

# Vermont Clean Water Initiative 2022 Performance Report

## Executive Summary

Vermont’s lakes, rivers, wetlands, and reservoirs are important environmental and economic resources for residents and visitors. The State of Vermont funds clean water projects to reduce pollution entering waters from the landscape to protect and restore water quality. Excess sediment and nutrients (such as phosphorus) entering waterways can lead to harmful algal blooms and nuisance aquatic plant growth. **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. The *Vermont Clean Water Initiative 2022 Performance Report* (referred to hereafter as Report) summarizes efforts of state government, along with federal and local partners, to improve water quality across Vermont from State Fiscal Year (SFY) 2016 to 2022 (July 1, 2015 – June 30, 2022).

View the full Report here: <https://dec.vermont.gov/water-investment/cwi/reports>

### Vermont’s Clean Water Funding and Investments

Vermont's clean water funding helps municipalities, farmers, landowners, and nonprofit organizations implement projects that reduce nutrient and sediment pollution from all land use sectors. Funds from state programs complement and leverage other funding sources to support clean water efforts statewide. Collectively, state funding programs, federal funding programs, and regulatory programs drive clean water efforts in Vermont. See Report Chapter 1 to learn more about clean water funding.

The State of Vermont invested nearly \$337 million in clean water projects through grants, contracts, and loans from SFY 2016 to 2022. Reaching Vermont’s water quality goals requires investments across all land use sectors. Annual clean water investments have increased more than five-fold statewide since SFY 2016, but funding awarded to projects varies from year-to-year based on project readiness and capacity.

See Report Chapter 2 for more information.

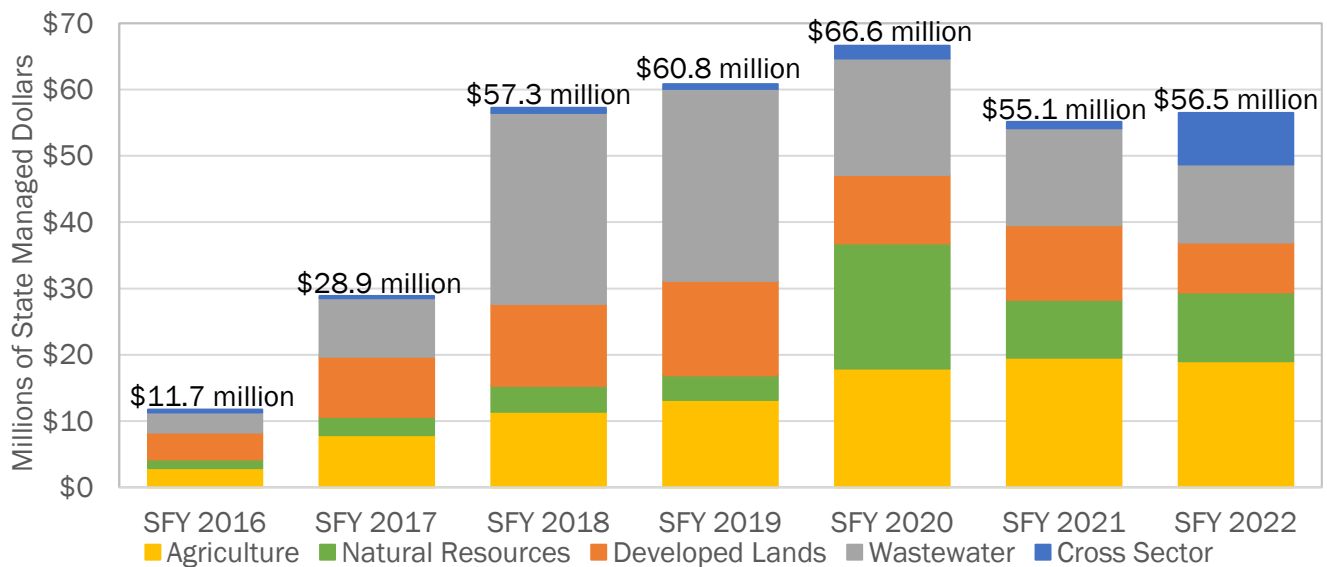






Figure ES-1. Vermont’s clean water investments by land use sector, SFY 2016 - 2022

## Clean Water Project Outputs

Clean water projects target nutrient and sediment pollution statewide across land use sectors to improve Vermont’s water quality. The following highlights some of the results of state and federally funded and regulatory projects completed from SFY 2016 to 2022.

[See Report Chapter 2 for more information and results on the impact of state funding.](#)

Land Use	Clean Water Project Objectives	Cumulative Project Outputs SFY 2016-2022 by Land Use Sector
 AGRICULTURE	Addresses runoff and soil erosion from farm production areas and farm fields.	<ul style="list-style-type: none"> <li>Over <b>335,000</b> acres of agricultural conservation practices implemented on fields and pastures</li> <li>Over <b>4,500</b> structural practices installed in barnyards/production areas</li> </ul>
 NATURAL RESOURCES	Restores functions of “natural infrastructure” – river channels, floodplains, lakeshores, and wetlands	<ul style="list-style-type: none"> <li>Over <b>470</b> riparian acres (adjacent to rivers, lakes, and wetlands) actively restored through buffer planting and floodplain and lakeshore restoration</li> <li>Over <b>2,600</b> riparian acres passively restored through river corridor and wetland easements</li> </ul>
 ROADS      STORMWATER DEVELOPED LANDS	Addresses stormwater runoff from developed lands, such as parking lots, sidewalks, rooftops, and roads	<ul style="list-style-type: none"> <li>Over <b>340</b> municipal road miles improved through drainage and erosion control best practices</li> <li>Over <b>1,000</b> acres of existing impervious/hard surfaces treated by stormwater practices</li> </ul>
 WASTEWATER	Decreases nutrients (phosphorus and nitrogen) through enhanced wastewater treatment and addresses aging infrastructure	<ul style="list-style-type: none"> <li><b>21</b> wastewater treatment facility upgrades and refurbishments completed</li> <li><b>6</b> combined overflow abatements completed<sup>1</sup></li> </ul>

## Total Maximum Daily Load (TMDL) Progress

The 2022 Performance Report summarizes the state’s progress in implementing the Lake Champlain and Lake Memphremagog phosphorus Total Maximum Daily Loads (TMDLs). TMDLs identify water pollution (e.g., phosphorus) reductions required to restore water quality. The figures below show the estimated total phosphorus load reduction (metric tons per year) achieved by clean water project implementation thus far, and the projected annual increase in estimated total phosphorus load reduction necessary to meet the Lake Champlain TMDL (Figure ES-2) and Lake Memphremagog TMDL (Figure ES-3) within the 20-year timeframe of the plans. Estimates include the results of projects implemented through state and federal funding programs and regulatory programs.

[See Report Chapters 3 and 4 for more information.](#)

<sup>1</sup> Combined sewer overflows (CSOs) may require multiple abatement projects in order to achieve water quality standards or eliminate any potential discharge from the CSOs.

# TMDL Progress Projections

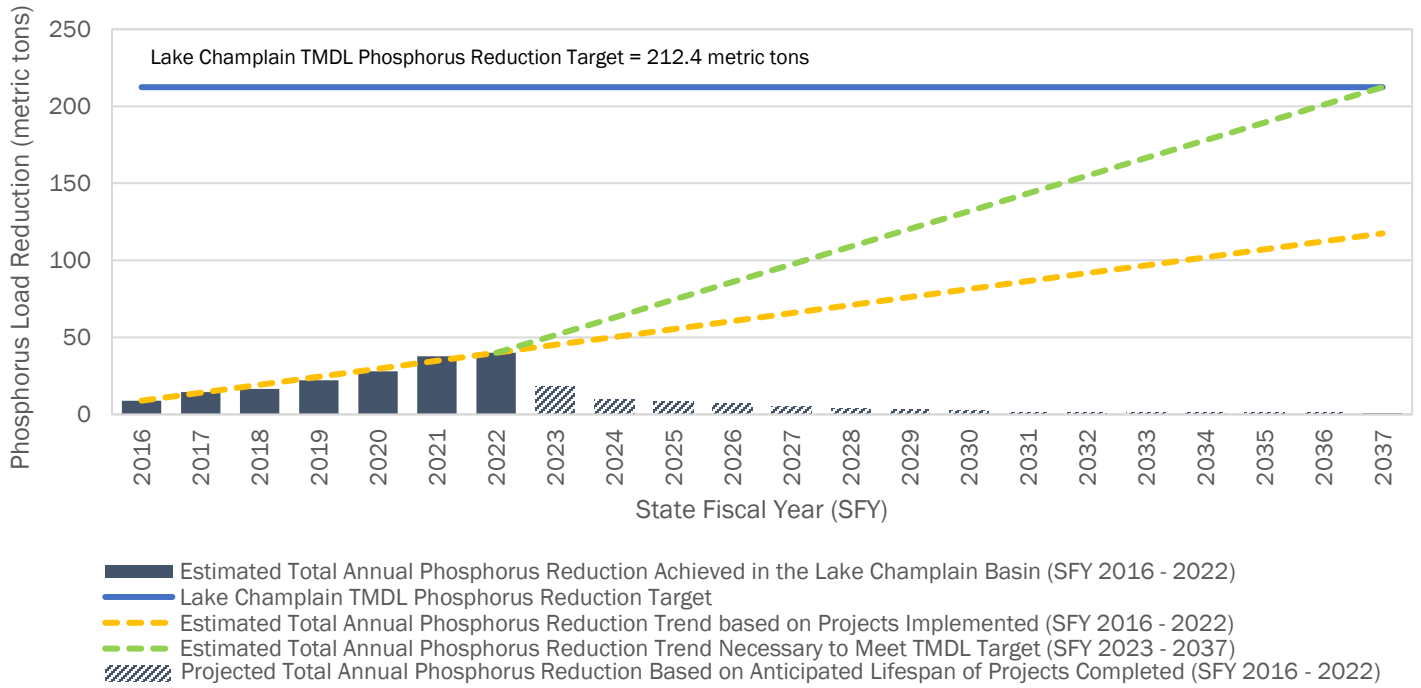


Figure ES-2. Estimated total annual phosphorus load reductions achieved to date and projected phosphorus reduction trend necessary to meet the Lake Champlain TMDL phosphorus reduction target by SFY 2037.

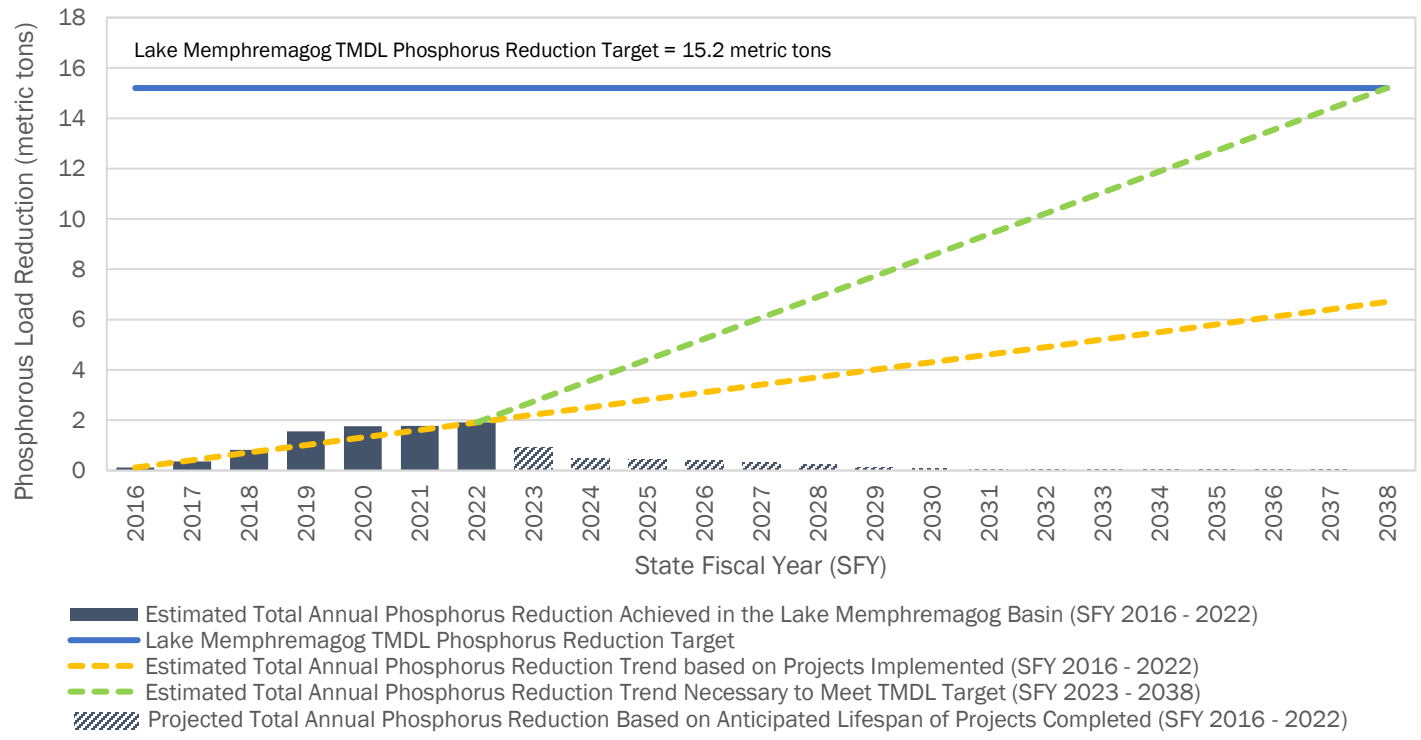


Figure ES-3. Estimated total annual phosphorus load reductions achieved to date and projected phosphorus reduction trend necessary to meet the Lake Memphremagog TMDL phosphorus reduction target by SFY 2038.

The TMDLs for both the Lake Champlain and Lake Memphremagog basins necessitate a year-over-year increase in achieved total estimated phosphorus load reduction in order to meet the established targets. The green dashed line in Figure ES-2 and Figure ES-3 shows a path forward to meet the TMDL targets. This path will depend on many factors including expansion of existing programs, growth in collective capacity, and implementation of new phosphorus estimation methods that more comprehensively capture the impact of clean water projects. Continued effort, investment, and coordination are critical to the state reaching the water quality goals outlined in the TMDLs. In addition, maintaining existing clean water projects to ensure performance through or beyond their anticipated design life will be an important component of realizing total phosphorus load reduction targets.

The estimated total phosphorus load reductions presented in this Report represent modeled estimates of clean water project performance. While these estimates are useful in assessing incremental progress towards the TMDL targets, ultimately the achievement of the state’s water quality goals will be measured based on water quality monitoring. External variables, particularly changing temperature and precipitation patterns resulting from climate change, can have a substantial impact on measured nutrient concentrations and may affect the ultimate achievement of water quality goals in Vermont. This underscores the importance of continued assessment of water quality progress through monitoring data and consideration for external variables that may be impacting measured outcomes.

## Looking Ahead to Cleaner Water

The State of Vermont is moving beyond the ‘ramping up’ period of clean water programs and TMDL implementation in the Lake Champlain and Lake Memphremagog basins. An influx in federal funding being directed towards clean water programs in Vermont is expected to support broader investments resulting in expansion of clean water project impacts. In addition, the state has transitioned to a decentralized structure for many clean water funding programs. By empowering and investing in capacity of local and regional partners to administer funding, greater mobilization of funds and reduction of bottlenecks will allow for increased progress towards clean water goals on the ground. Through expanded methods for estimating phosphorus reductions achieved by clean water projects, the state will have an improved understanding of the progress made towards reaching clean water targets, and what more is needed to ensure these goals are met.

## Learn More and Explore the Data

Explore investment, results, and estimated total phosphorus data behind the *Vermont Clean Water Initiative 2022 Performance Report* in the online Clean Water Interactive Dashboard via the Clean Water Portal at:

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

