Wastewater treatment, regulation and financing in Maryland

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Maryland is home to 5 million people

Living in our cities …

… and in the suburbs
Sewage disposal systems in Maryland’s rural areas

Then … and now …
Regulation of onsite sewage disposal

- Responsibility for regulation delegated by the State to local health departments
- Objective to protect the public health
  - Prevent exposure to raw sewage to prevent transmission of disease, odors, etc.
  - Ensure surface waters, groundwater and drinking water wells are protected
- Homeowners and businesses pay for their own systems and pay for septage pumping and disposal
  - $5,000 - $7,000 per home, plus $100 per year for pumping and disposal of septage
Septage is pumped and hauled by truck to a treatment plant or to be used as a soil amendment on cropland
Sewage treatment in our cities
Combined Sewer System

- POTW
- Overflow Valve
Sewage treatment plants
Implementation Plans). Explore the data by selecting the options below. Learn more about BayTAS and the terminology of the TMDL in the glossary found in Section 13 of the TMDL. Get answers to frequently asked questions about the Bay TMDL.
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Click on a map feature or select from the options below to view TMDL information by State

Maryland

- Show TMDL Allocations
- Show Progress towards Phase II WIP Planning Targets

Total Allocation for Nitrogen:
39,085,845 lbs/year

Total Allocation by Sector:
- Wastewater: 10,408,434 lbs/year (26.6%)

Download Data
Go to Watershed Implementation Plan

Graph showing comparisons between 2009 baseline, 2017 target, and 2025 target.
Waste Water Treatment

- Most waste water treatment facilities use biological processes to remove suspended solids and BOD
- Primary treatment - screening, sedimentation, floatation
- Secondary treatment - biological treatment systems (trickling filters, activated sludge, etc.)
A variety of different sizes and technologies are employed in different parts of the State.
Wastewater Treatment Plant Upgrades

- The majority of Maryland’s 66 targeted wastewater treatment plants have been upgraded with the Biological Nutrient Removal (BNR) technology.

- Nutrient loading has been reduced by over 50% since 1985.

- With Bay Restoration Fund grants, Enhanced Nutrient Removal (ENR) upgrades of major sewage treatment plants are currently underway.

- When completed, nutrient loading will be reduced by over 70%
In areas where land is available, spray irrigation using treated wastewater is used to grow crops and recharge the groundwater table.
Municipal and industrial point sources in Maryland

Facilities with Active NPDES Permitted Outfalls

Legend

- NPDES Industrial Facilities with outfalls
- NPDES Municipal Facilities with outfalls
- State of Maryland

NOTE: This map displays currently active industrial and municipal facilities with National Pollution Discharge Elimination System (NPDES) permitted outfall. Many of the 400+ industrial facilities represented on this map have permits for multiple outfalls. There are currently over 1200 industrial outfalls state-wide.
Biological Nutrient Removal and Enhanced Nutrient Removal

Maryland's Major Wastewater Treatment Plants in the Chesapeake Bay Watershed

Map Date -- 7 January 2004
Implementation of basic pollution control measures

- Construction grants program for public wastewater treatment systems (up to 85%)
- State Revolving Loan Fund (SRF)
  - very low to 0% interest depending on ability to pay
CWSRF-- A Revolving Fund

Capitalization

$ Federal
$ State

State CWSRF Program

Communities, Individuals, Businesses, Nonprofits

States Match Federal Capitalization Grants (20%)

Repayments to CWSRF Become Available for New Loans

Federal Capitalization Provides Initial Funding

CWSRF Provides Low-Interest Loans

State Revolving Fund
Financing basic sewage treatment

- Homeowners and businesses pay monthly, quarterly or annual fees to municipality (e.g. $155 to $615 per year) to pay for basic debt service and O&M
- Businesses pay surcharge for higher BOD or TSS load in some areas
Financing Advanced Wastewater Treatment

- BNR cost-share grants 50%:50%
  - (State-local, some federal)
  - Financed by general obligation bonds and State property tax

- ENR Grants (100% State) – Bay Restoration Fund
  - Financed by $5/month State surcharge on sewer bills