Maryland’s Chesapeake Bay Restoration Financing Strategy

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Environmental Finance Center

- Located at the University of Maryland
- Regional center: EPA Region 3
- Capacity and technical assistance to local and state governments
- Focus on environmental financing and economic issues
Summary Findings

• Restoration success is achievable: in aggregate the state is on track to meet 2025 reductions
Summary Findings

• Revenue is sufficient: approximately $1 billion in state investments will be made by 2025

• Assumptions:
  • Full compliance with existing regulations
  • State revenues are fully maintained
  • Investments are made appropriately
Summary Findings

• Success doesn’t end in 2025
• Renewed focus on cost efficiency and effectiveness
• Implementation responsibility is the state’s; therefore, the *financing* responsibility is the state’s

• Two implementation approaches:
  • Regulate thereby shifting financing responsibility
  • Direct funding or financing
Section 1: Background
Report Structure: Sections 2-5

- Analytical Process:
  - Regulatory structure
  - Primary financing mechanisms
  - Estimated implementation costs
  - Proposed recommendations

- Applied to the four primary restoration sectors:
  - Agricultural management
  - Urban stormwater management
  - On site wastewater management
  - Point source wastewater management
Section 2: Agricultural Management

Regulatory Structure:

- Primary regulatory programs:
  - Water Quality Improvement Act
  - Phosphorus Management Tool
  - MAFO/CAFO Permits

Regulatory Gap:

- 98% nitrogen; 78% phosphorus
Section 2: Agricultural Management

**Financing Mechanisms:**
- Regulated pounds: cost-share/subsidies, private
- Unregulated pounds: cost-share/subsidies, private

**Financing Gap:**
- Costs: $928,000,000
- Revenue: $737,671,560
- Gap: $190,328,440
Section 2: Agricultural Management

**Recommendations:**

- Enforce existing regulations
- Focus existing investments on efficiency
Section 3: Stormwater

**Regulatory Structure:**

• New emissions (development):
  Stormwater Management Act of 2007 and NPDES construction permits

• MS4 permitting program

**Regulatory Gap:**

• 44% - 75% of load is unregulated (impacted by levels of implementation)
Section 3: Stormwater

**Financing Mechanisms:**
- New development: private
- New infrastructure: public
- Existing development: public
  - General funds
  - Stormwater fees

**Financing Gap:**
- WIP costs: $7,388,000,000
- MS4 costs: $3,387,839,674
- State revenue flows: $560,000,000
- Local MS4 revenue: $2,642,923,789
- **WIP financing gap:** $4,185,076,211
- **MS4 financing gap:** $744,915,885
Section 3: Stormwater

**Recommendations:**

- Continued commitment to MS4 permit enforcement
- Target state investments to unregulated emissions
Section 4: Septic

*Regulatory Structure:*

- Chesapeake Bay Nutrient Reduction Act of 2009
- Sustainable Growth and Agricultural Preservation Act of 2012

*Regulatory Gap:*

- 98% of *existing* load is unregulated
Section 4: Septic

**Financing Mechanisms:**
- Bay Restoration Fund + Private Investment

**Financing Gap:**

<table>
<thead>
<tr>
<th>Costs:</th>
<th>$3,700,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue:</td>
<td>$297,440,000</td>
</tr>
<tr>
<td><strong>Gap:</strong></td>
<td><strong>$3,402,560,000</strong></td>
</tr>
</tbody>
</table>
Section 4: Septic

**Recommendations**

- Don’t subsidize failing tanks
- Expand BAT requirement to the entire state
- Allow attrition to solve the problem
Section 5: Point Source Wastewater

Regulatory Structure:
• NPDES permitting system

Regulatory Gap:
• No gap in regard to the WIP
• Future growth is included in regulation
  - Offsets are required
Section 5: Point Source Wastewater

Financing Mechanisms:
- Wastewater rates
- Bay Restoration Fund

Financing Gap:
Costs: $2,430,000,000
Revenue: $2,430,000,000
Gap: $0
## Summary Analysis

### Table 6.1: Regulatory Gaps by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Annual WIP Nitrogen Load Reduction</th>
<th>Regulated Load</th>
<th>Regulatory Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point Source Wastewater</td>
<td>5,450,000</td>
<td>5,450,000</td>
<td>0</td>
</tr>
<tr>
<td>Onsite Wastewater</td>
<td>1,150,000</td>
<td>25,293</td>
<td>1,124,707</td>
</tr>
<tr>
<td>Agriculture</td>
<td>4,730,000</td>
<td>248,000</td>
<td>4,482,000</td>
</tr>
<tr>
<td>Urban Stormwater</td>
<td>1,930,000</td>
<td>505,965</td>
<td>1,424,035</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>13,260,000</td>
<td>6,229,258</td>
<td>7,030,742</td>
</tr>
</tbody>
</table>
## Summary Analysis

### Table 6.2: Total Estimated WIP Financing Gap

<table>
<thead>
<tr>
<th></th>
<th>Estimated Costs</th>
<th>Estimated Revenue Flows</th>
<th>Financing Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Point Source Wastewater</strong></td>
<td>$2,430,000,000</td>
<td>$2,430,000,000</td>
<td>$0</td>
</tr>
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<td>$4,185,076,211</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>$14,446,000,000</td>
<td>$6,668,035,349</td>
<td>$7,777,964,651</td>
</tr>
</tbody>
</table>
Recommendations

*Fundamental or Aspirational Goals:*

- Target state investments to unregulated emissions
- Strive for efficiency and cost effectiveness
- Effectively and aggressively engage the private sector
Recommendations

• Create a new coordinated state-based financing process
  • Create a true restoration fund
  • Separate financing decision-making from political process
  • Expressly and explicitly engage the private sector and markets
Recommendations

• **Establish an adaptive financing system**

• **Shift to performance**
  • Inter-sector efficiency
  • Intra-sector efficiency

• **Transition to a credit-based financing system**
  • Basis for both performance and market-based financing
  • Foundation for greater innovation, efficiency, and risk management
Recommendations

• *State-level performance and market-based financing*
  • Focus on new loads rather than existing loads
  • Initial focus on guiding state investments
  • Explicitly incentivize innovation and efficiency
Recommendations

• **State role in establishing performance and market systems:**
  - Establish market currency
  - Establish and enforce pollution offset requirements
  - Establish market infrastructure (essentially complete)
Summary

• Restoration success is achievable
• Necessary resources are in place, though enhancements to regulations are necessary
• Focus on efficiency and effectiveness