

# 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



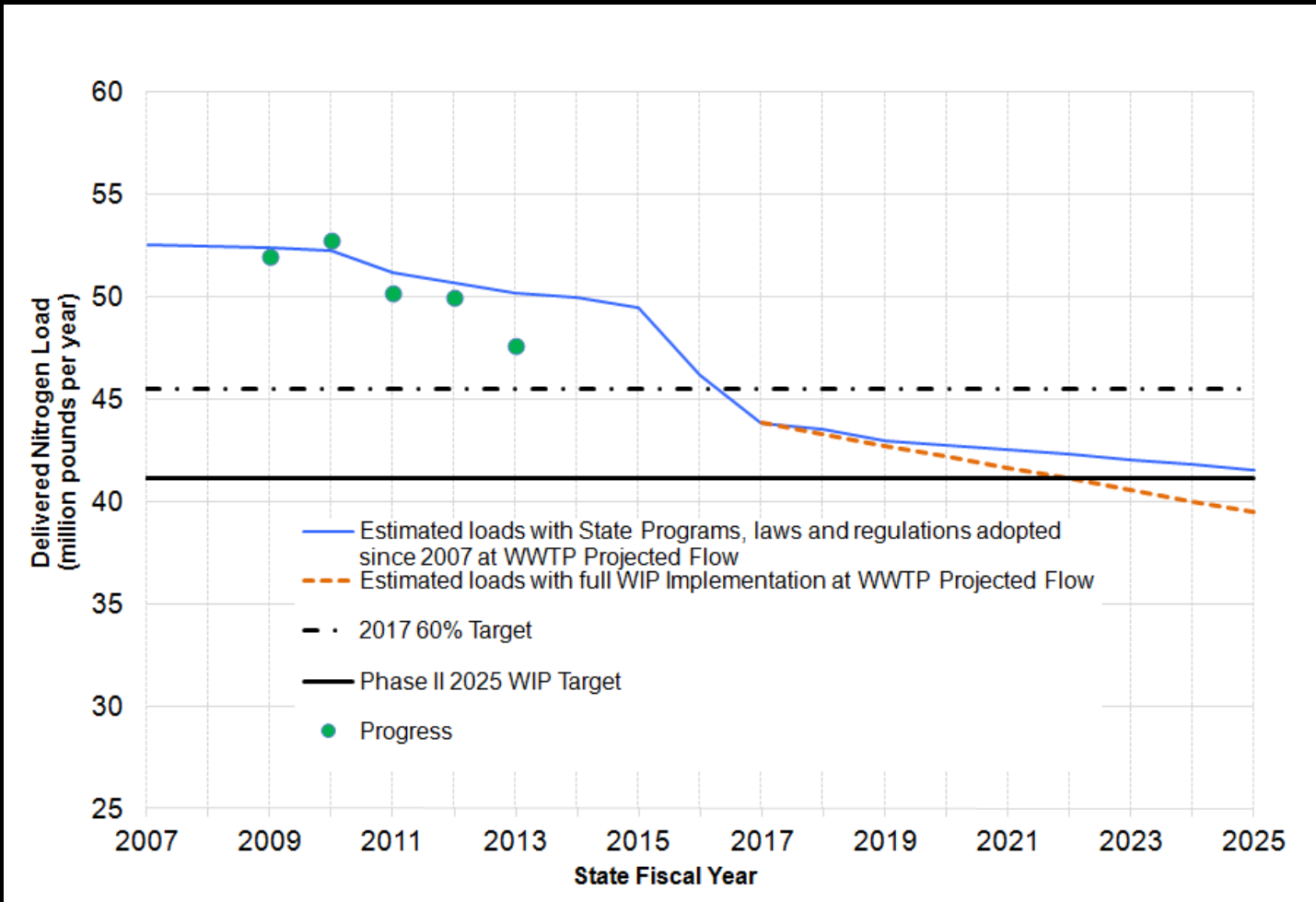
# Summary Findings

- 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
<b>WIP financing gap:</b>	<b>\$4,185,076,211</b>
<b>MS4 financing gap:</b>	<b>\$ 744,915,885</b>



## 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:*

Costs: \$3,700,000,000

Revenue: \$ 297,440,000

**Gap: \$3,402,560,000**



## 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
<b>Gap:</b>	<b>\$0</b>

# Summary Analysis

**Table 6.1: Regulatory Gaps by Sector**

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

# Summary Analysis

**Table 6.2: Total Estimated WIP Financing Gap**

	Estimated Costs	Estimated Revenue Flows	Financing Gap
Point Source Wastewater	\$2,430,000,000	\$2,430,000,000	\$ 0
Onsite Wastewater	\$3,700,000,000	\$297,440,000	\$3,402,560,000
Agriculture	\$928,000,000	\$737,671,560	\$190,328,440
Urban Stormwater	\$7,388,000,000	\$3,202,923,789	\$4,185,076,211
<b>Total:</b>	<b>\$14,446,000,000</b>	<b>\$6,668,035,349</b>	<b>\$7,777,964,651</b>

# 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

