



**Department of the Environment**

**Bay Restoration Fund  
Update to  
The Environmental Matters  
Committee**

*Maryland Department of Environment*

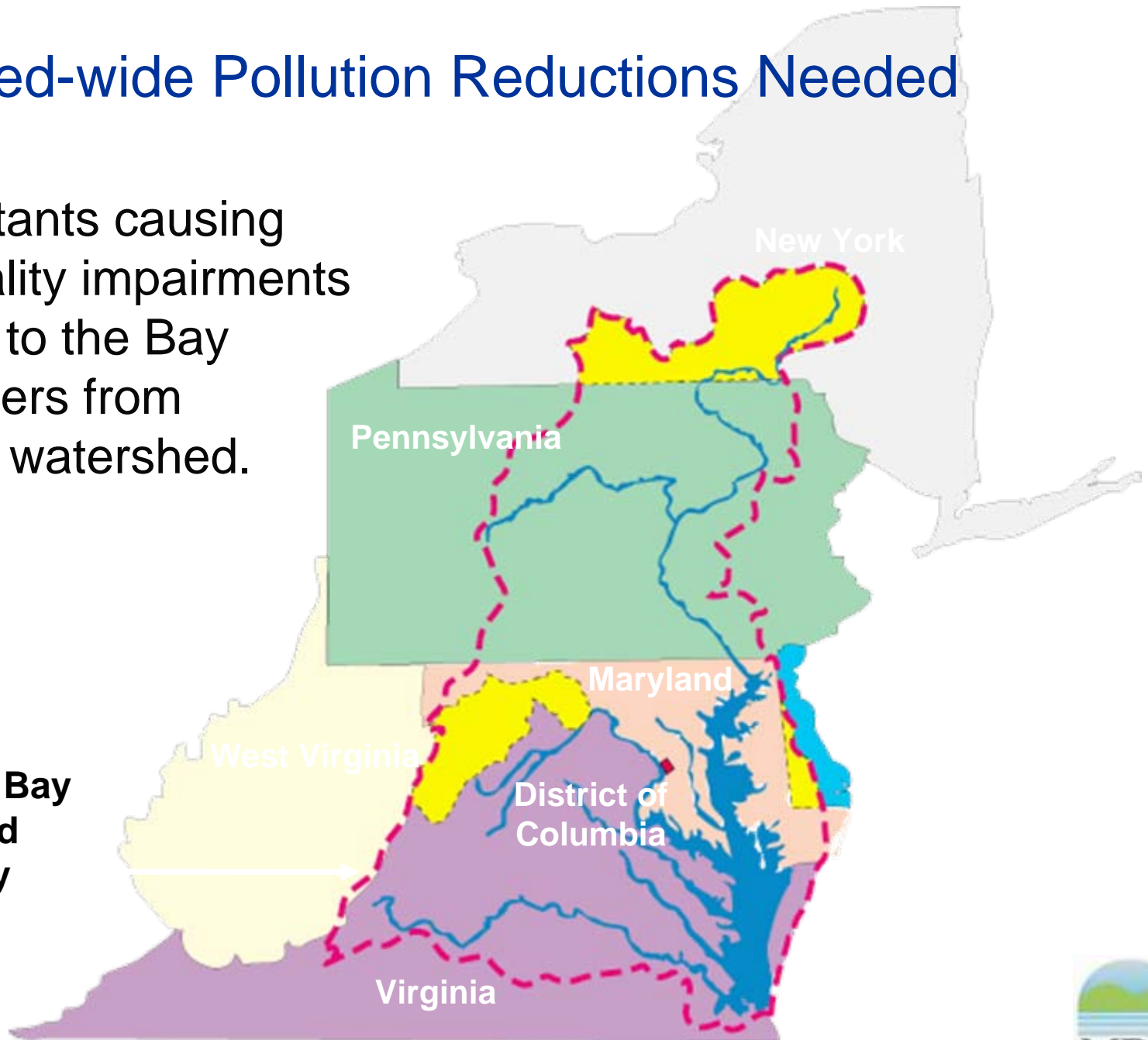
*January 22, 2009*



# Watershed-wide Pollution Reductions Needed

The pollutants causing water quality impairments drain into to the Bay and its rivers from the entire watershed.

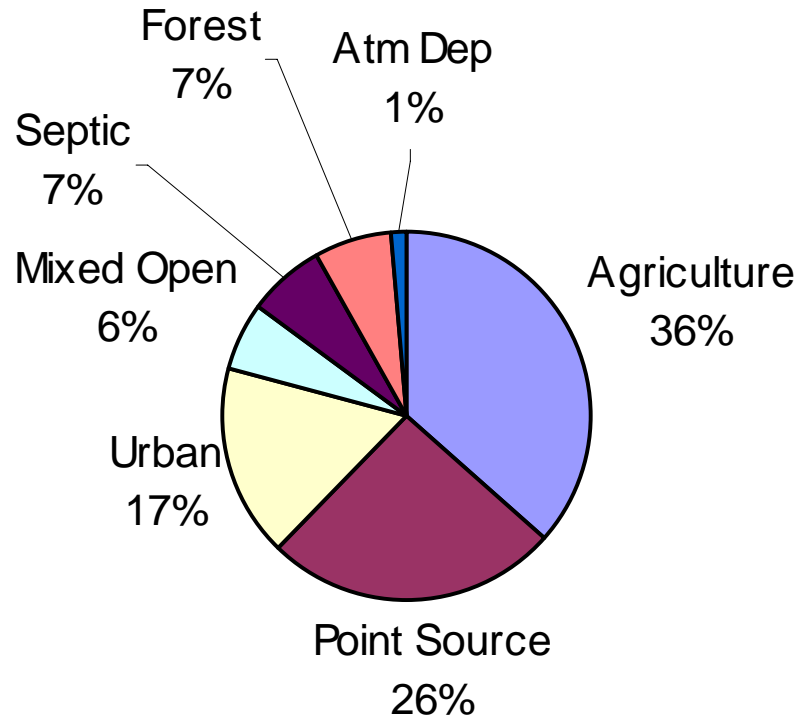
**Chesapeake Bay  
Watershed  
Boundary**



# Cap Load Allocations by State

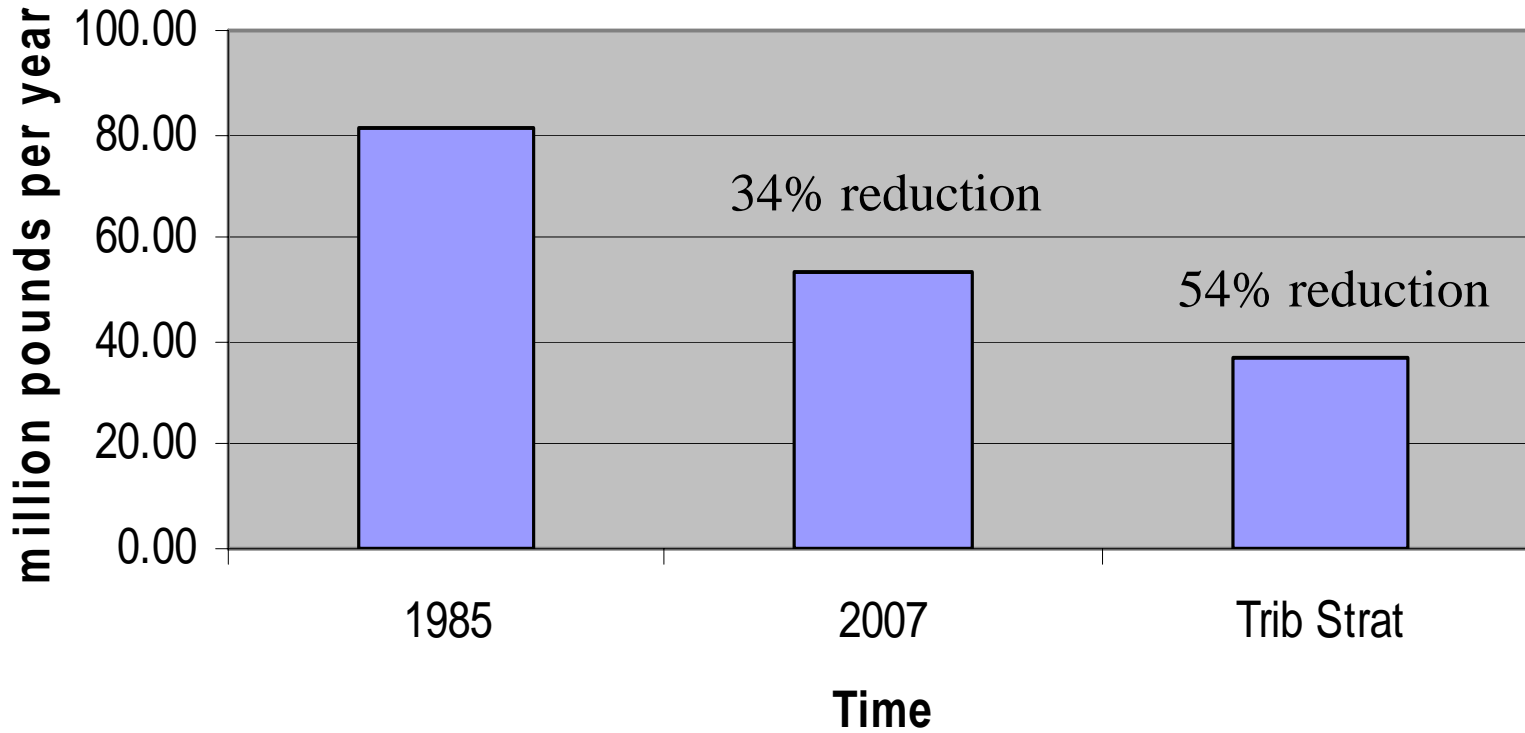
	Nitrogen Allocation (million pounds/year)	Phosphorus Allocation (million pounds/year)
PENNSYLVANIA	72	2.3
MARYLAND	37	2.9
VIRGINIA	51	6.0
DISTRICT OF COLUMBIA	2	0.3
NEW YORK	13	0.6
DELAWARE	3	0.3
WEST VIRGINIA	5	0.4
<b>SUBTOTAL</b>	<b>183</b>	<b>12.8</b>
<b>CLEAR SKIES REDUCTION</b>	<b>-8</b>	
<b>BASIN-WIDE TOTAL</b>	<b>175</b>	<b>12.8</b>

## Sources of Nitrogen Load to Bay from MD



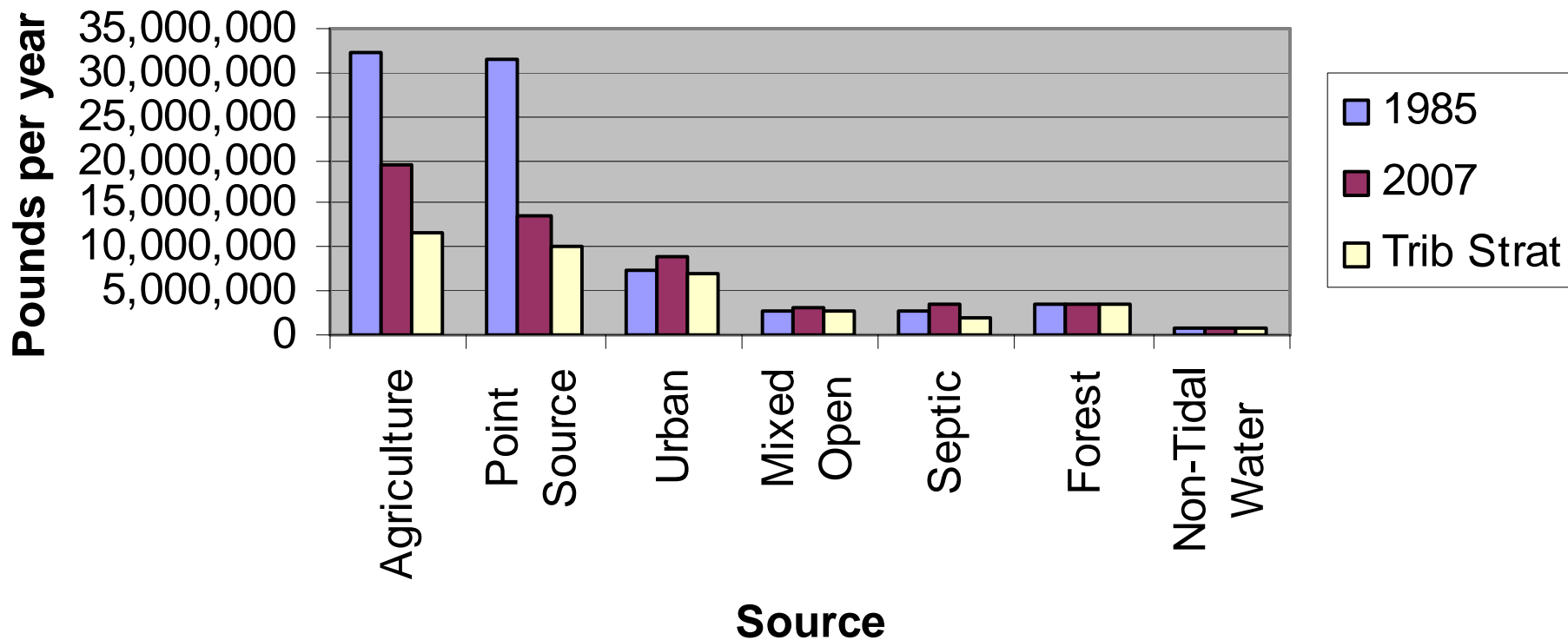
Combination of point sources and urban runoff = 43%

# Total Nitrogen Loading to the Bay from MD



63% of goal achieved

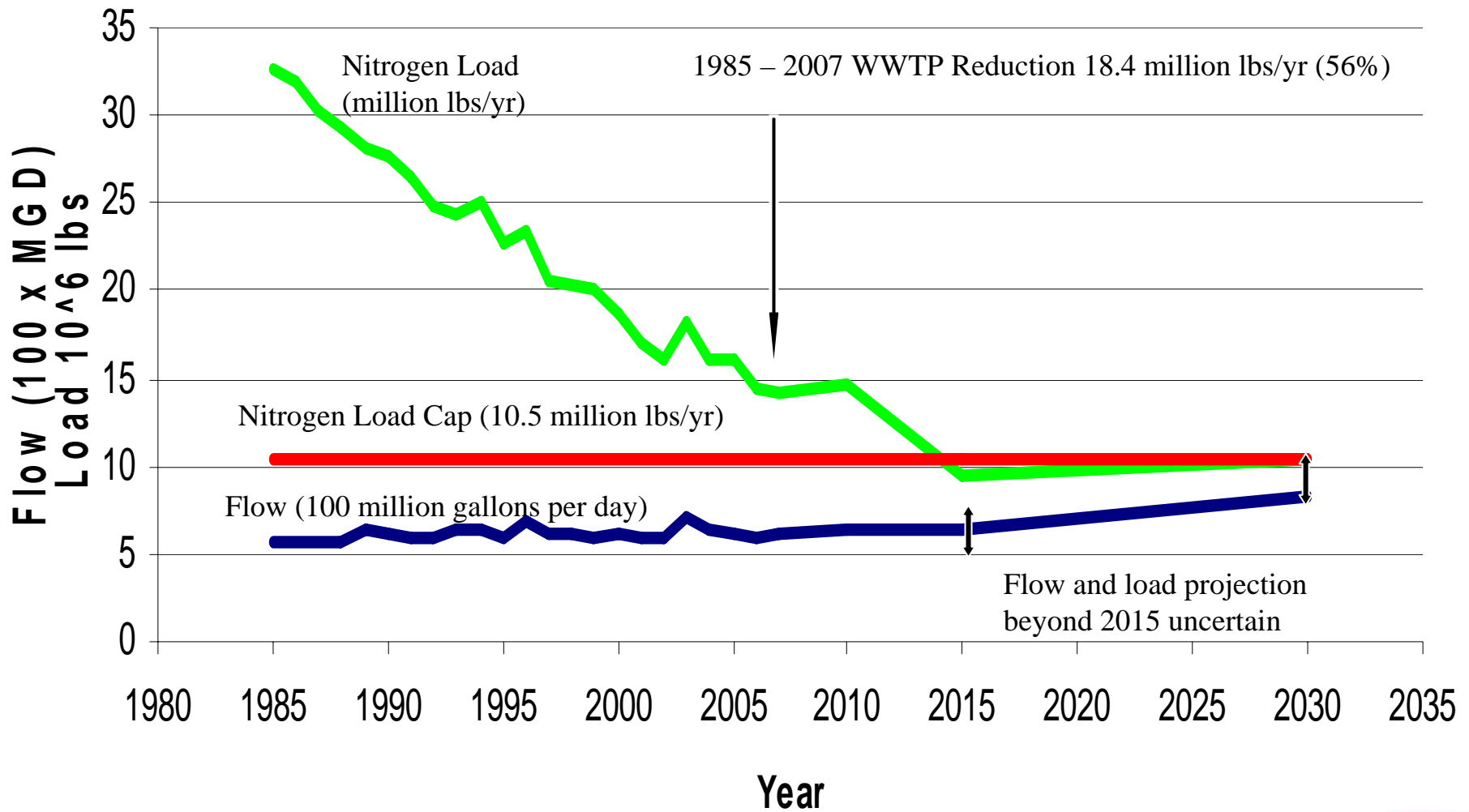
## Nitrogen Loading to Bay From MD



Agriculture and point source load significantly lowered

Urban runoff and septic system load increasing

# MD WWTP Flow and Nitrogen Load





# Status of ENR Upgrade Projects

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To date, approximately \$115.5 million in Bay Restoration Funds have been awarded toward ENR upgrades and:

11 facilities are operational

9 facilities are under construction

19 are under design

22 are in planning







# BayStat Tracking

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- MDE has been providing monthly updates to BayStat on projects' status and schedule.
- All targeted projects are being monitored and delays are being identified and addressed on project by project basis.
- Programmatic issues attributing to the delays are being identified and addressed through the BayStat process.





# 2009 Forecast for ENR Upgrades

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- MDE will continue to work with BayStat toward successful implementation of the ENR upgrades.
- Three additional facilities are expected to complete construction in 2009.
- MDE goal is to initiate the construction of 10 additional facilities including Patapsco in 2009.





# Funding Shortfall for ENR Upgrades

ENR funding deficit is expected to start in FY 2012 and reach \$245 million by 2018. The BRF Advisory Committee will evaluate the following options in more detail prior to making recommendations:

- Increasing the Bay Restoration Fund (BRF) fee, which is currently \$2.50 per month per Equivalent Dwelling Unit;
- Reducing the ENR grant, which currently is at 100% of eligible costs;
- Reprioritizing the upgrade of the ENR projects, while delaying or not undertaking the upgrade of certain WWTPs;
- Seeking BRF statutory changes that allow the Bay fees to make debt service payment on bonds issued by local governments (for ENR eligible cost) that have a term of up to 30 years.





# Three Largest Treatment Plants

**Back River, Patapsco and Blue Plains ENR upgrades combined will reduce 63% of the Total Nitrogen (TN) from point sources needed to meet the Bay loading cap**

<b>Facility</b>	<b>Reduction in Million Lbs/Year</b>	<b>% of TN Reduction achieved</b>
Back River	2.2	19%
Patapsco	3.1	26%
Blue Plains (MD Portion)	2.1	18%
63 other plants	4.3	37%





# Blue Plains WWTP

- 370 million gallons per day (MGD) facility serving communities in Maryland (46% of the flow), DC (41%), and Virginia (13%).
- Currently designed to achieve BNR with 8 mg/l total nitrogen and 0.18 mg/l total phosphorus.
- The goal of the ENR upgrade is to achieve 3 mg/l total nitrogen. No improvement is needed to meet the phosphorus removal goal (currently at 0.18 milligrams per liter).
- Estimated cost of upgrade is \$953 million (Maryland portion is \$245 to \$438 million).
- Construction Start: Sept 2011/Completion: June 2015





# Back River WWTP

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- 180 million gallons per day (MGD) facility serving communities in Baltimore City (50%) and Baltimore County (50%).
- Currently designed to achieve BNR with 8 mg/l total nitrogen and 0.2 mg/l total phosphorus.
- The goal of the ENR upgrade is to achieve 3 mg/l total nitrogen. No improvement is needed to meet the phosphorus removal goal (currently at 0.2 milligrams per liter).
- Estimated cost of upgrade is \$117 million.
- Construction Start: Nov 2010/Completion: Nov 2013





# Patapsco WWTP

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- 73 million gallons per day (MGD) facility serving communities in Baltimore City (32%), and Anne Arundel , Baltimore and Howard Counties (68%).
- Has not been upgraded to achieve BNR.
- The goal of the BNR/ENR upgrade is to achieve 3 mg/l total nitrogen and 0.3 mg/l total phosphorus.
- Estimated cost of upgrade is \$330 million.
- Construction Start: June 2009/Completion: Feb 2013





# Status of Septic Upgrades

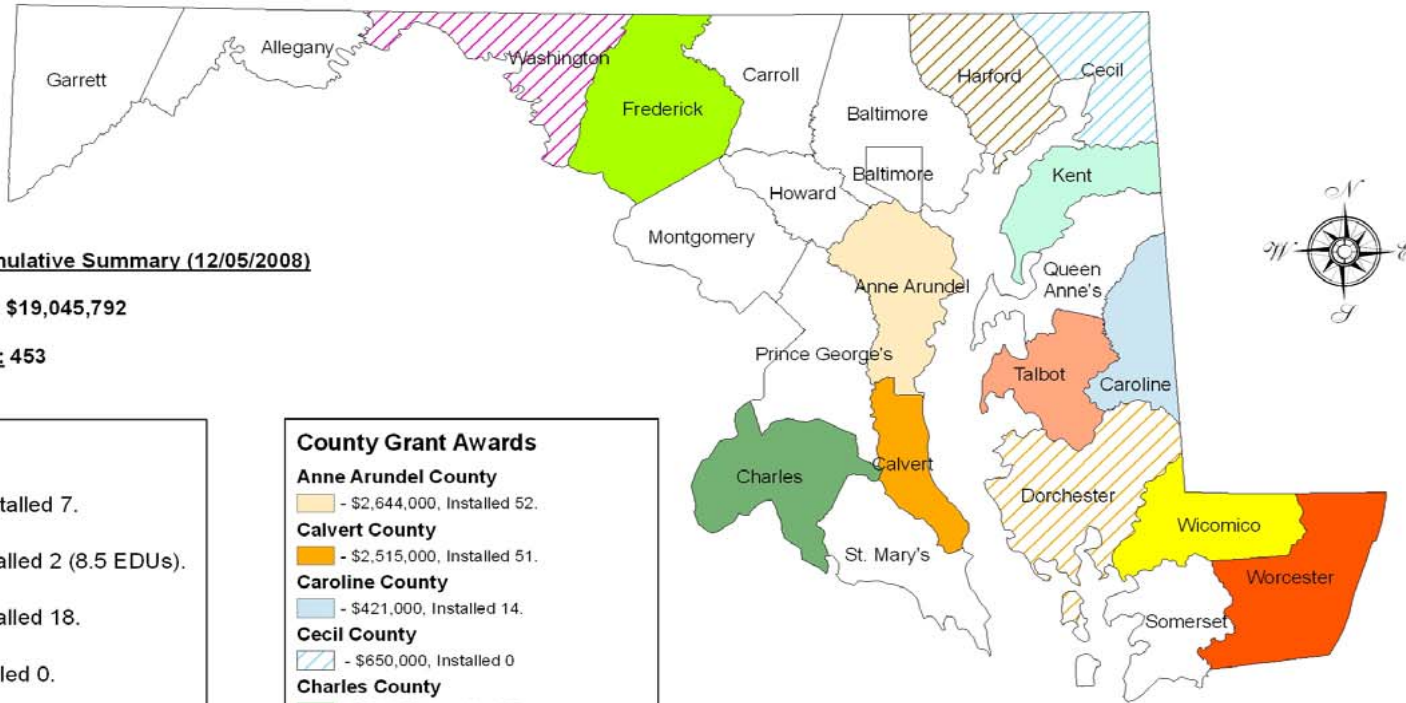
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- 14 counties have established upgrade programs
- Over \$19 million in grants to Counties and individuals awarded
- As of December 6, 2008 453 septic systems have been upgraded to remove nitrogen through the BRF.





# Bay Restoration Fund OSDS Grant Awards and Installations



## Cumulative Summary (12/05/2008)

**Total grant awards: \$19,045,792**

**Total installed units: 453**

### MDE Direct Awards

#### Baltimore County

Award \$253,572, Pending 11, Installed 7.

#### Carroll County

Award \$146,064, Pending 3, Installed 2 (8.5 EDUs).

#### Dorchester County

Award \$244,079, Pending 2, Installed 18.

#### Garrett County

Award \$41,049, Pending 2, Installed 0.

#### Harford County

Award \$117,258, Pending 6, Installed 3.

#### Howard County

Award \$177,476, Pending 6, Installed 4.

#### Montgomery County

Award \$386,670, Pending 11, Installed 18.

#### Prince George's County

Award \$62,731, Pending 4, Installed 1.

#### Queen Anne's County

Award \$425,353, Pending 17, Installed 22.

#### Somerset County

Award \$1,294,902, Pending 67, Installed 45.

#### St. Mary's County

Award \$181,124, Pending 4, Installed 11.

#### Washington County

Award \$78,815, Pending 3, Installed 2.

#### Wicomico County

Award \$21,926, Pending 1, Installed 1.

### County Grant Awards

#### Anne Arundel County

- \$2,644,000, Installed 52.

#### Calvert County

- \$2,515,000, Installed 51.

#### Caroline County

- \$421,000, Installed 14.

#### Cecil County

- \$650,000, Installed 0

#### Charles County

- \$604,000, Installed 37.

#### Dorchester County

- \$409,000, Installed 0

#### Frederick County

- \$712,000, Installed 19.

#### Harford County

- \$1,038,000, Installed 0

#### Kent County

- \$597,000, Installed 26.

#### Talbot County

- \$1,168,000, Installed 67.

#### Wicomico County

- \$2,719,000, Installed 45.

#### Worcester County

- \$1,142,000, Installed 8.

#### Queen Anne's County (Corsica River)

- \$287,000, Installed 0.

#### Washington County

- \$750,00, Installed 0

**Award:** Includes installed and pending installation.

**Pending:** Unit selected and awarded, not in ground.

\* Includes 2008 Board of Public Works Approvals



Martin O'Malley, Governor  
 Anthony Brown, Lt. Governor  
 Shari Wilson, Secretary  
 Robert M. Summers, Deputy Secretary



# Public Outreach Efforts for Septic Upgrades

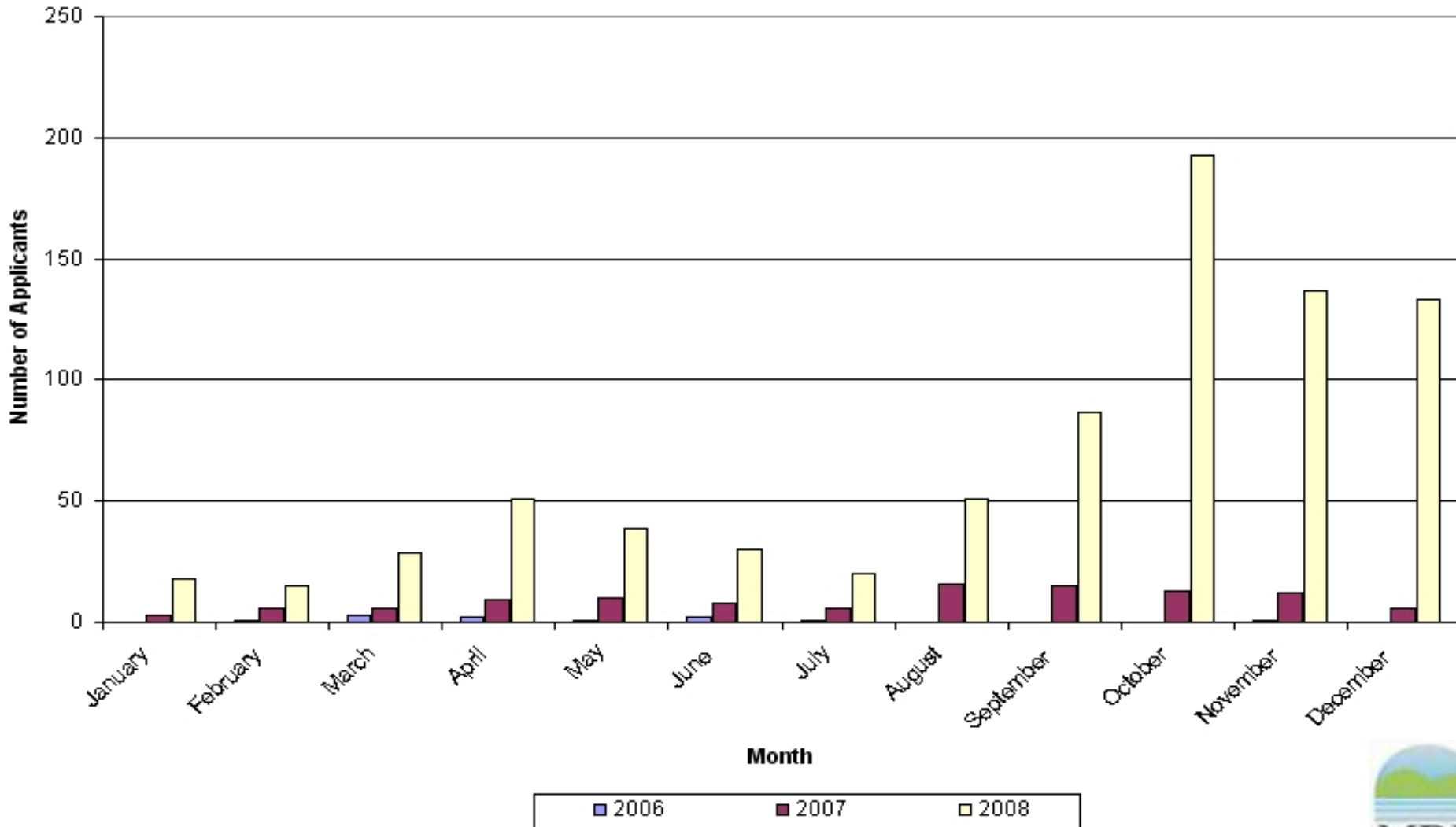
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- In the fall of 2008 MDE produced a radio advertisement featuring the Governor promoting the Bay Restoration Fund.
- MDE field staff given training to enable them to inform property owners of the availability and advantages of the BRF Septic System Upgrade Program.
- MDE began targeting large septic systems with individual State discharge permits to notify them of the availability of the BRF for upgrading their system.



# Results of Outreach Efforts

Applications for 2006, 2007 and 2008  
(Applicants directed to MDE for processing)





# Recommendations

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- Maintain focus on upgrading the three largest wastewater treatment facilities -- Blue Plains, Back River and Patapsco.
- Work with DC and VA to get more federal support for Blue Plains ENR and combined sewer overflow control projects.
- Continue efforts to increase septic upgrades, particularly in the Critical Area.

