

# Wastewater treatment, regulation and financing in Maryland

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Secretary

Maryland Department of the  
Environment

Maryland is home to 5 million people

Living in our cities ...



... and in the suburbs

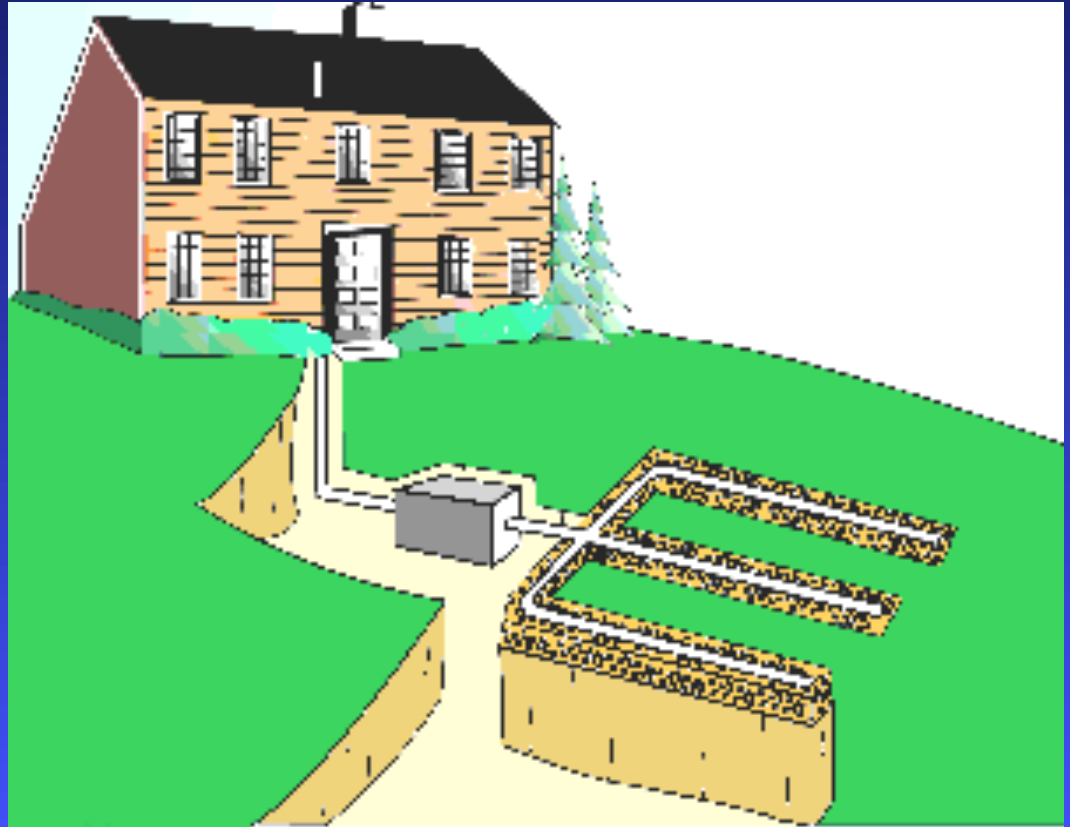


# Sewage disposal systems in Maryland's rural areas

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

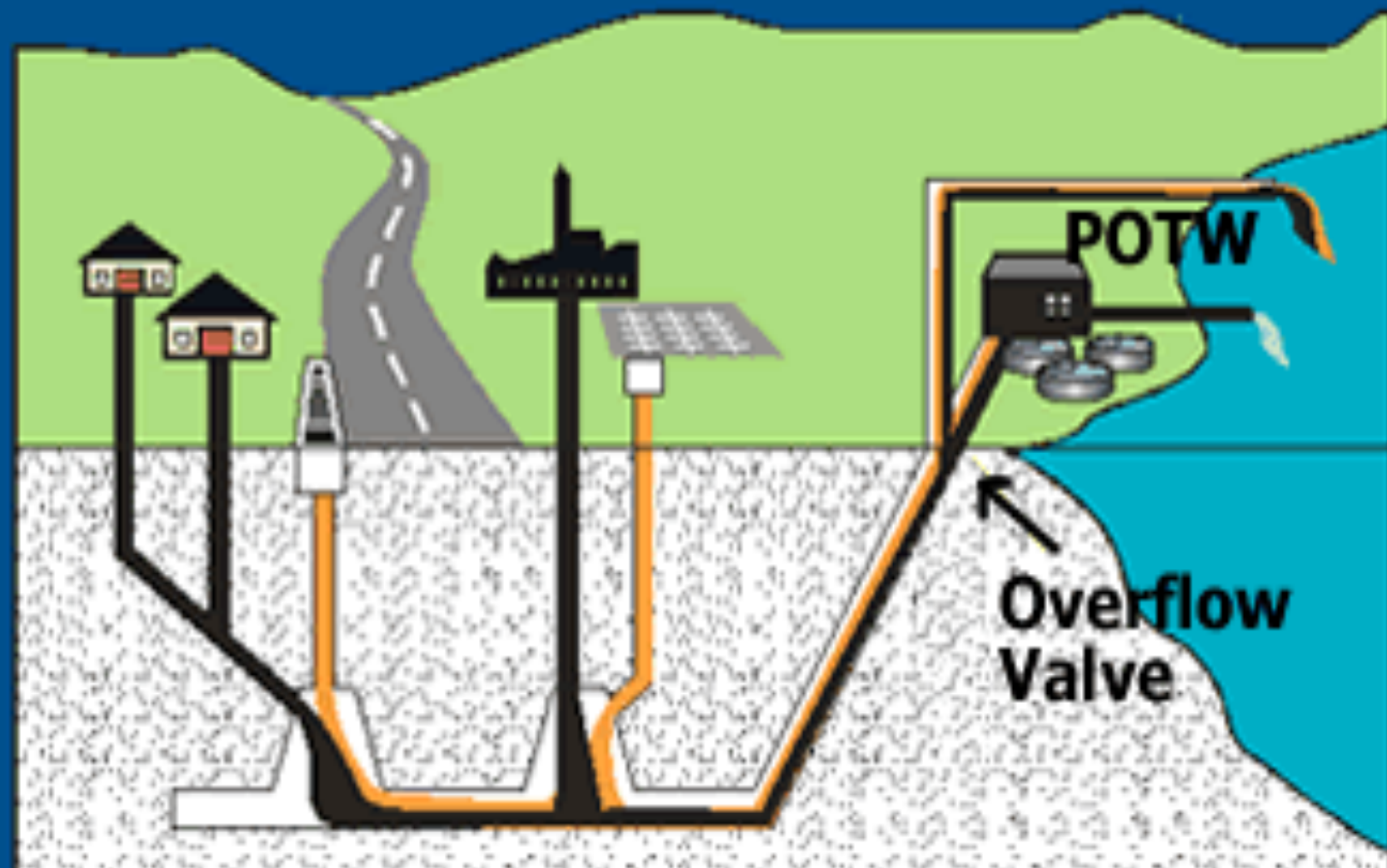


# Sewage treatment in our cities



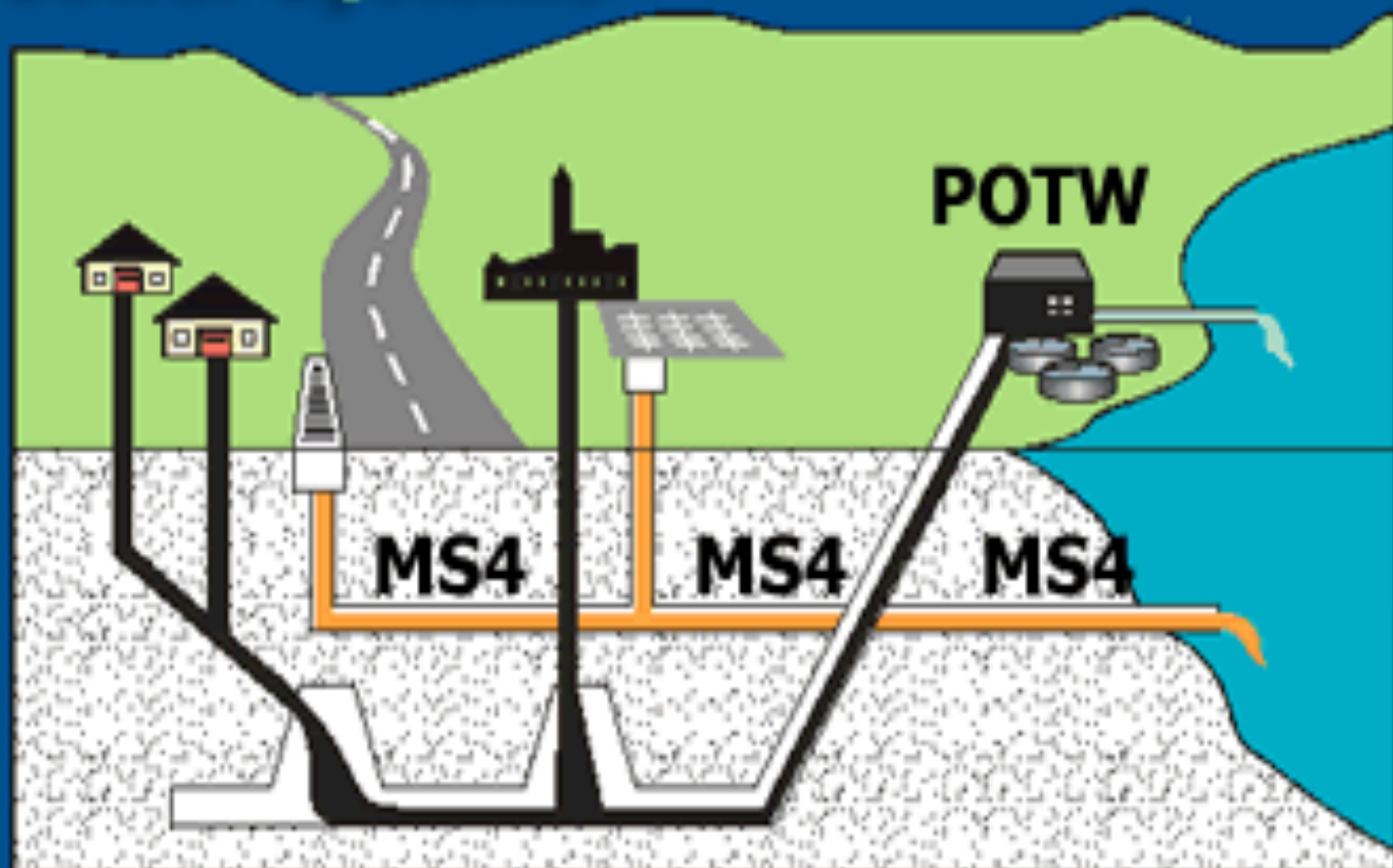
# Combined Sewer System

NPDES Permitting



# Municipal Separate Storm Sewer Systems

NPDES Permitting





# 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.

States Basins Segments Permitted Facilities

Go to: All States

Streets Imagery

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Go to: All States

Streets Imagery

300 km

Click on a map feature or select from the options below to view TMDL information by State

### All States

Show TMDL Allocations  Show Progress towards Phase II WIP Planning Targets

Nitrogen Phosphorus Total Suspended Solids

Total Allocation for Nitrogen:

## 201,611,405 lbs/year

Download Data

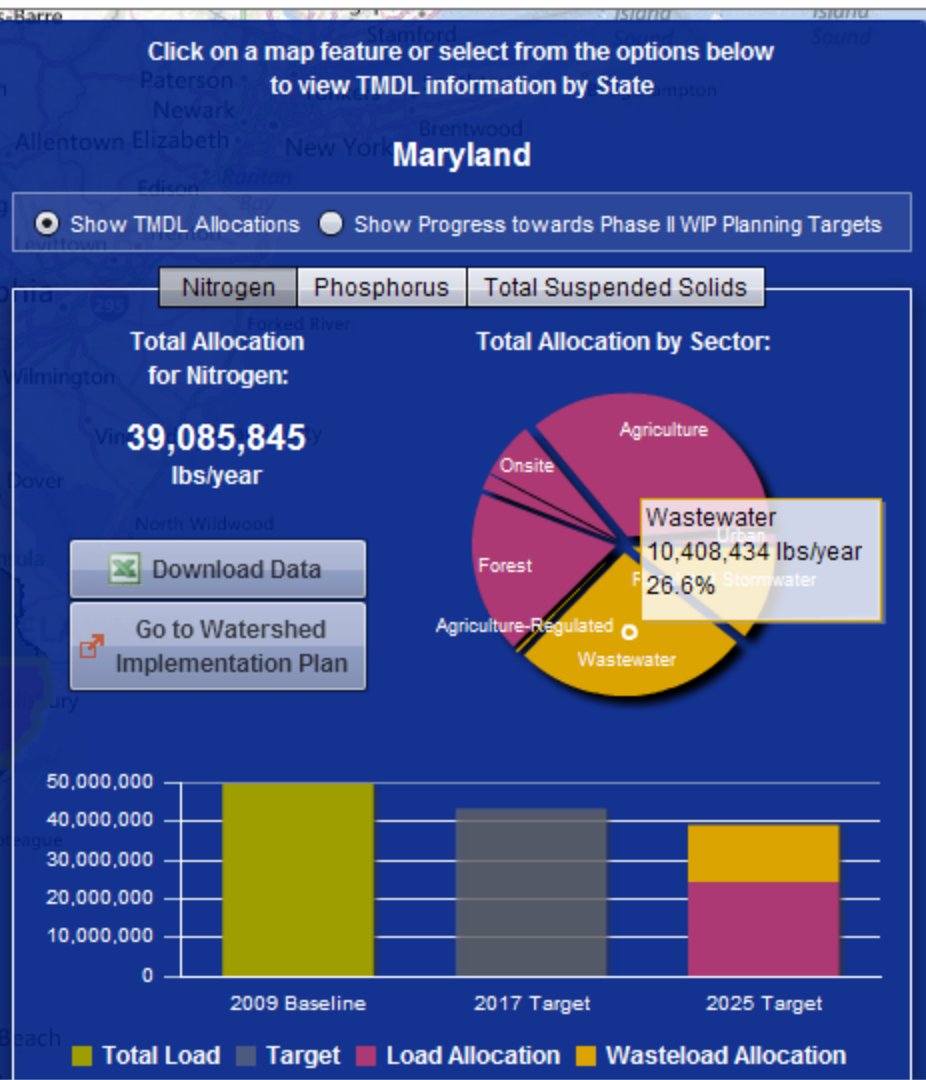
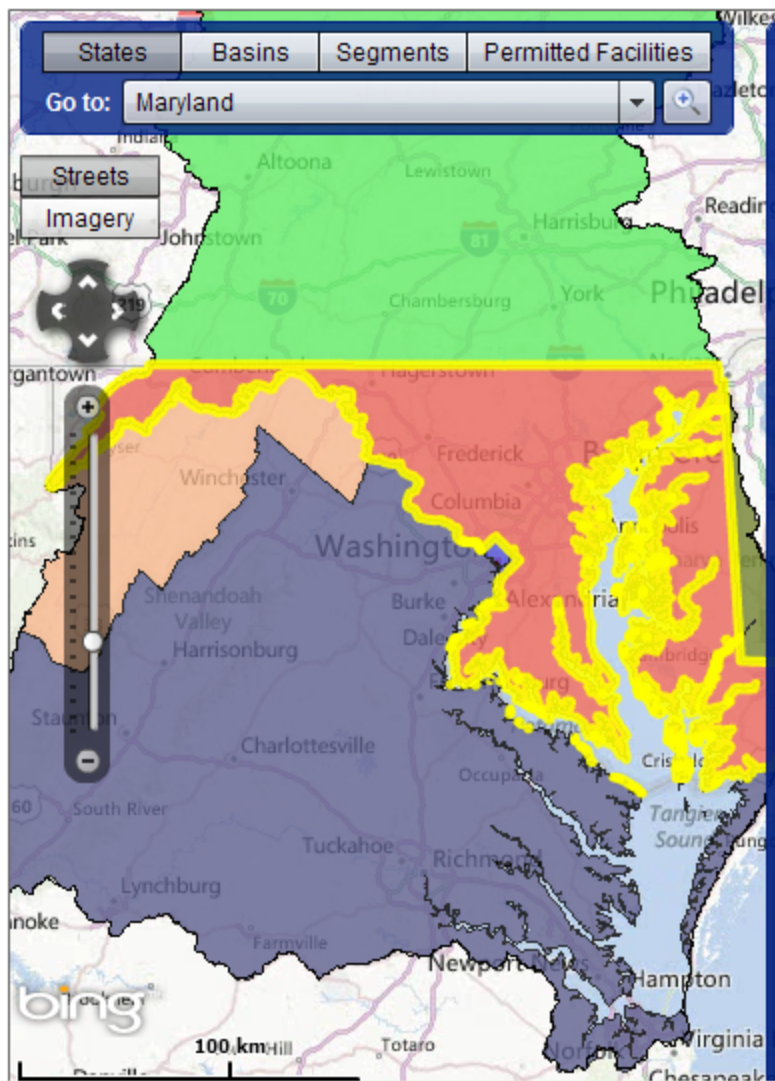
Total Allocation by Sector:

Sector	Allocation (lbs/year)	Percentage
Agriculture	~100,000,000	~50%
Onsite	~20,000,000	~10%
Wastewater	38,676,923	20.8%
Reg	~10,000,000	~5%
Stormwater	~10,000,000	~5%
Forest	~10,000,000	~5%

Year	Total Load	Target	Load Allocation	Wasteload Allocation
2009 Baseline	~240,000,000	~200,000,000	~100,000,000	~140,000,000
2017 Target	~200,000,000	~200,000,000	~100,000,000	~100,000,000
2025 Target	~180,000,000	~180,000,000	~130,000,000	~50,000,000

■ Total Load 
 ■ Target 
 ■ Load Allocation 
 ■ Wasteload Allocation

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.



# 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%

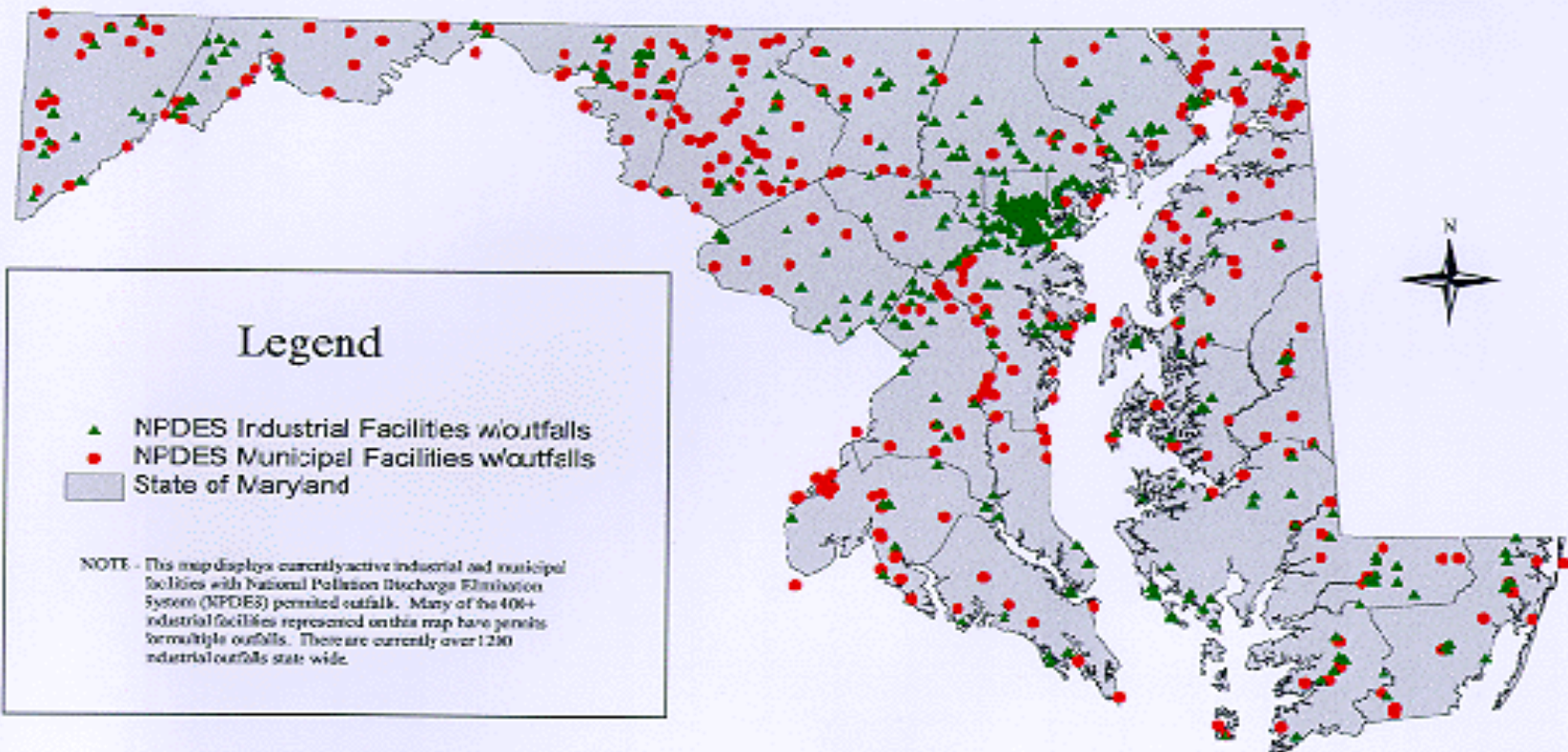


In areas where land is available, spray irrigation using treated wastewater is used to grow crops and recharge the groundwater table



# Municipal and industrial point sources in Maryland

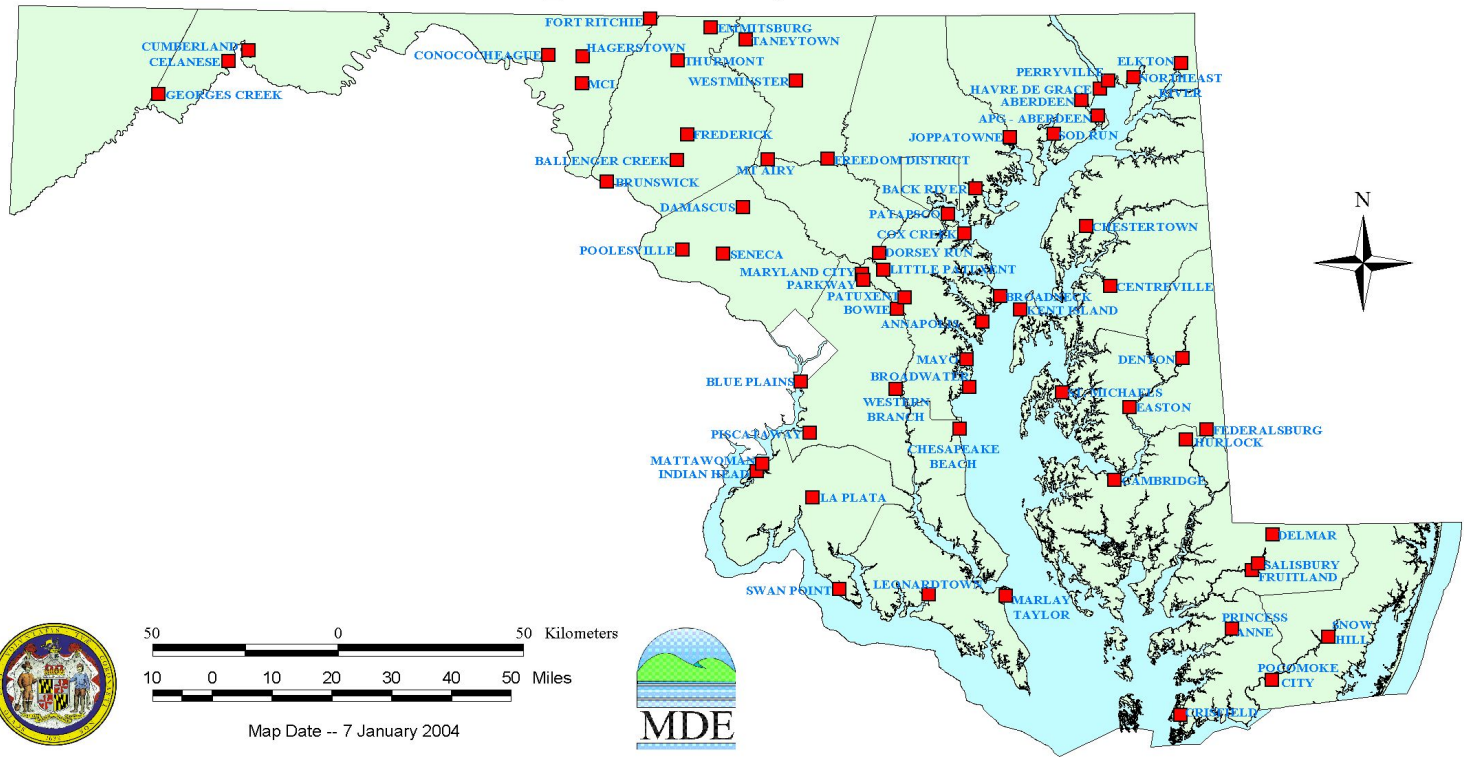
## Facilities with Active NPDES Permitted Outfalls





# Biological Nutrient Removal and Enhanced Nutrient Removal

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

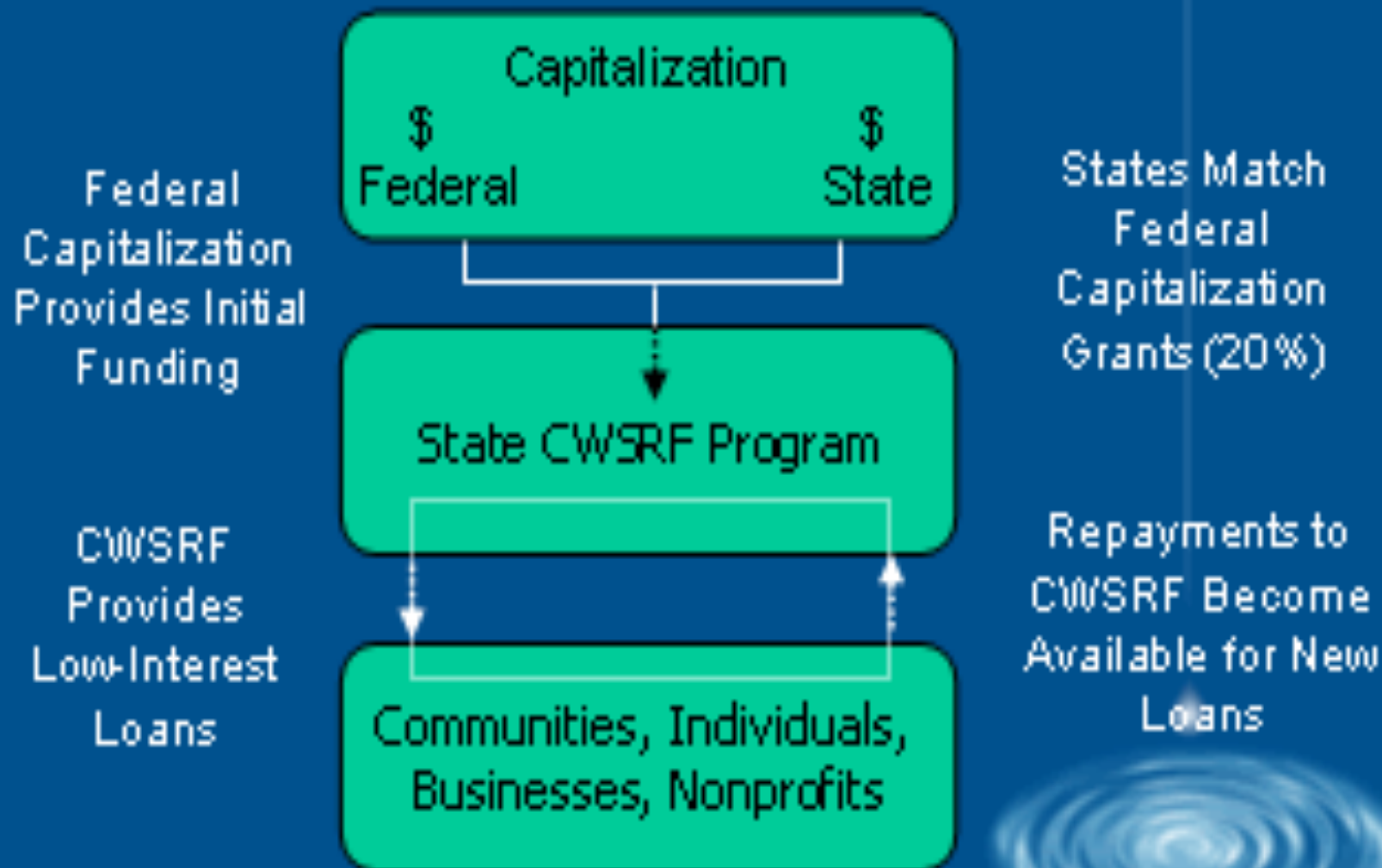


# Implementation of basic pollution control measures

- 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



# 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