Maryland
Department of
the Environment

Enhancing NPS Pollution Reductions: Three Initiatives in Maryland

Chesapeake Bay Watershed Map

41 Million acres

Sectors include:
Agriculture, urban WW, SW from developed land and natural, i.e., forest, land uses and air shed

2019 State Watershed Implementation Plans detail how to achieve nutrient reductions (more here)

Chesapeake Bay

Chesapeake Bay Context

- 2010 Chesapeake Total Maximum Daily Load (TMDL) to restore impaired waters (more here)
  - NPS Reductions: nitrogen 25%, phosphorus by 24%, and sediment 20%
  - Reduce by state, by sector (ag, developed, forest), by 2025
- Progress measured by monitoring, milestones, pollution controls – "BMPs"
- 2014 Bay Agreement with 29 Outcomes (more here) is complimentary but broader than Bay TMDL
- Forest buffers is one outcome but lagging to meet goal

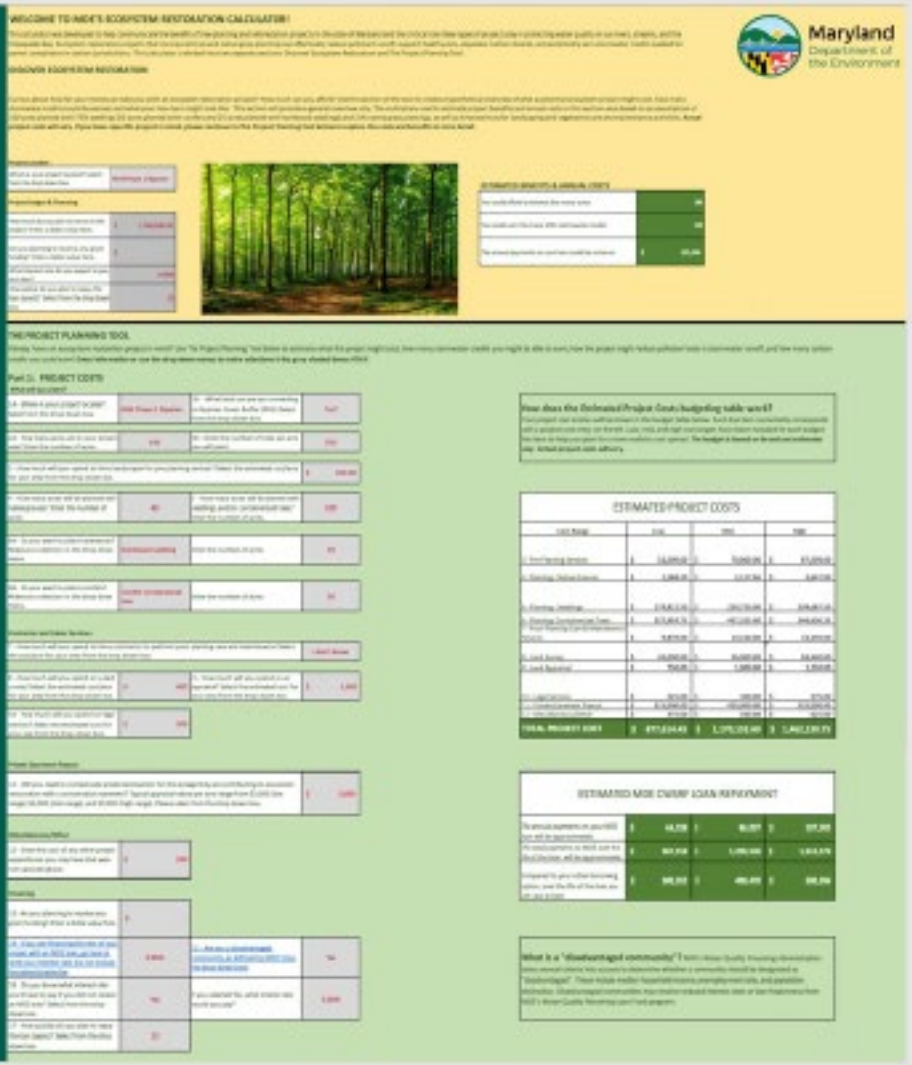
Initiative #1

How can CW SRF Support NPS Reductions?

- Challenge: Add Riparian Forest Buffer (RFB) to MDE ranking system as eligible to encourage NPS project applications (more here)
- Challenge: Show users the advantage they will gain with CW SRF forestry funding: Build a calculator
  - Get more money now upfront and get environmental benefit sooner, at advantageous rate
  - Taking a loan and doing work now, will be cheaper over the long run rather than waiting later and taking different financing options.
- Challenge: Develop Beneficial Partnerships – Outreach to SRF applicants

The Calculator - MD FFIT

THE MARYLAND FOREST FINANCING IMPLEMENTATION TOOL



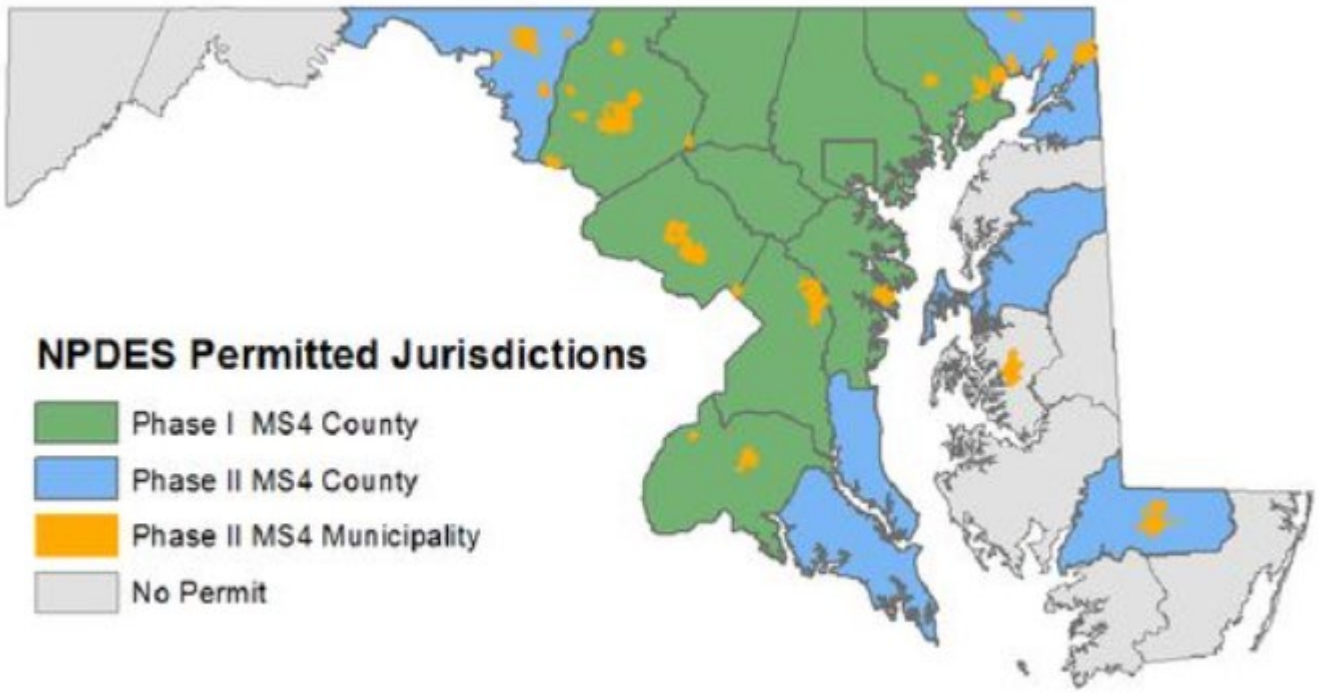
MD FFIT

Different implementation scenarios, e.g., how much a forestry project would cost, estimate how many MS4 credits and environmental co-benefits can be achieved.

Links to tool, video with slides and user guide:

- 2021 Version 1.0 here and
- 2022 Version 2.0 here

Partners & Drivers: Municipal Separate Storm Sewer System (MS4) Permits



Stormwater Restoration Requirements

Retrofit untreated acres or obtain equivalent impervious acre (EIA) credit

- Phase I (more here) + Phase II (more here)
- Restore >20,000 impervious acres; with annual budgets > $300M/year

A driver toward Bay Restoration

MD FFIT

- Why is it helpful?
  - Planning tool that can calculate reductions and efficiencies for TN, TP, & TSS based on user-defined inputs
  - Helps an implementer calculate costs of working with partners like NGOs, decide which elements of a project to retain versus outsource, and estimate how competitive a loan or grant proposal might be
  - Cost Efficiency section of the Tool provides usable info
    - Cost per Acre
    - Annualized cost per pound of pollutant reduced (TN TP, and TSS)
    - Equivalent Impervious Acre (EIA) Cost per acre, and
    - EIA Cost per MS4 Credit

Funding – CWSRF Costs Savings

- Fixed budget not to exceed $1M. What are financing options?
  - Conventional loan at 2% interest
    - Only $820,000 available for project
    - $820,000 × 2% × 20 years compounded annually = $180,000 in interest
  - CWSRF funding at 0%
    - Entire $1M would be available for the project
    - Equivalent to receiving a $180,000 grant or 18% savings
    - As market rates rise, SRF is an even better bargain

Table 3-1. Market rates and grant equivalence in CWSRF*

Market Rate	SRF Rate 0.0%	1.0%	2.0%	3.0%	4.0%	5.0%
2.0%	18%	9%	-			
3.0%	26%	18%	9%	-		
4.0%	32%	25%	17%	9%	-	
5.0%	38%	31%	24%	16%	8%	-
6.0%	43%	36%	30%	23%	16%	8%
7.0%	47%	41%	35%	29%	22%	15%

Source: CWSRF NPS Guidance, page 15

Better Visibility into Standard Pollution Control Practice Costs

Practice	Estimated Total Costs	Estimated Annual Cost Efficiencies				Lifespan (yr)
	$	$/TN/yr	$/TP/yr	$/TSS/yr	$/EIA/yr	
Riparian Buffer	$1,677,767	$28	$160	$0.09	$267	30
Forest Planting	$2,164,860	$36	$225	$0.14	$364	30
Wet Pond	$17,013,585	$284	$951	$0.24	$1,514	30
RR BMP Mix	$17,463,466	$436	$2,816	$0.89	$6,963	20

Estimated Costs Needed to Meet 2,000 lbs TN Reduction

Standard Pollution Control Practices

Wet ponds/Runoff Reduction BMP mix

- 10 times higher cost than RFB
- 8 times higher cost than forest planting

(More info here on MD FFIT Webinar Version 2.0 in 2022)

Growing Partnerships

- Close connection with MD Dept of Natural Resources - State Forester, Planting Plans, Fieldwork, state funding and programs (DNR)
- Positive connection with Alliance for the Chesapeake Bay NGO is multi-state and organizes many volunteers (ACB)
- Assisting the regulated community: MS4 permittees by making compliance less costly
- Positive connection to Private Landowners
  - Stewards of the land who benefit from incentive payments
- Encouraging work with Private Restoration Businesses and National Foundations

Initiative #2
Expanded SRF Guarantee Authority

- 2021 legislation expanded Water Quality Revolving Loan Fund guarantee authority to:
  - guarantee, or purchase insurance for, bonds, notes, or other evidences of obligation issued by a local government, if such action would improve credit market access or reduce interest rates;
  - Provide loan guarantees for similar revolving funds established by municipalities or intermunicipal agencies; and
  - Serve as guarantee for long-term pay for success contracts, green bonds, or environmental impact bonds by any public, private, or nonprofit entity for the purchase of outcomes that provide a water quality benefit. (more here)

Guarantee Authority at Work

- Family Forest Impact Foundation applied for $2.5M in SRF guarantee to enroll eligible land into the Family Forest Carbon Program
  - Goal is to enroll over 500,000 acres across the Central Appalachian region.
  - Green bonds will be issued each year beginning with $10 million and $8 million annually until 2027 (more here)
  - To provide incentives for the 135 participating landowners across 5 counties in MD, and allocate 25% of the bond proceeds to MD
  - Goal is 17,813 acres of streamside canopy management acres enrolled in MD
  - 81 tons/year reduction in Total Nitrogen projected as a result of the project

Initiative #3
Maryland Conservation Finance Act of 2022

- Modifies existing environmental conservation and natural resources management programs.

- Expands opportunities to obtain private investment and financing
  - including conservation efforts, restoration projects, and the installation and repair of green and blue infrastructure.

- Defines blue and green infrastructure for the first time in State law
  - Blue Infrastructure – includes oyster reefs, mussels, aquatic vegetation, and shorelines
  - Green Infrastructure – includes stormwater projects, tree plantings, and pocket parks

- Establishes a framework for "pay for success contracting;" authority is provided agencies to enter into pay-for-success contracts that promote "ecosystem services"

Maryland Conservation Finance Act of 2022 (cont'd)

- Defines source watersheds as capital assets and blue and green infrastructure as eligible for same forms of assistance as traditional water and sewer infrastructure
- Defines environmental outcomes for foundation of trading markets
- Promote/encourage participation in carbon crediting, GHG markets, and soil carbon programs
- Establishes 2022 Green and Blue Infrastructure Policy Advisory Commission and also Task Force on State and Local Government Accounting for Natural Capital

Read the law here + Conservation Finance Act bills: **SB0348/HB0653**

Read a detailed summary here provided by the non-governmental organization Environmental Policy Innovation Center (EPIC)

Questions? Feedback Welcome

Contact MDE's SRF Program

Water Infrastructure Financing Administration (WIFA) at (410) 537-3119 or by email jeffrey.fretwell@maryland.gov

OR

MDE's Watershed Restoration Protection, Restoration & Planning Program at (410) 537-3689 or by email paul.emmart@maryland.gov