NEWEA
WORKING FOR WATER QUALITY

The Future of Stormwater in New England:

Strategies to Solve Our Nutrient Dilemma

The Future of Stormwater in New England:

Strategies to Solve Our Nutrient Dilemma

Regional Perspectives and Case Studies on Watershed Management "Districts" in New England

Vermont's Clean Water Service Delivery Act of 2019

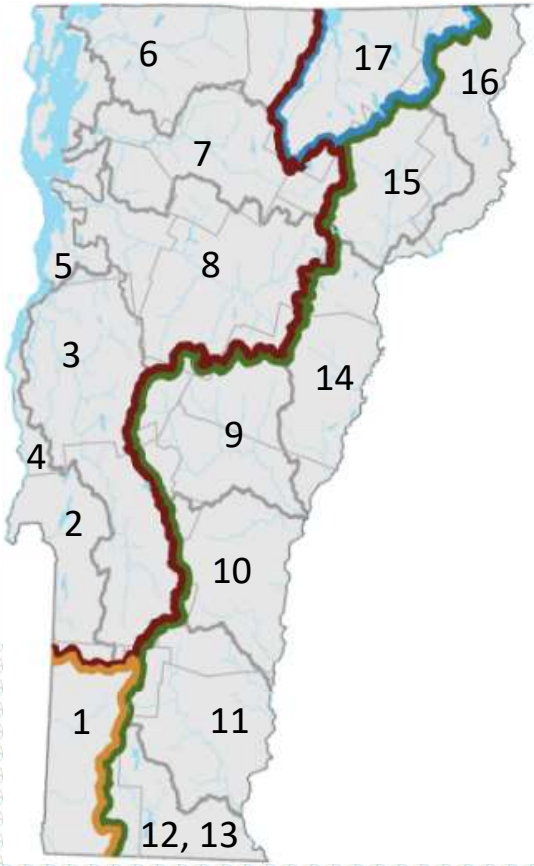
Ethan Swift, Watershed Planning Program, Vermont Department of Environmental Conservation, Agency of Natural Resources

Vermont's Watershed Management Plans

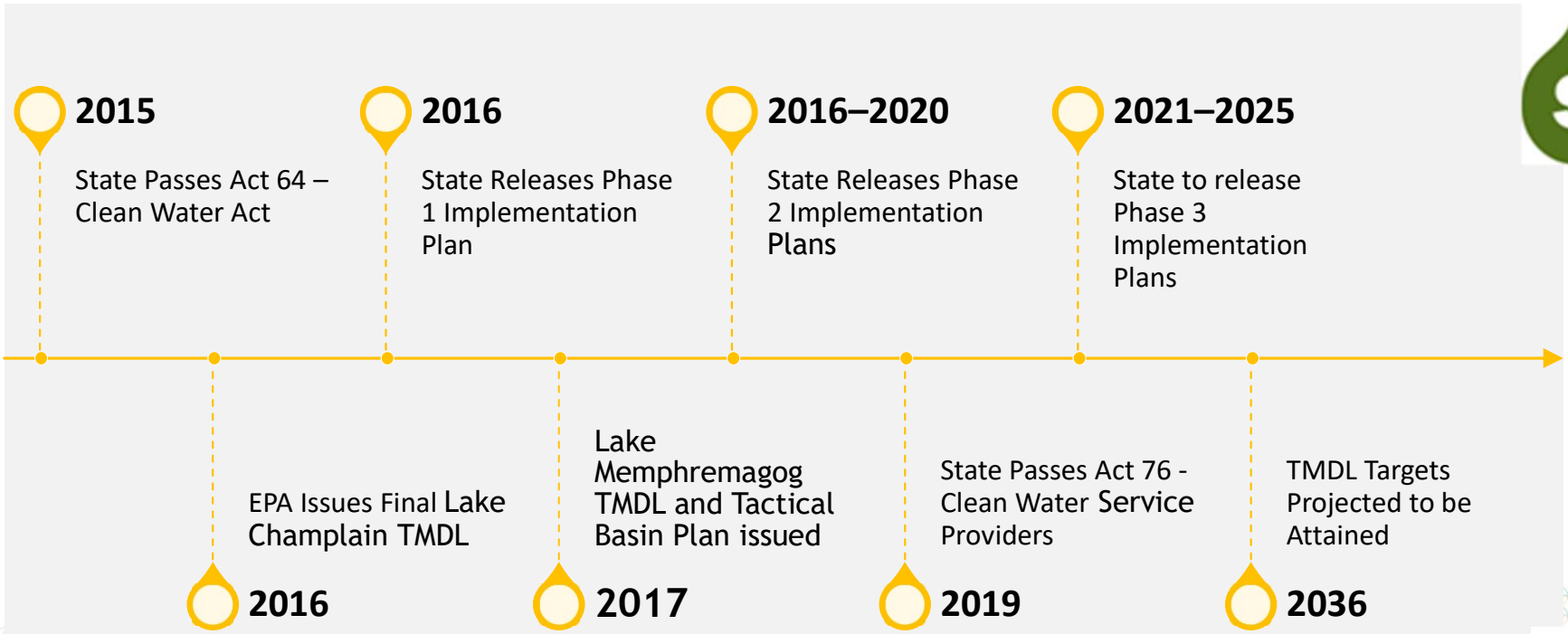
- "Tactical Basin Plans" for each major river basin (15)
- 15 basins across Vermont – 5 Year Planning cycle – 5 Watershed Planners
- Monitoring and Assessment identifies Water Quality issues
- Tactical planning process engages key partners in developing strategies to address WQ issues by sector

Background – TMDL restoration plans

- Lake Champlain Phosphorus TMDL
  - Basins 2, 3, 4, 5, 6, 7, 8
- Lake Memphremagog Phosphorus TMDL (Basin 17)
- Long Island Sound Nitrogen TMDL
  - Basins 9, 10, 11, 12, 13, 14, 15, 16
- Other TMDLs (phosphorus, bacteria, thermal, etc)



Champlain TMDL Implementation Plan Phases



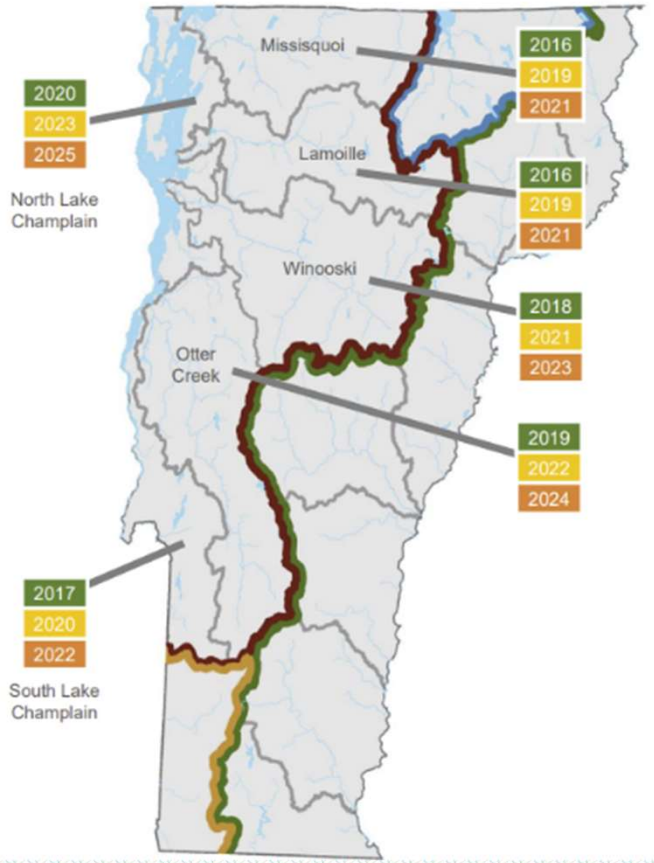
Lake Champlain P-TMDL Implementation Plan

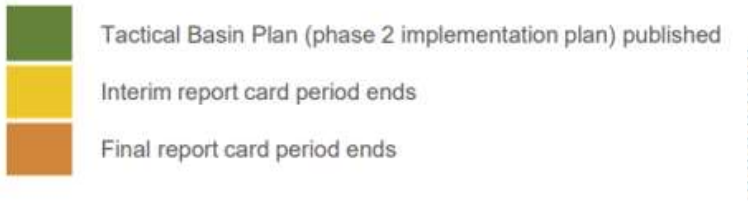
- Established VT's commitments to achieve phosphorus reductions
- Timeline to achieve goals via the Accountability Framework
- Policy commitments for farming, developed lands, wastewater facilities, forests, wetlands, rivers, and lakes.
- Technical assistance, funding and financial incentives




Lake Champlain P-TMDL Implementation Plan

- Tactical Basin Plans (TBP) serve as TMDL implementation vehicle
- Geographically targeted strategies in the TBP Implementation Table
- TBP Interim & Final Report Cards to track progress of actions
- 5-year planning cycle





Clean Water Service Delivery Act of 2019

- Long term clean water funding source, updated priorities
- Four new grant programs, including Water Quality Restoration Formula Grants awarded to Clean Water Service Providers (CWSPs)
  - Formula Grant based on non-regulatory phosphorus reduction target and cost/unit phosphorus reduction
  - Assurances to meet non-regulatory targets
  - Assurances of project operation and maintenance
  - Interim targets, enhanced accounting
  - Initially targets phosphorus pollution in Lake Champlain and Lake Memphremagog basins, effective July 1, 2022 (State Fiscal Year 2023)

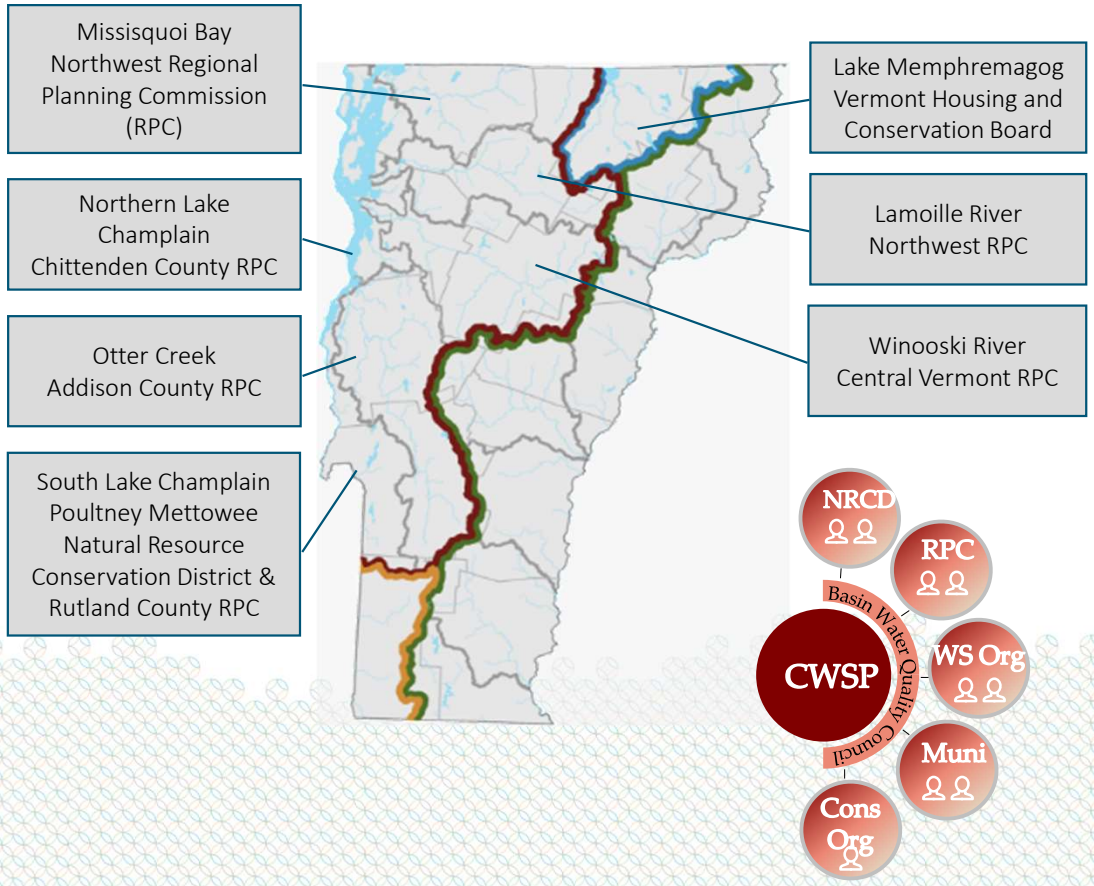
Clean Water Service Delivery Act of 2019

Clean Water Service Providers (CWSP)

- Receive/administer Formula Grants; report progress
- With Basin Water Quality Councils, identify, develop, construct, verify, inspect, operate, maintain clean water projects

Basin Water Quality Councils (BWQC)

- Provide local water quality knowledge
- Advise CWSPs on funding decisions; prioritize projects
- Participate in Tactical Basin Planning process



Clean Water Service Providers (CWSPs) Basin Water Quality Councils (BWQCs)

- Act 76 was established to provide a **decentralized network of CWSPs** to implement **non-regulatory projects** in order to meet the Reasonable Assurances with TMDL implementation efforts
- Act 76 requires that BWQCs:
  - establish policy, and
  - make decisions for the CWSP regarding the most significant water quality impairments that exist in the basin and prioritizing the projects that will address those impairments based on the basin plan
- CWSP shall be required to identify, prioritize, develop, construct, verify, inspect, operate, and maintain clean water projects
- CWSP prioritizes and selects projects consistent with the applicable basin plan, where the project is located, the pollution reduction value associated with the clean water project, co-benefits provided by the project, operation, and maintenance of the project, conformance with the tactical basin plan, and other water quality benefits beyond pollution reduction associated with that clean water project
- Clean Water projects have to be identified in the state's Watershed Projects Database
- BWQCs shall participate in the basin planning process

Clean Water Service Delivery Act of 2019

- Development and Adoption of the Clean Water Service Provider Rule (August 12th, 2021)
- Development of CWSD Act Guidance, including topics on governance, financial management, the formation and role of the BWQC, and for project prioritization and selection
- Development of clean water project cost calculators and pollution reduction calculators
- Other natural resource assessment tools and analyses
  - e.g., the Functioning Floodplains Tool and the Forestlands Spatial Analysis (still in development)
- Development of the Act 76 Website

NEWEA
WORKING FOR WATER QUALITY

Clean Water Fund for SFY2024

$25.7 MILLION + **$4.9 MILLION** + **$10 MILLION** + **$10 MILLION** = **$50.6 MILLION**

Estimated SFY 2024 Clean Water Fund revenue from Meals and Rooms Tax, Property Transfer Tax Surcharge, and Unclaimed Bottle Deposits.

"One-time" funds from prior year Clean Water Fund surplus revenue proposed to be programmed in SFY 2024 Clean Water Budget.

Estimated SFY 2024 funds from the clean water section of the Capital Bill.

Final year of federal American Rescue Plan Act (ARPA) dollars appropriated to the Clean Water Budget.

Estimated State Fiscal Year 2024 Clean Water Budget.

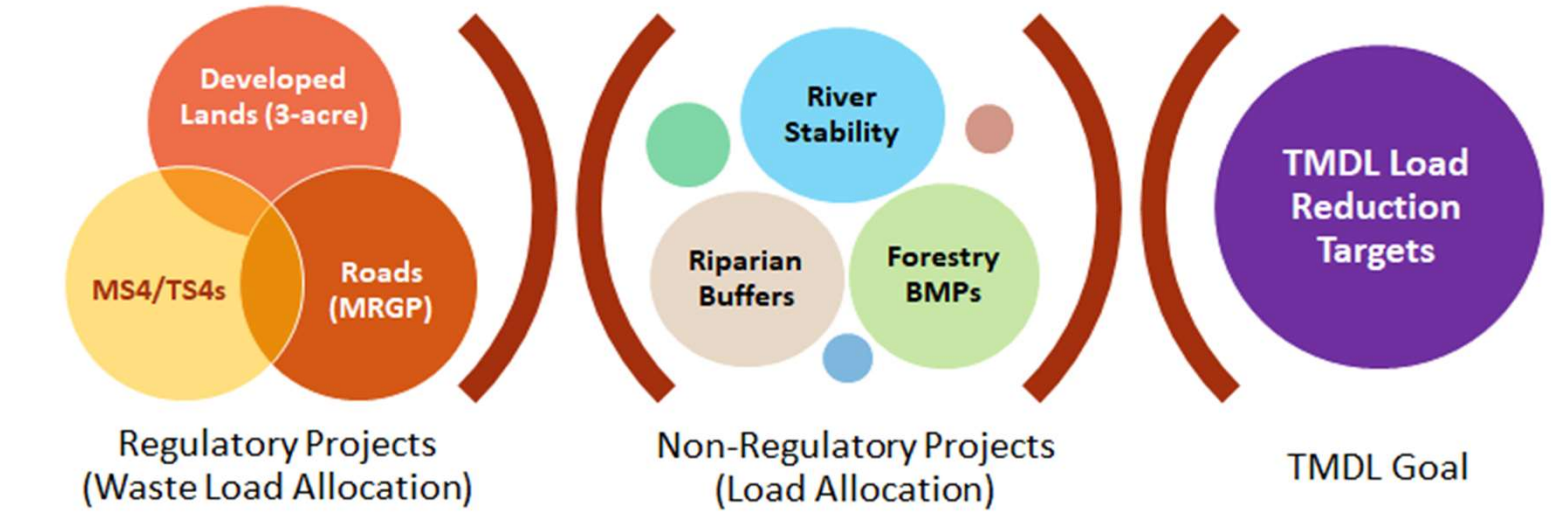
For more information, visit https://dec.vermont.gov/water-investment/cwi/board or email anr.cleanwatervt@vermont.gov.

VERMONT

AGENCY OF ADMINISTRATION
AGENCY OF AGRICULTURE, FOOD & MARKETS
AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
AGENCY OF NATURAL RESOURCES
AGENCY OF TRANSPORTATION

NEWEA
WORKING FOR WATER QUALITY

TMDL = WLA + LA + $$$ + Org. Capacity



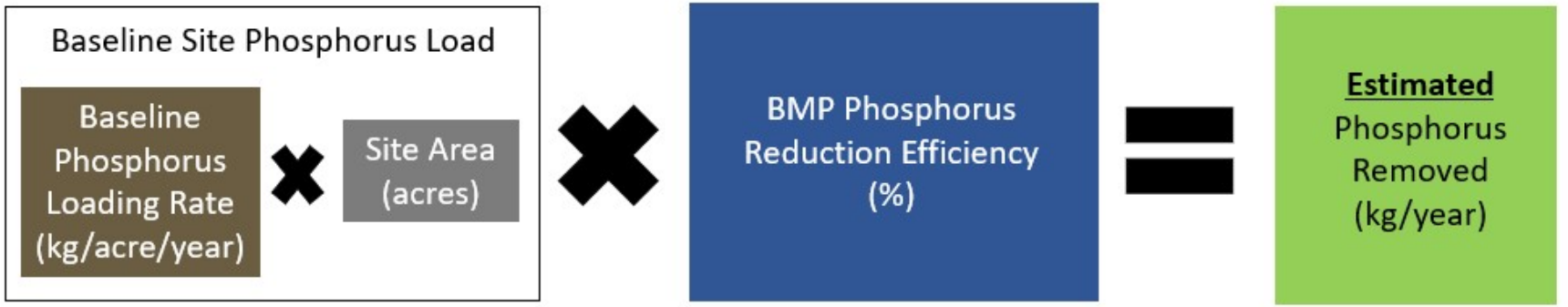
State, Federal, and other $$$

Clean Water Service Providers

Implementation

Clean Water Project Reporting Framework

- Eligible Clean Water Project Types
- Standardized Milestones and Deliverables
- Documented Performance Measures
- BMP Accounting Methodologies/ efficiencies
- CWRF Database for Reporting and Tracking



Clean Water Project Data Portal

- Clean Water Interactive Dashboard

- Clean Water Project Explorer

- Watershed Project Database Search

- Water Quality Project Screening Tool

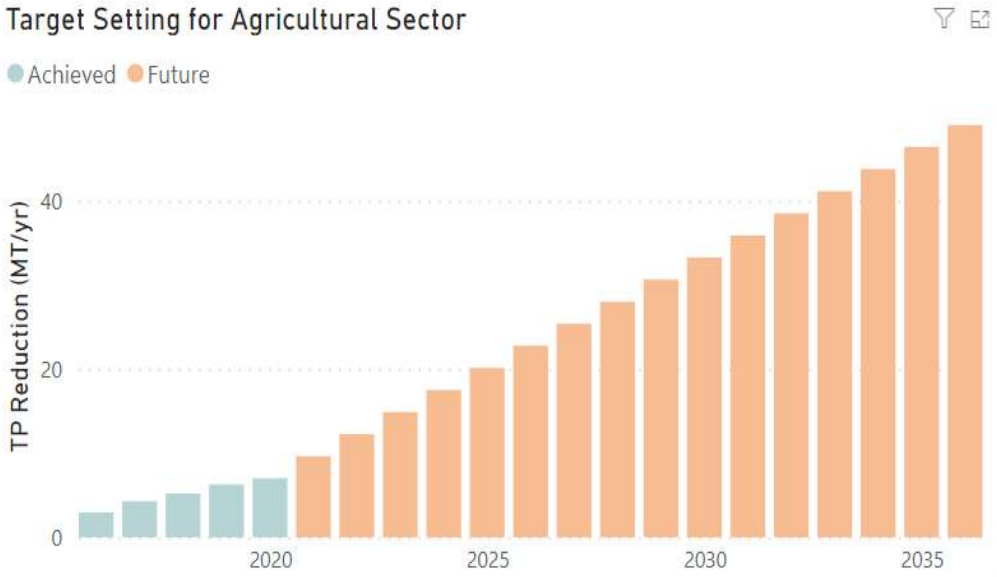
- Funding Opportunities Tool

- Stormwater Treatment Practice (STP) Calculator

https://anrweb.vt.gov/DEC/cleanWaterDashboard/

TMDL Tracking and Accounting

- What – TMDL sectors
  - Agriculture, Developed lands & roads, Forestry, WWTFs, Natural Resources
- Progress achieved since 2016 by sector
- Sector specific reduction requirements for the next 5 years
- Gap identification (i.e., targets)
- Project tracking and accounting meets accountability framework

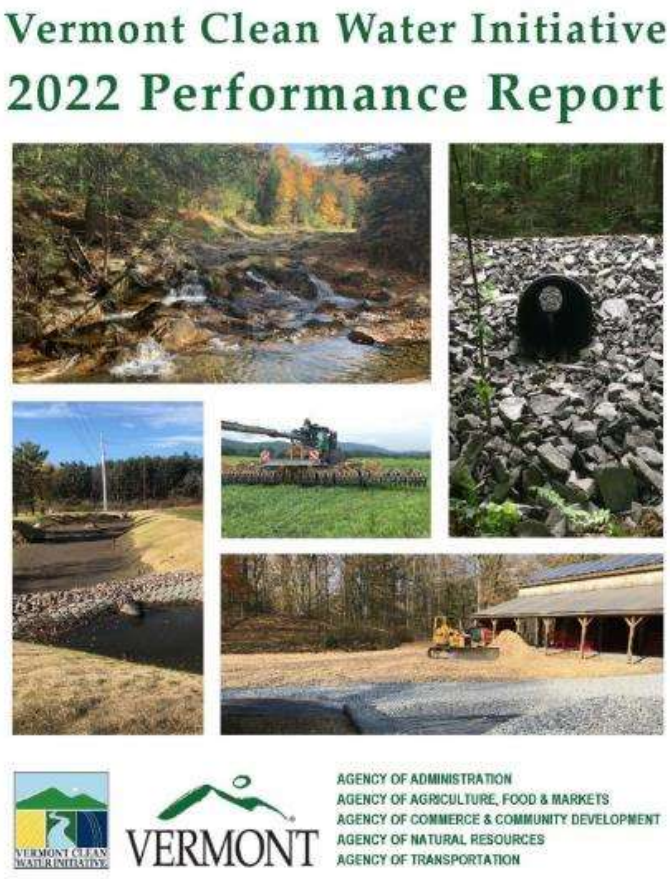


Final Cost Estimates - EPA's Clean Watersheds Needs Survey

Results of Clean Watershed Needs Survey (CWNS) NPS and GSI Cost Estimates for Data Entry

State-Specific Approach	Summary of Methodology	Scope	Estimated Total Need
Total Phosphorus Load Reduction Target-Based Costs Estimates	Estimates 20-year cost of implementing the Lake Champlain and Lake Memphremagog phosphorus total maximum daily loads (TMDLs) based on cost per unit of phosphorus reduced and phosphorus reduction targets	• Estimates costs associated with implementing the Developed Lands (except Municipal Roads General Permit), Forest, Streams, and Agricultural cropland/pasture sectors' target phosphorus load reductions in the TMDLs • Excludes estimated costs of implementing the Agricultural Production Area, Wastewater, and Combined Sewer Overflow sectors' target phosphorus load reductions in the TMDLs • Geographic coverage: Lake Champlain and Lake Memphremagog basins only	$1.28 billion over 20 years (not accounting for progress to date and existing funding sources)
Municipal Roads General Permit-Based Cost Estimates	Estimates the statewide cost of implementing the Municipal Roads General Permit based on road miles requiring upgrade based on current Road Erosion Inventories and cost of road work per mile	• Estimates costs associated with implementing the MRGP on hydrologically connected road segments for paved and gravel roads with open ditches and Class 4 roads only • Excludes estimated costs of implementing the MRGP standards on curbed paved roads with catch basins • Geographic coverage: statewide for road segments with complete road erosion inventory data	$133 million from 2023 through 2036 (not accounting for existing funding sources)

Clean Water Performance Report



The 2022 Vermont Clean Water Performance Report summarizes efforts of state government, along with federal and local partners, to improve water quality across Vermont.

Clean water projects are regulatory or non-regulatory practices or protections that target water pollution, including excess nutrients and sediment, across land use sectors.

Clean water projects can provide many co-benefits for the environment and local communities, such as increasing flood resilience, improving habitat function and biodiversity, supporting carbon sequestration, improving soil health, supporting workforce development, and providing local economic stimulus.

https://dec.vermont.gov/sites/dec/files/WID/CWIP/Vermont%20Clean%20Water%20Initiative%202022%20Performance%20Report.pdf

Clean Water Performance Report

- The 2022 Vermont Clean Water Performance Report summarizes efforts of state government, along with federal and local partners, to improve water quality across Vermont.
- Clean water projects are regulatory or non-regulatory practices or protections that target water pollution, including excess nutrients and sediment, across land use sectors.
- Clean water projects can provide many co-benefits for the environment and local communities, such as increasing flood resilience, improving habitat function and biodiversity, supporting carbon sequestration, improving soil health, supporting workforce development, and providing local economic stimulus.
- https://dec.vermont.gov/watershed/lakes-ponds/monitor/lake-champlain

Contact

Ethan Swift, M.S. | Program Manager (he/him)
Vermont Department of Environmental Conservation
Water Investment Division, Watershed Planning Program

1 National Life Drive, Davis 3
Montpelier, VT 05620-3522
802-490-6141/ Ethan.Swift@vermont.gov

https://dec.vermont.gov/water-investment/watershed-planning

VERMONT
WATER INVESTMENT DIVISION

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

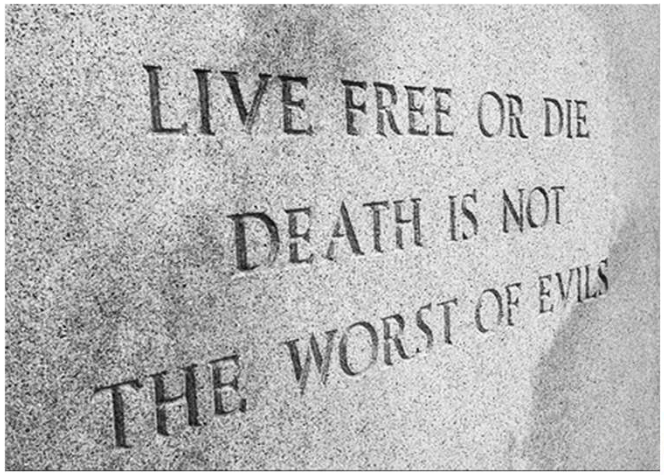
Municipal Alliance for Adaptive Management (MAAM)
Great Bay New Hampshire

Gretchen Young, PE

Dover, NH

NEWEA
WORKING FOR WATER QUALITY

Working together in New Hampshire



Find an evil worse then death???

Foster's Daily Democrat

LOCAL

Seacoast cities, towns partner to meet EPA's Great Bay water quality improvement

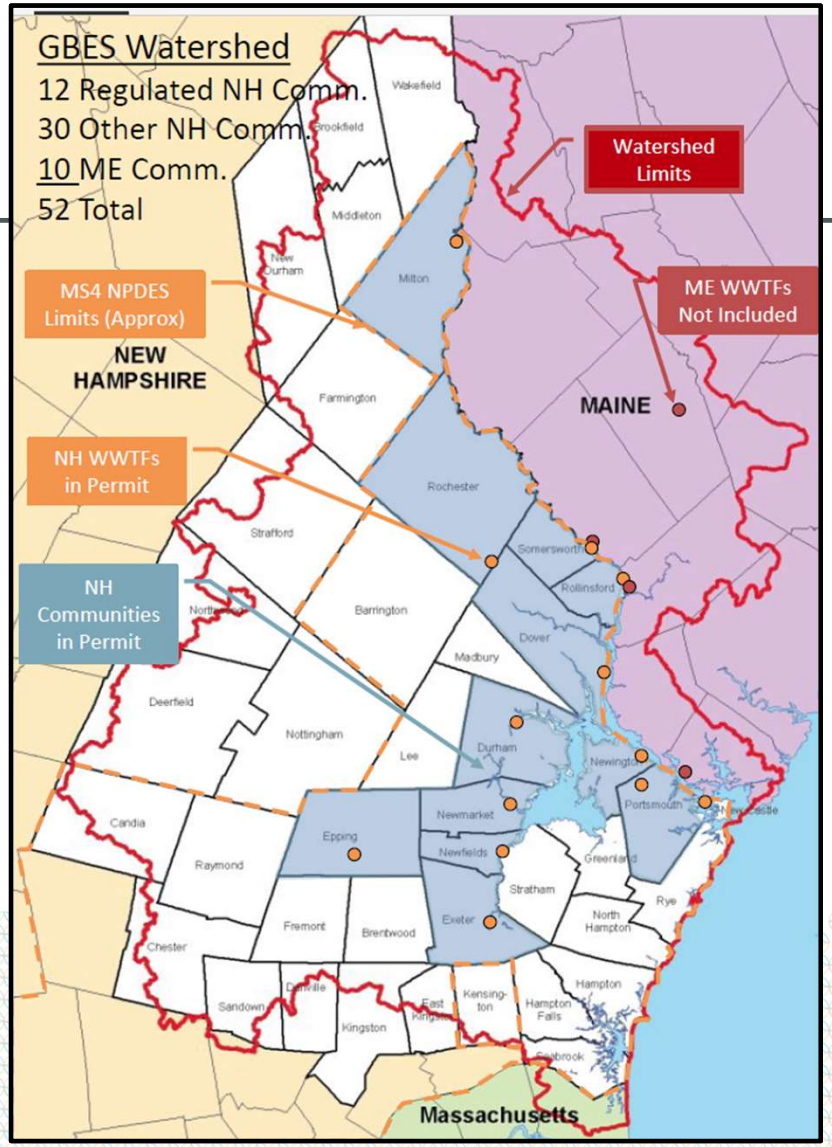
Megan Fernandes
Fosters Daily Democrat

Published 5:00 a.m. ET May 5, 2021

NEWEA
WORKING FOR WATER QUALITY

Find a worthy cause…

NEWEA
WORKING FOR WATER QUALITY



EPA Total Nitrogen General Permit timeline

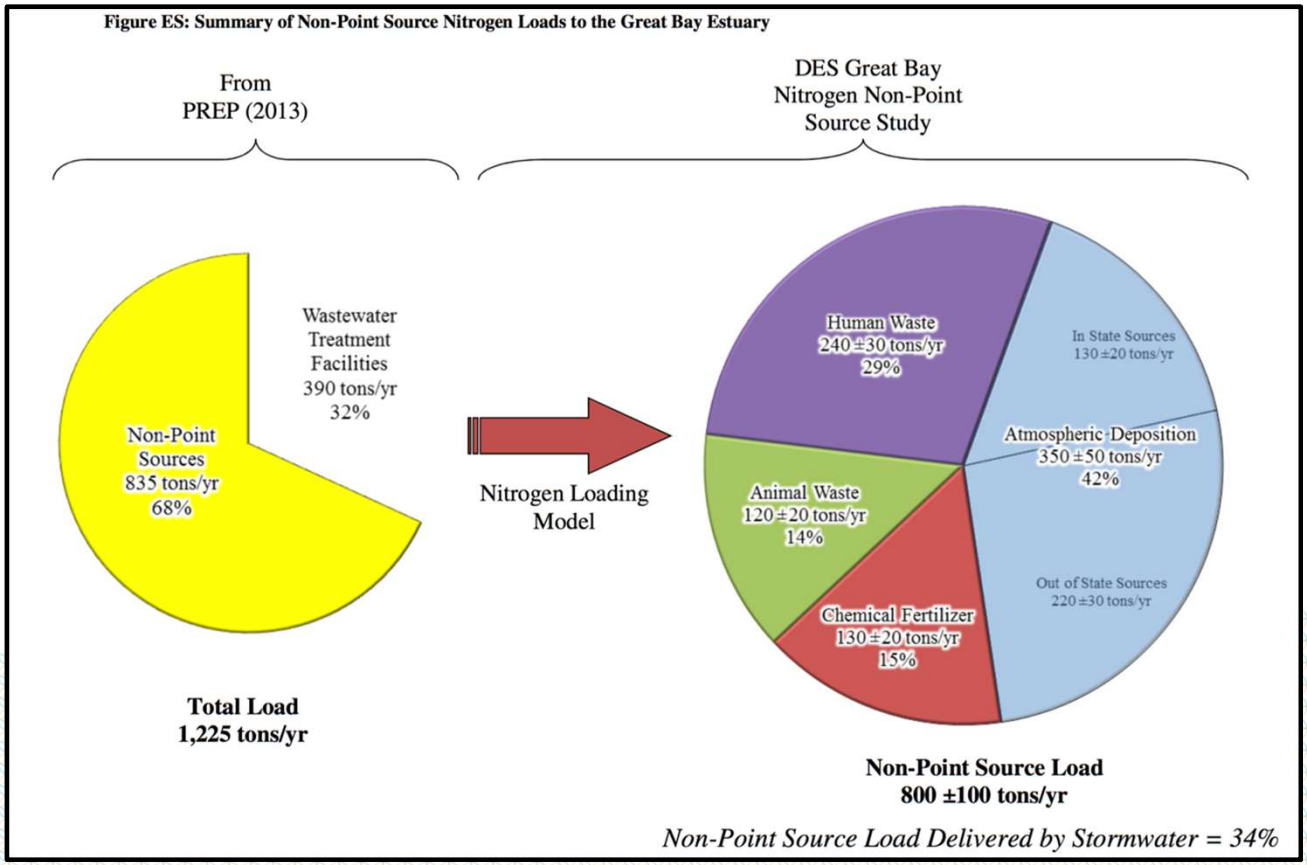
2006
- Last WWTP Discharge Permit – no Nitrogen Requirement

2012
- EPA releases draft of new permit with Nitrogen Limits

2015
- Communities coalesce to negotiate with EPA

2021
- Nitrogen General Permit with adaptive management

NEWEA
WORKING FOR WATER QUALITY

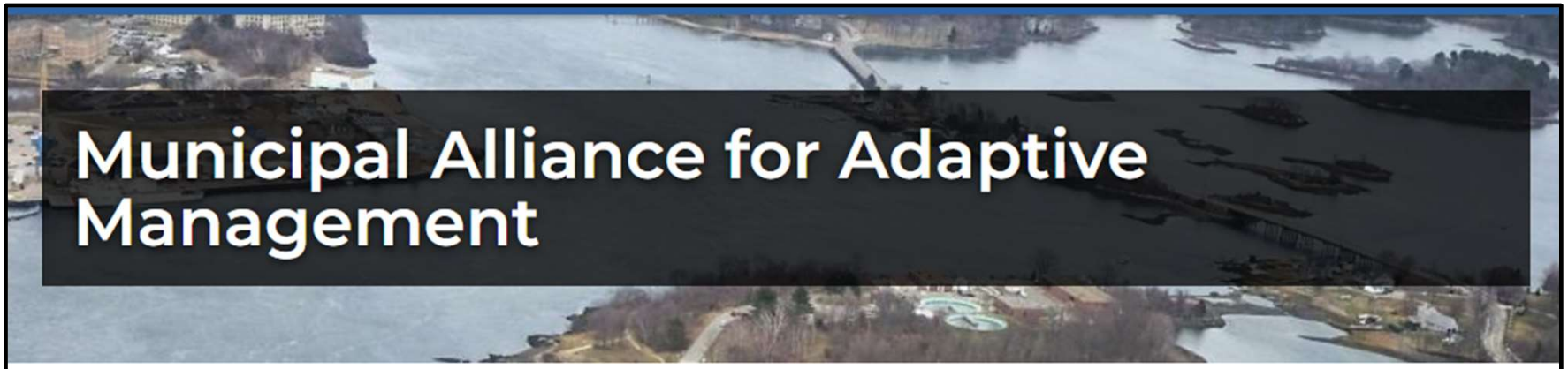


NEWEA
WORKING FOR WATER QUALITY

Adaptive management is an approach to natural resource management that emphasizes learning through management where knowledge is incomplete, and when, despite inherent uncertainty, managers and policymakers must act.

(Allen, C. and A. Garmestani. Adaptive Management. Chapter 1, Craig R. Allen, Ahjond Garmestani (ed.), Adaptive Management of Social-Ecological Systems. Springer Netherlands, Dordrecht, Netherlands, , 01-10, (2015)

NEWEA
WORKING FOR WATER QUALITY



Municipal Alliance for Adaptive Management

The Municipal Alliance for Adaptive Management was formed in response to the Environmental Protection Agency's issuance of the Great Bay Total Nitrogen Permit in November 2020. The purpose of the Municipal Alliance for Adaptive Management is to implement an adaptive management framework to provide greater long-term flexibility for meeting regulatory compliance and a more collaborative framework for protecting and promoting water quality throughout the Great Bay Estuary watershed. The partnering communities currently include Dover, Exeter, Milton, Newington, Portsmouth and Rochester.

Intermunicipal Agreement

INTERMUNICIPAL AGREEMENT - COST ALLOCATION SHARE RANGES (Comparison)

FACILITY NAME	DESIGN FLOW	SHARE	Annual Cost Ranges $ 100,000.00	$ 250,000.00	$ 500,000.00
Large (> 2 MGD)					
Rochester	5.03	18.65%	$ 18,652.43	$ 46,631.07	$ 93,262.14
Portsmouth	6.13	22.73%	$ 22,731.49	$ 56,828.72	$ 113,657.43
Dover	4.70	17.43%	$ 17,428.71	$ 43,571.77	$ 87,143.55
Exeter	3.00	11.12%	$ 11,124.71	$ 27,811.77	$ 55,623.54
Durham	2.50	9.27%	$ 9,270.59	$ 23,176.47	$ 46,352.95
Somersworth	2.40	8.90%	$ 8,899.77	$ 22,249.42	$ 44,498.83
Subtotal	***23.76***	***88.11%***	***$ 88,107.69***	***$ 220,269.22***	***$ 440,538.44***
Small (<2 MGD)					
Pease ITP	1.20	4.45%	$ 4,449.88	$ 11,124.71	$ 22,249.42
Newmarket	0.85	3.15%	$ 3,152.00	$ 7,880.00	$ 15,760.00
Epping	0.50	1.85%	$ 1,854.12	$ 4,635.29	$ 9,270.59
Newington	0.29	1.08%	$ 1,075.39	$ 2,688.47	$ 5,376.94
Rollinsford	0.15	0.56%	$ 556.24	$ 1,390.59	$ 2,781.18
Newfields	0.12	0.43%	$ 433.86	$ 1,084.66	$ 2,169.32
Milton	0.10	0.37%	$ 370.82	$ 927.06	$ 1,854.12
Subtotal	***3.21***	***11.89%***	***$ 11,892.31***	***$ 29,730.78***	***$ 59,461.56***
TOTAL DESIGN FLOW	**26.97**	**100.00%**			

MAAM partners

UNIVERSITY OF NEW HAMPSHIRE STORMWATER CENTER

PREP™ Piscataqua Region Estuaries Partnership

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

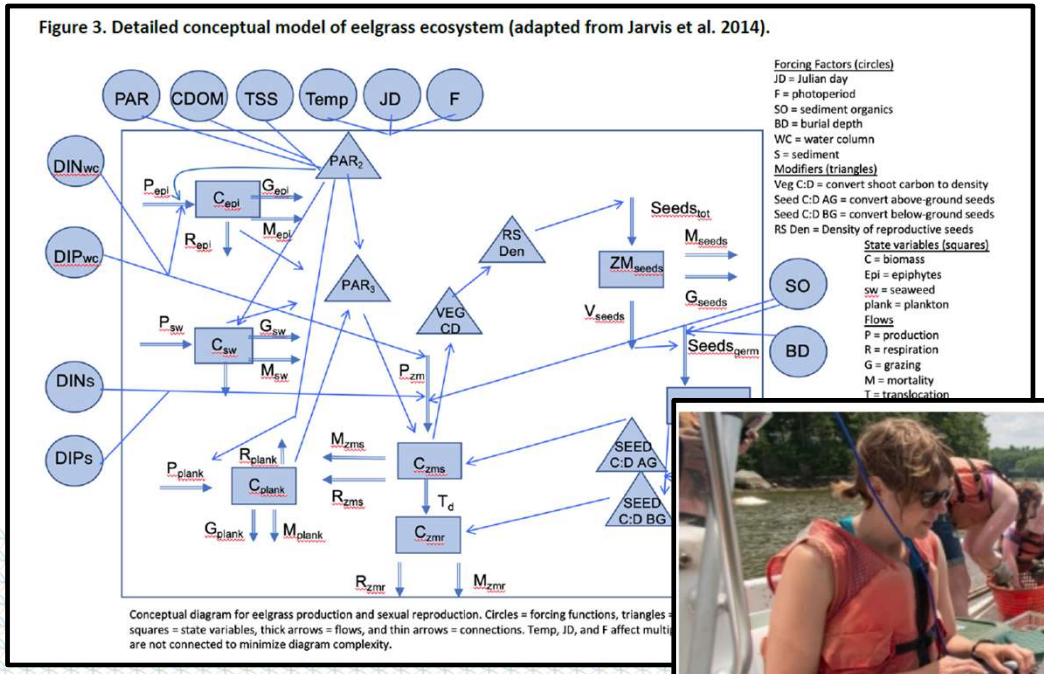
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

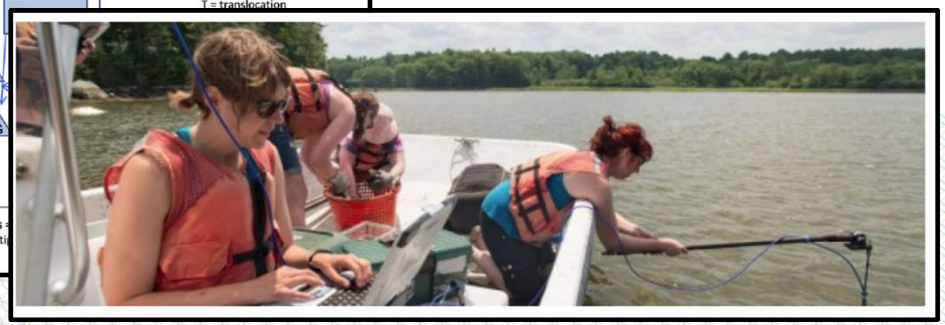
clf Conservation Law Foundation

NEWEA
WORKING FOR WATER QUALITY

MAAM Successes

Funded over $750,000 of research in the Great Bay





PREP
Piscataqua Region Estuaries Partnership

University of New Hampshire
School of Marine Science and Ocean Engineering

MAAM Successes

Funded and continued to develop a Pollutant Tracking and Accounting Program (PTAP)

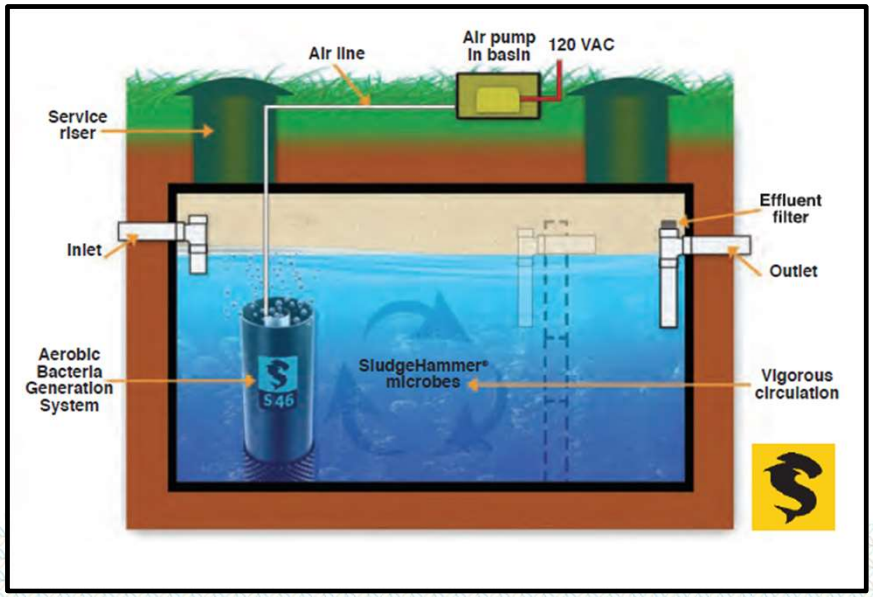
Dover Municipal Report

Land Use Conversion Table

Soils		Existing Conditions			Future Conditions			Report of Origin
Hydrologic Group	Acres	Land Use Type	Acres	Impervious and/or Paved Surfaces Acres	Land Use Type	Acres	Impervious and/or Paved Surfaces Acres	
C/D	5.77	Residential	5.77	0.06	Commercial/Institutional	5.77	1.06	Broadview Urgent Care Animal Hospital
A	0.45	Residential	0.45	0.17	Residential	0.45	0.25	Hanson Court Apartments
A	1.65	Residential	1.65	1.19	Residential	1.65	0.98	Roberts Road Reconstruction, Dover NH
A	2.04	Residential	2.04	0.76	Residential	2.04	0.75	Locust Street Inn & Locust Common
B	0.61	Residential	0.61	0.06	Residential	0.61	0.35	
C	0.47	Residential	0.47	0.00	Residential	0.47	0.22	

MAAM Successes

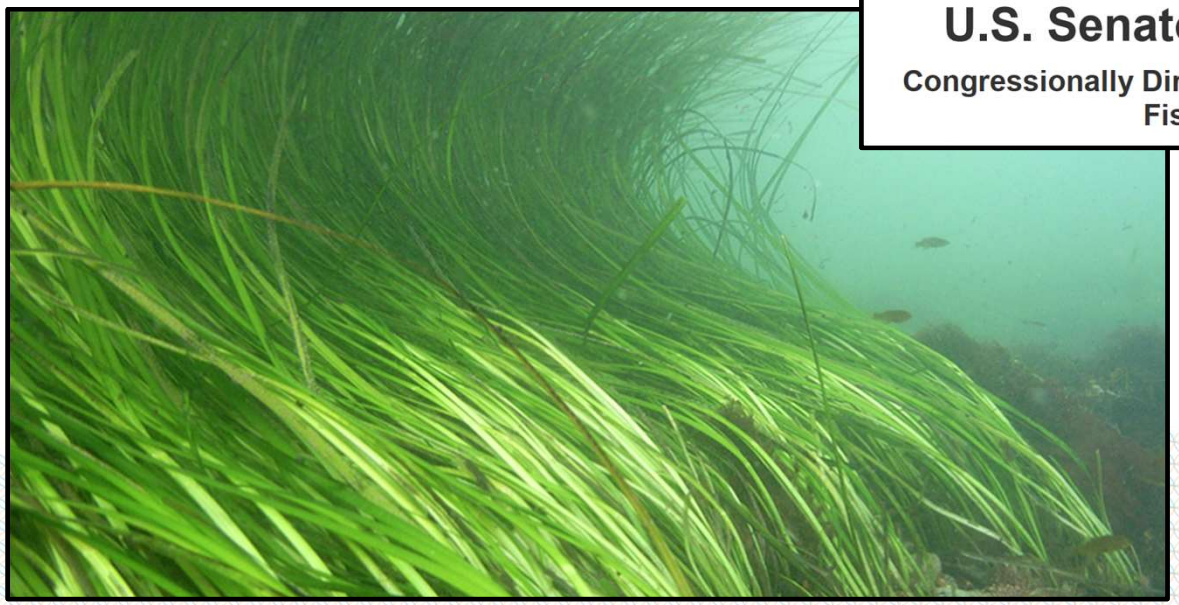
Funded a $45,000 Pilot Project for CLF



clf Conservation Law Foundation

MAAM Successes

Secured $1,000,000 in Congressionally Directed Spending for Eelgrass Restoration in the Great Bay



U.S. Senator Jeanne Shaheen

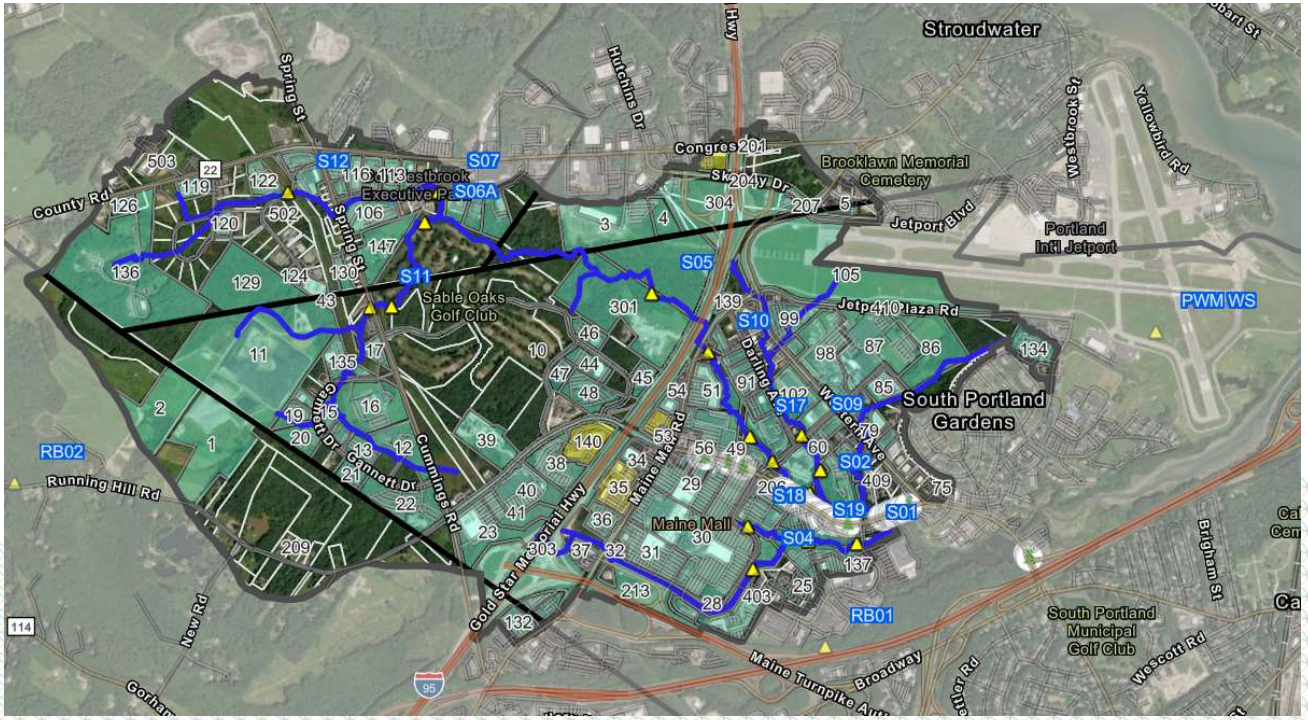
Congressionally Directed Spending Item Request Form
Fiscal Year (FY) 2022

Long Creek Watershed Management District

Portland, South Portland, Scarborough, and Westbrook, Maine

NEWEA
WORKING FOR WATER QUALITY

Long Creek Watershed



Who Does What?

FEDERAL: U.S. Environmental Protection Agency - oversight of "Clean Water Act" nationally

STATE: Maine DEP - implements Clean Water Act in Maine

MUNICIPAL: Portland, Scarborough, South Portland, Westbrook - subject to Clean Water Act Requirements

QUASI-MUNICIPAL: Long Creek Watershed Management District - implements Long Creek Watershed Management Plan

Why are permits required?

- **40 C.F.R. § 122.26(a)(9)(i)(D):**
- (9)(i) On and after October 1, 1994, for ***discharges composed entirely of storm water***, that are not required by paragraph (a)(1) of this section to obtain a permit, operators ***shall be required to obtain a NPDES permit only if***:
- (D) The Director, or in States with approved NPDES programs either the Director or ***the EPA Regional Administrator, determines that the discharge***, or category of discharges within a geographic area, ***contributes to a violation of a water quality standard or is a significant contributor of pollutants*** to waters of the United States.

Permitting Options

General Permit

- Participating Landowner Agreement with District
- District Implements Long Creek Watershed Management Plan on Behalf of Owner or Operator
- Owner or Operator has Some Responsibilities

Individual Permit

- Individual Landowner Submits full MEPDES Application to Maine DEP
- Owner or Operator Responsible for Implementing Permit Requirements

Long Creek General Permit

Interlocal Agreement, August 28, 2009

- ***Portland, Scarborough, South Portland, and Westbrook***
- Purpose . . . is to ***establish the Long Creek Watershed Management District as a quasi-municipal special purpose district*** . . . to . . . allow the Parties and other Participating Landowners to share in the costs and the benefits of implementation of the **Long Creek Watershed Management Plan**.
- Plan includes design, engineering, construction, installation, operation and maintenance, repair, replacement and monitoring of Best Management Practices in and along Long Creek and within the Long Creek Watershed.

Articles of Incorporation, January 14, 2010

- Long Creek Watershed Management District
- Maine Nonprofit Corporation
- Board of Directors — up to 16
- 14 appointed by municipalities
- 1 appointed by Maine Turnpike Authority
- 1 appointed by Maine DOT
- Implementation by Executive Director
- Not a regulatory agency
- No permitting authority
- No enforcement authority
- LCWMD is the mechanism to implement the Long Creek Watershed Management Plan

Participating Landowner Agreements

- Prescribes Long Creek Watershed Management District Responsibilities
- Prescribes Landowner Responsibilities
- $3,000 per acre of impervious cover annually to fund implementation of the Watershed Management Plan
- Annual revenue approximately $1.5 million
- Requires easements from landowners for projects identified in the plan
- Every Participating Landowner Agreement is the same to ensure and “even playing field”

Where Are We Now?

- Current permit cycle ended in June 2020; General Permit administratively continued
- No indication from U.S. EPA that “residual designation” will be rescinded
- Permit requirement will continue
- Long Creek Watershed Management Plan contemplated first 10 years of implementation
- BMPs need to be inspected and maintained
- Non-Structural BMPs will need to continue (pavement sweeping, catch basin cleaning, parcel inspections)
- Water quality monitoring will need to continue

Areas of Focus Going Forward

- New development and redevelopment in watershed
- Land use, state regulations, and municipal ordinances
- Chlorides (monitoring revealed magnitude of problem)
- Macroinvertebrate and fish habitat
- Annual weather patterns (e.g. micro-droughts; just long enough to kill fish and macroinvertebrates)