS Shoreline Permit Application Report # 03-1647

**APPLICANT:**
Virginia Railway Express  
PRINCE WILLIAM COUNTY

**Locality:**
Quantico Creek

**Immediate Waterway:**
Lower Potomac River

**Watershed:**
Prince William County

**Purpose:**
Road Construction, Improve Navigation

**Application Type:**
Wetlands, Subaqueous

**Site Inspection:**
9/8/03

**Report Date:**
12/17/03

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**Type of Activity**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Proposed Extent</th>
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</thead>
<tbody>
<tr>
<td>New Dredging (yd³)</td>
<td>63000</td>
</tr>
<tr>
<td>Impact Freshwater Mixed Community (Type XI) (ft²)</td>
<td>1700</td>
</tr>
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<td>Impact Subaqueous Bottom (ft²)</td>
<td>276780</td>
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**Total Impacts (ft²)**

Total Impacts (Wetlands) 7319
Total Impacts (Subaqueous) 276780
Total Impacts (Beach/Dune) 0
Total Fill (ft²) 0

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Project Location

Prince William County
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 are significant. We recommend that these impacts be avoided and minimized as much as feasible and that a plan of compensatory mitigation be required to attempt to offset unavoidable adverse effects.

In evaluating this proposal we have looked at the Environmental Assessment (EA) and the Joint Permit Application (JPA). We conducted an on-site review and consulted the VIMS seagrass and wetlands inventories for this area of the Potomac.

The proposed dredging for the access channel will mean the loss of approximately 1.7 acres of subaqueous bottom containing seagrasses. An additional 4.6 acres of non-vegetated bottom will be dredged to -7 feet mean low water. Both the non-vegetated and vegetated bottom areas can be expected to silt back in over time, given the depositional character of this area of the Potomac watershed, and a benthic faunal community will also return although initially populated by the more opportunistic species. The return of the seagrass community is much more problematic however, given the new depths involved.

The applicant has already examined the major alternative construction mechanisms for the new bridge, namely:

1. Temporary Work Bridge
2. Temporary Fill Causeway
3. End-out Build; using each bridge section as base for next.

According to the EA, each of these options was found to be impractical or did not result in significant reduction of environmental impact from the applied-for alternative of dredging an access channel. If the Commission, in its public interest review, concurs with these findings and permits the dredging alternative, we make the following recommendations:

1.) The dredging should be limited to the minimum necessary for bridge construction in terms of both depth and areal extent. The proposed disposal area appears adequate to contain the dredged material and hydraulic dredging is the preferred dredge method from an environmental perspective.

2.) No dredging should be conducted during the period of mid-March through June in order to minimize adverse effects on the anadromous fish spawning run.

3.) All areas of temporary fill impact should be restored to original contours and hydrology, and
revegetated with appropriate plant species once construction is completed.

4.) We also recommend that, given the unavoidable impacts to seagrasses, wetlands and subaqueous lands, a compensatory mitigation element be developed and added to the permit. Such a plan should contain elements addressing both water quality and habitat restoration since "on-site" mitigation may not be feasible in this case.

In summary, the Environmental Assessment for the new bridge over Quantico Creek indicates that the described aquatic impacts are unavoidable. Given the significance of the construction activities to the creek, we recommend compensatory mitigation aimed at replacing the natural functions lost to the dredge and fill operation. A primary goal of the mitigation plan should be to locate compensation as close as possible to where the impacts will occur.

Thomas A. Barnard, Ph. D.
Marine Scientist
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.
Permit Site Study Area

Quantico Creek
Prince William County

Project site

Tidal Marsh Inventory - TMI
- Arrow Arum-Pickerelweed
- Big Cordgrass
- Black Needlerush
- Brackish Water Mixed
- Cattail
- Freshwater Mixed
- Reed Grass
- Saltbush
- Saltmarsh Cordgrass
- Saltmeadow
- 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 # 03-1647

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

Application Number: 03-1647
Name: Virginia Railway Express
Locality: Prince William County
Waterway: Quantico Creek

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