



Vermont Clean Water Initiative 2023 Performance Report



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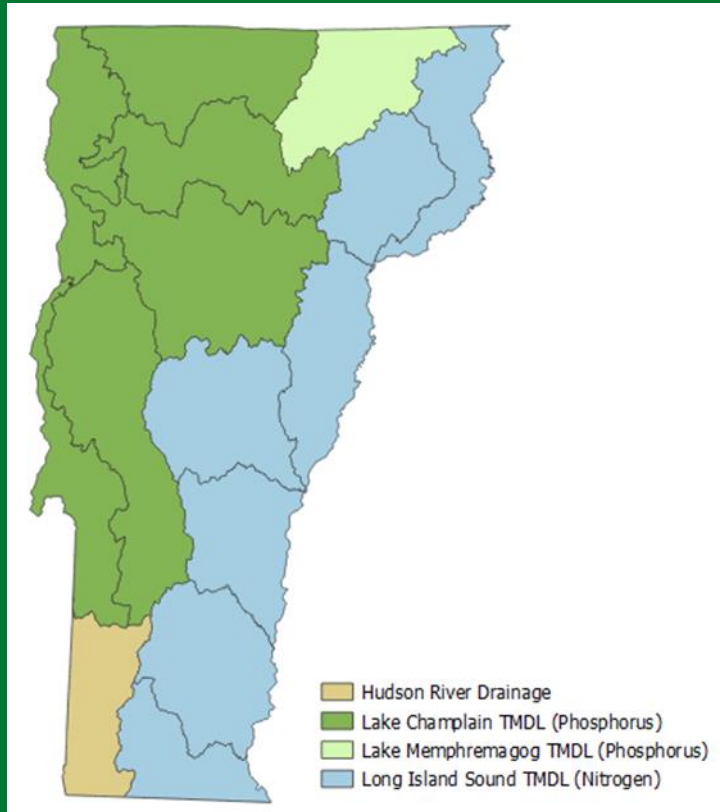
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Presentation Outline






- Water quality in Vermont
- Clean water project examples supporting flood resilience
- Tracking, accounting, and reporting
- How do we measure progress?
 - Investments
 - Project outputs
 - Education and outreach
 - Phosphorus reductions & TMDL progress
- Context and takeaways
- Clean Water Interactive Dashboard

Water Quality in Vermont



- Vermont's waterways vary in quality
 - Many waters are of **exceptional quality** and require **protection**
 - Some waters suffer from **excess pollution** and require **restoration**
- Excess nutrient and sediment pollution can create imbalances that lead to water quality impacts, including cyanobacteria blooms.
- Clean water restoration plans — Total Maximum Daily Loads (TMDLs) — identify pollutant reductions required for an impaired waterbody to meet the State of Vermont's water quality standards.

Clean Water Projects

Land Use	Clean Water Project Objectives
	Agriculture: Reduces pollution by slowing/controlling rain/snowmelt runoff and soil erosion from farm production areas and farm fields
	Stormwater: Reduces pollution by slowing/controlling rain/snowmelt runoff from developed lands, such as parking lots, sidewalks, and rooftops
	Natural Resources: Reduces pollution by restoring functions of “natural infrastructure” — river channels, floodplains, lakeshores, wetlands, and forests
	Transportation Related Stormwater: Reduces pollution by slowing/controlling rain/snowmelt runoff and erosion from roads
	Wastewater: Reduces pollution by improving wastewater treatment infrastructure

Agriculture



Before



After

Stormwater



Before



After

Natural Resources



During



After

Transportation Related Stormwater



Before



After

Wastewater



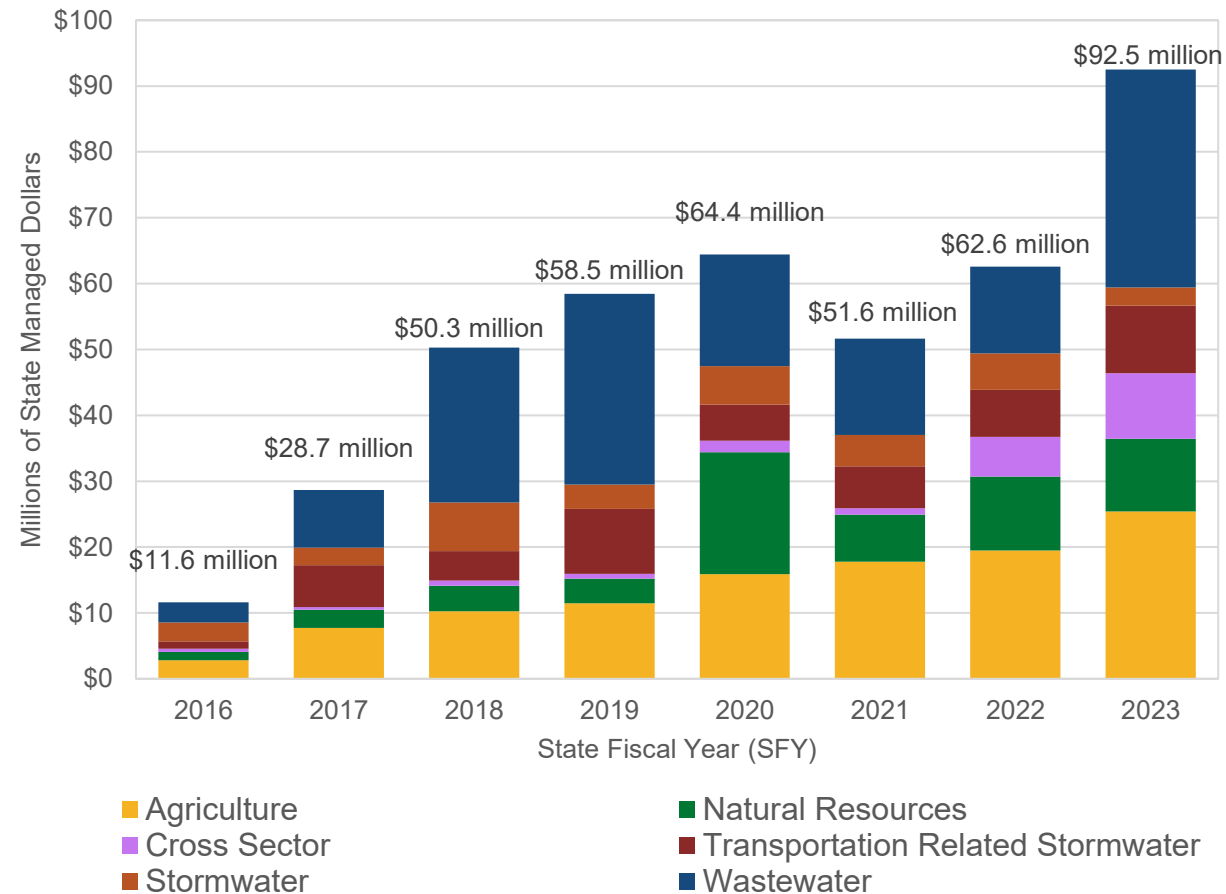
Tracking, Accounting, and Reporting








- Accountability requirements established by Vermont Clean Water Act (Act 64 of 2015)
- Transparency on progress under the Clean Water Service Delivery Act (Act 76 of 2019)
- Basin specific reporting to show how Vermont's regulatory and non-regulatory programs are driving progress towards achieving the phosphorus reduction targets in the Lake Champlain and Lake Memphremagog TMDLs

Investments

- The State has invested over \$420 million dollars in clean water work since SFY 2016
- Clean water funding is allocated to support work across sectors
- Annual variation in funding levels is influenced by project readiness, timing of awards, and funding availability



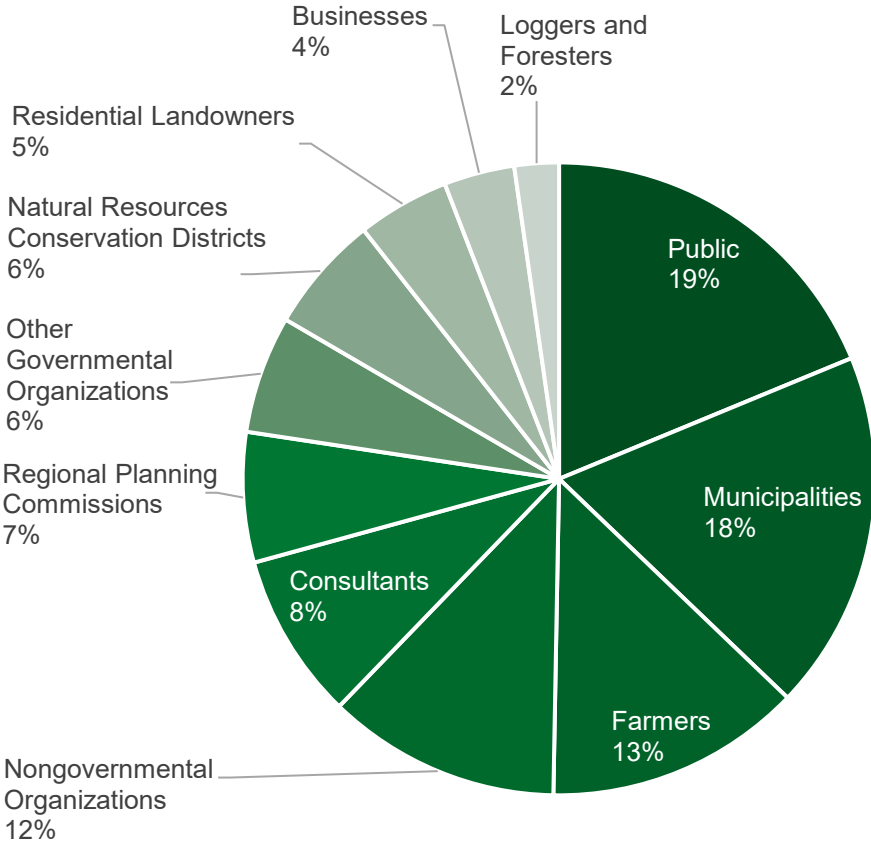
Project Outputs

Land Use	Cumulative Clean Water Project Outputs SFY 2016 - 2023
	<ul style="list-style-type: none"> Over 380,000 acres of agricultural conservation practices implemented Over 5,000 structural agricultural practices implemented
	<ul style="list-style-type: none"> Over 1,400 acres of existing impervious surfaces treated by stormwater practices
	<ul style="list-style-type: none"> Over 500 riparian acres actively restored through buffer plantings and lakeshore restorations Over 2,600 riparian acres passively restored through river corridor and wetland easements
	<ul style="list-style-type: none"> Over 360 municipal road miles improved through drainage and erosion control best practices
	<ul style="list-style-type: none"> 22 wastewater treatment facility upgrades and refurbishments 7 combined sewer overflow abatements

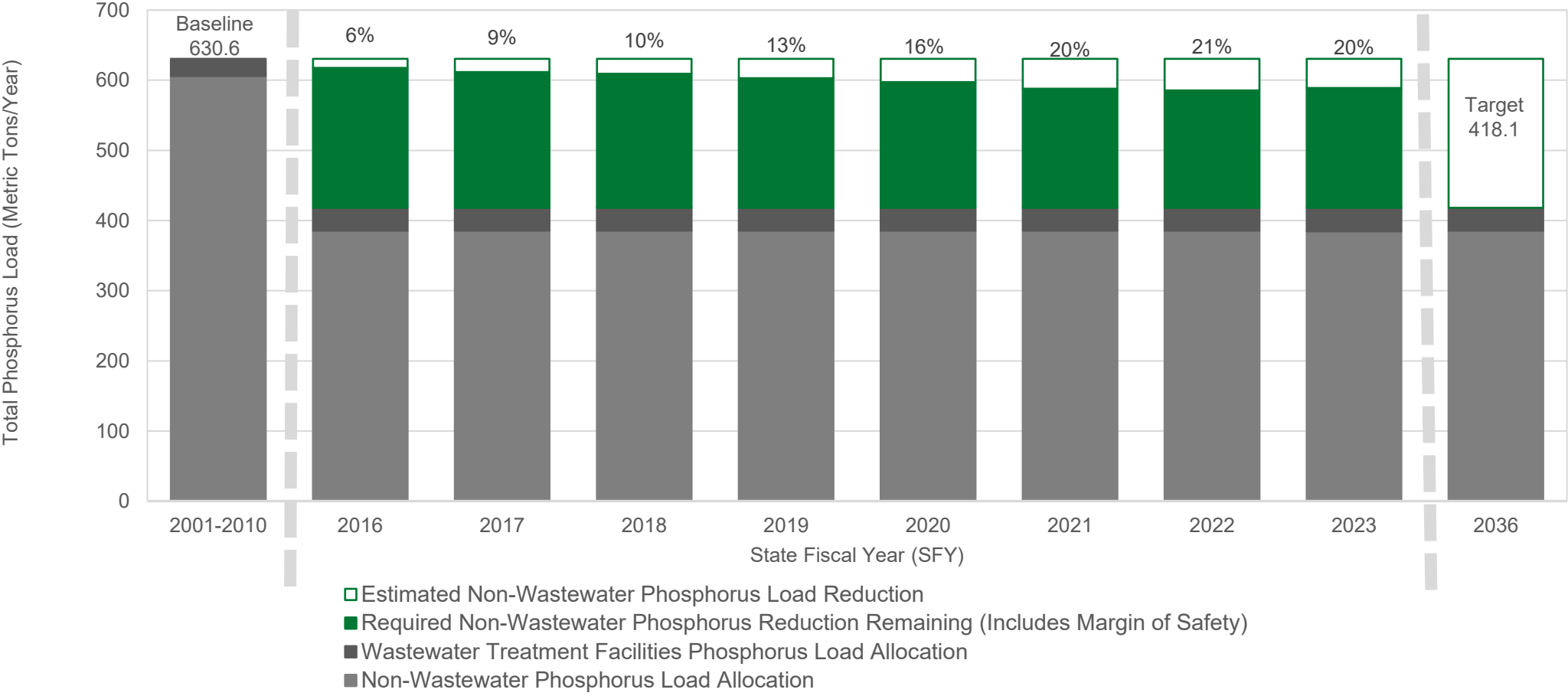
Education & Outreach

The State supports the delivery of clean water education through outreach and technical assistance

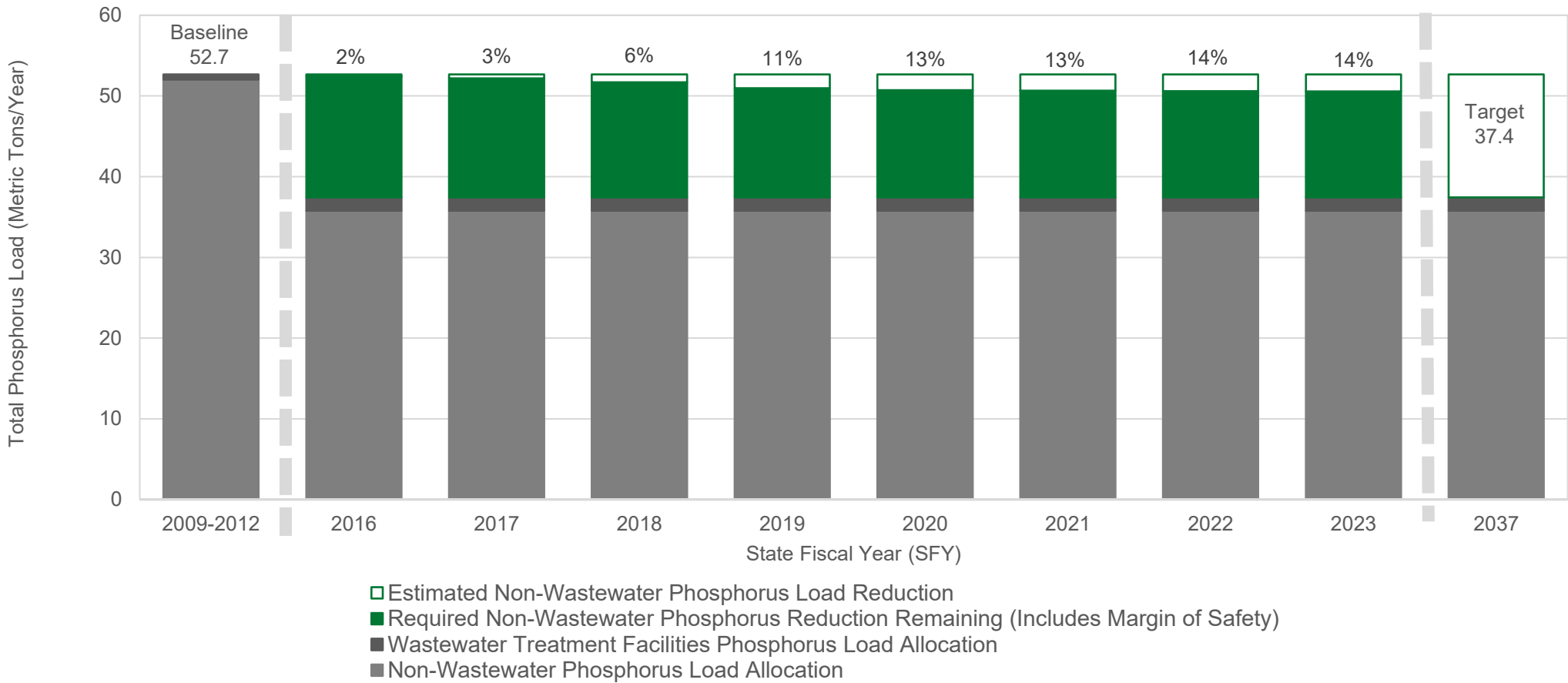
- **Outreach:** workshops, trainings, and public/stakeholder meetings
- **Technical assistance:** targeted, one-on-one interactions



Estimated Phosphorus Reductions – Lake Champlain Basin

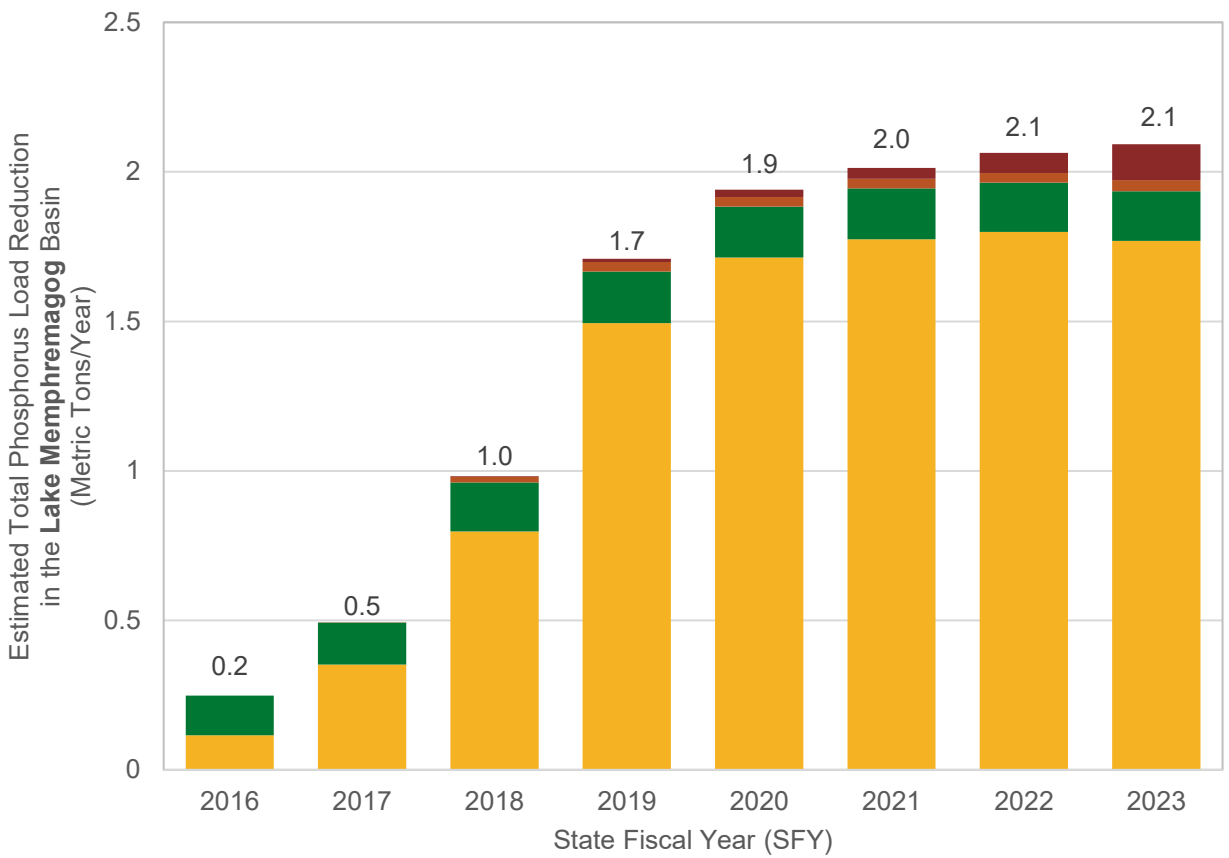
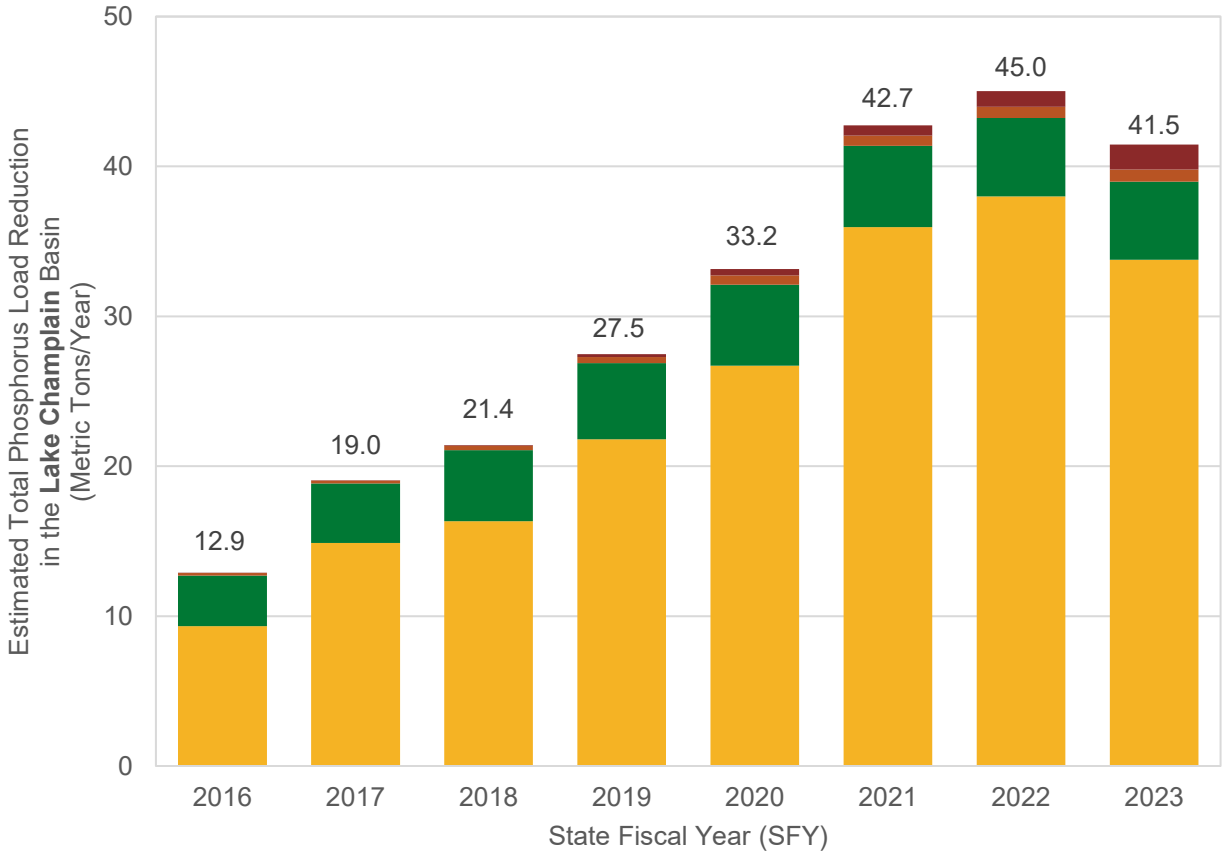


Estimated Phosphorus Reductions – Lake Memphremagog Basin



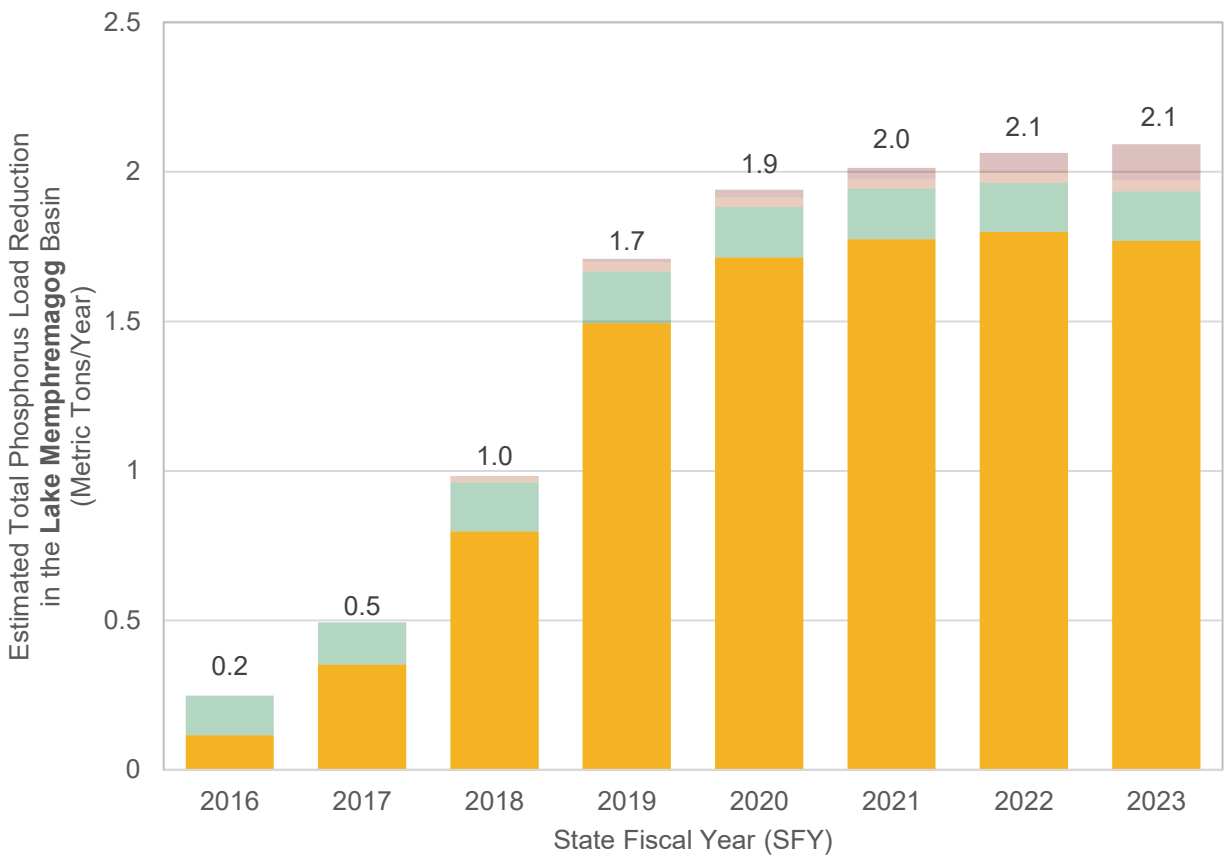
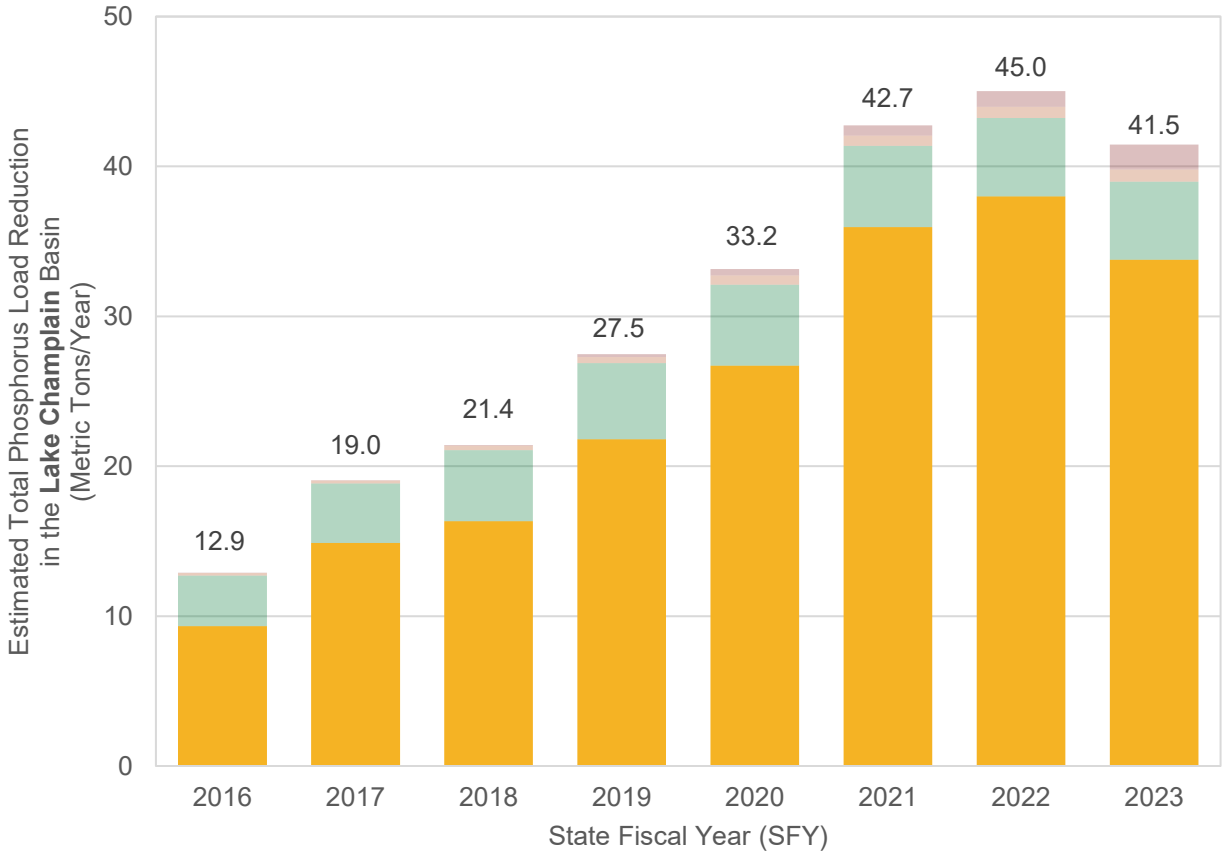
Estimated Phosphorus Reductions

■ Agriculture
 ■ Natural Resources
 ■ Stormwater
 ■ Transportation Related Stormwater



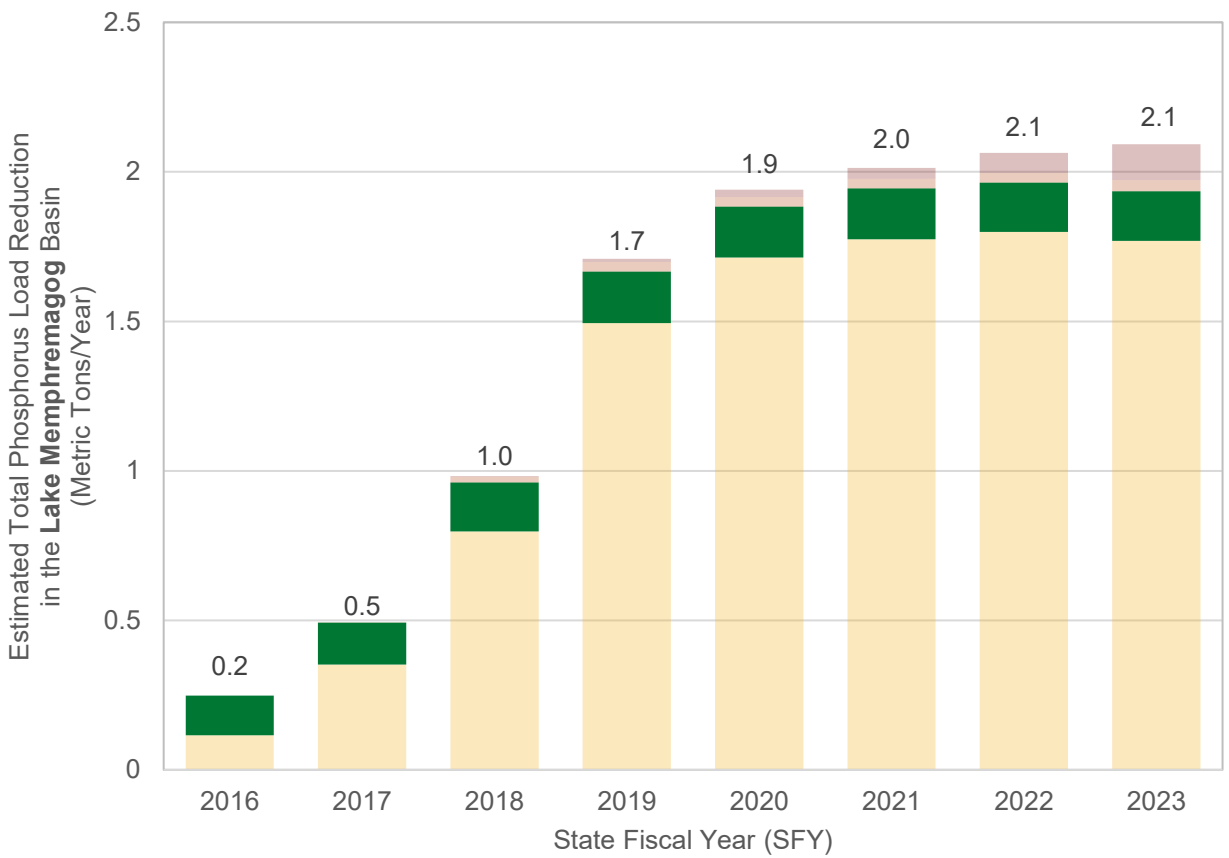
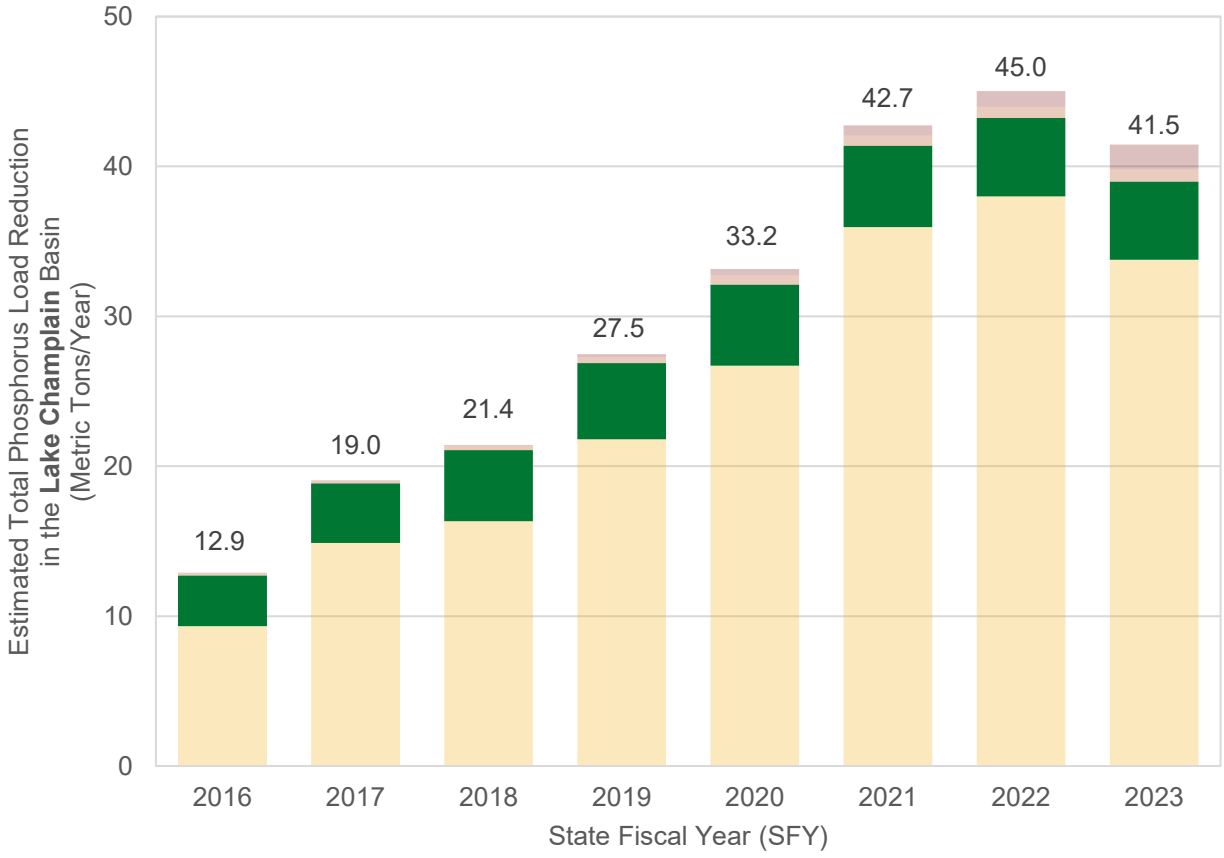
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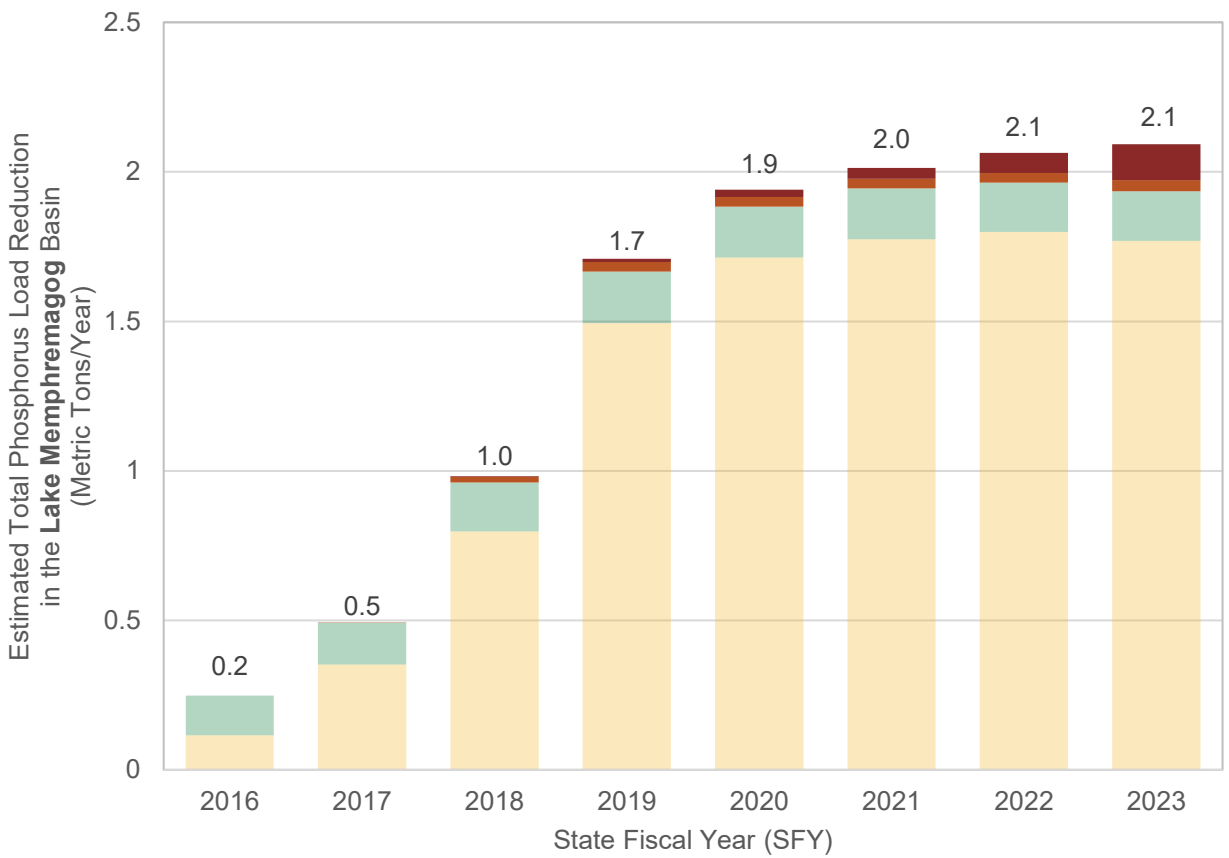
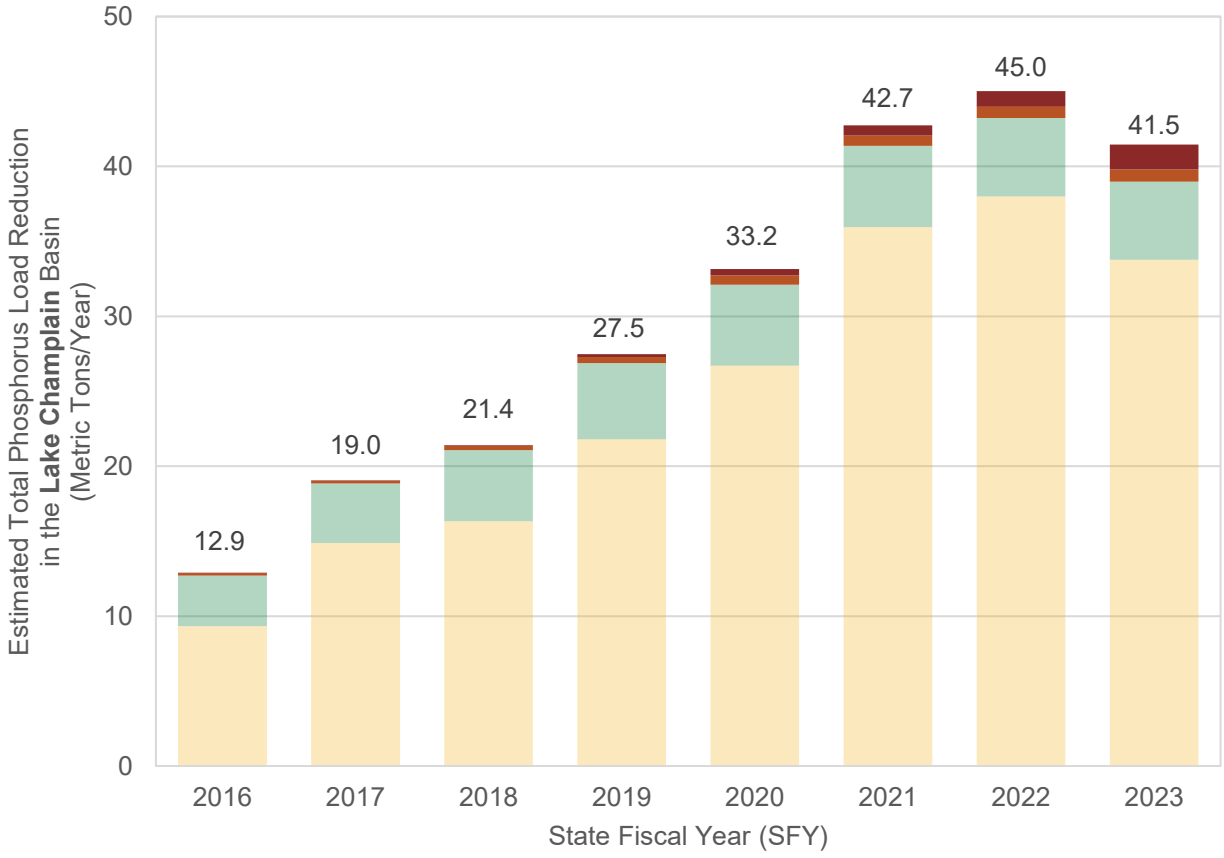
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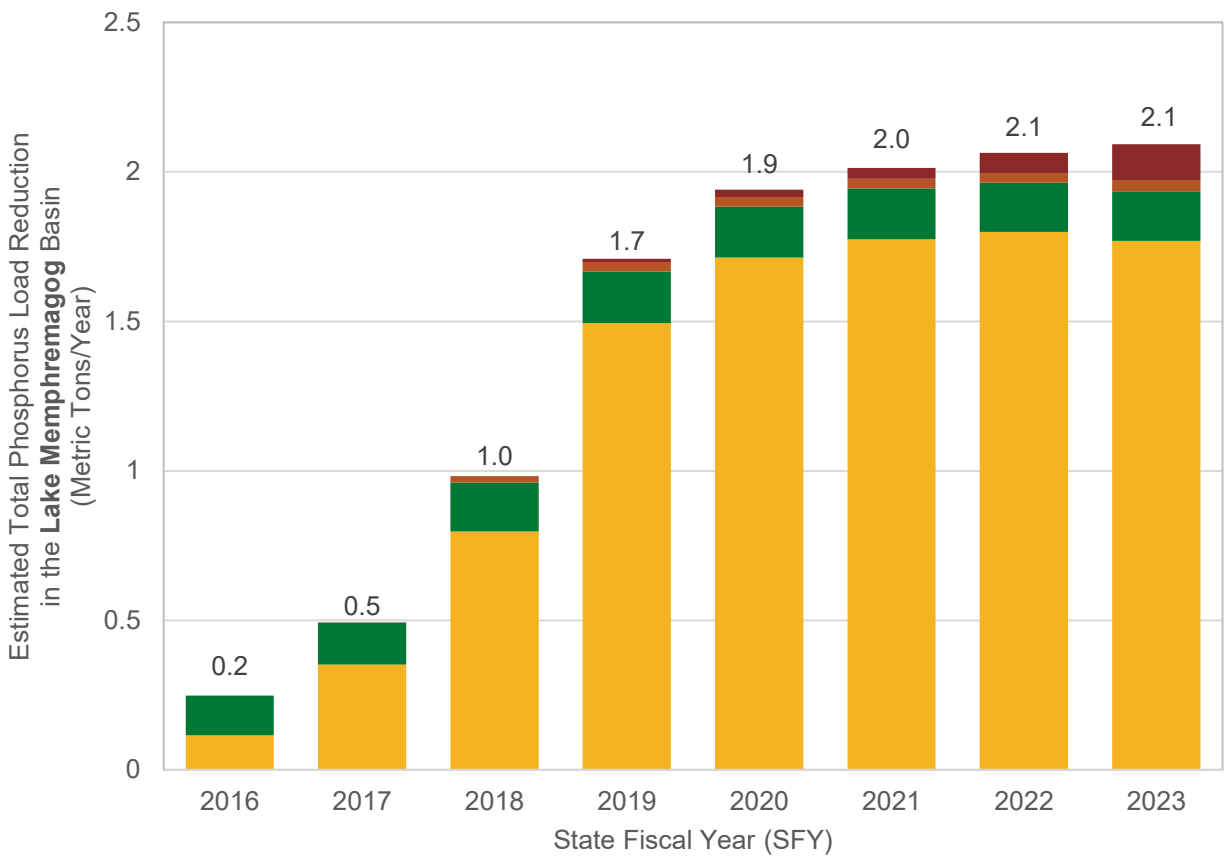
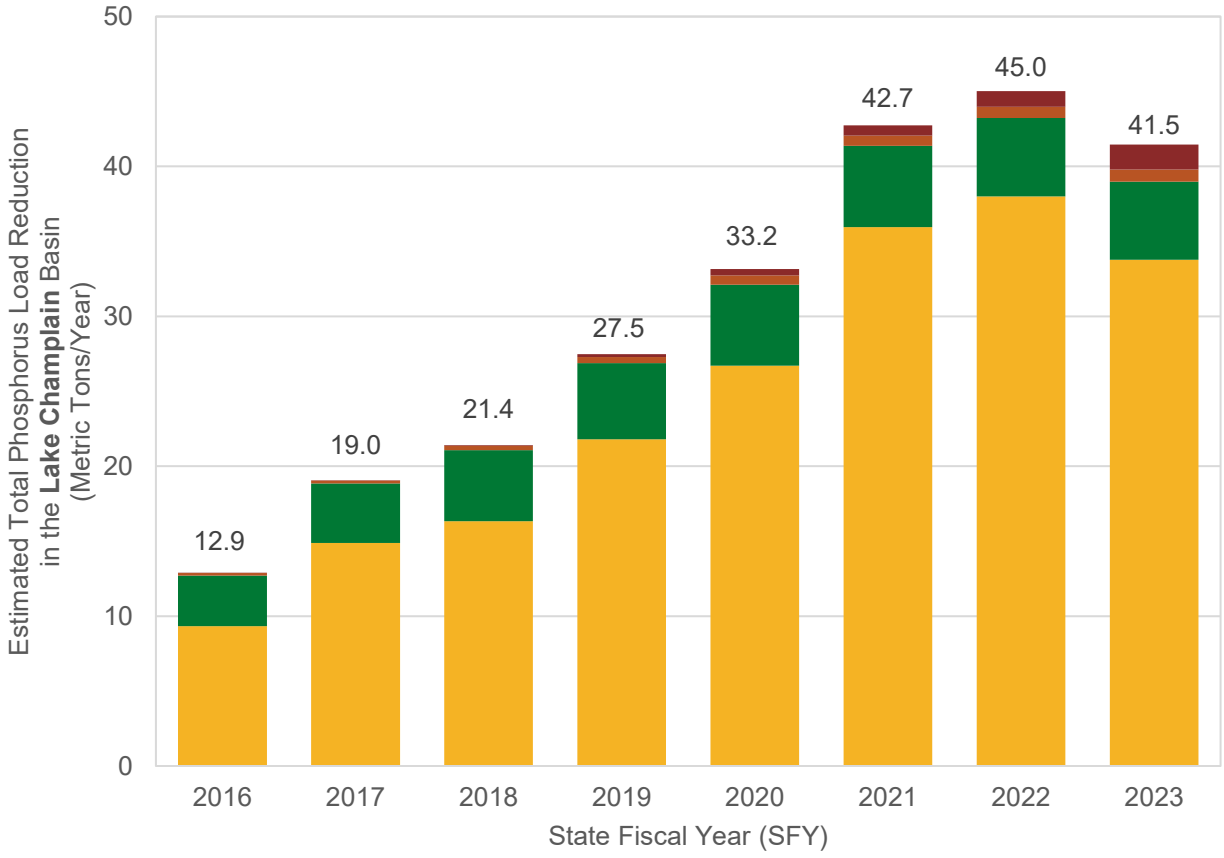
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Estimated Phosphorus Reductions

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Context & Takeaways



- Investing in and empowering our partners in the clean water workforce
- Influx in funding through state and federal funding programs
- Expanded regulatory requirements moving to implementation
- Implementing new accounting methods to fully capture the results of investment
- Using adaptive management to identify gaps and inform program evolution
- Achieving multiple benefits of clean water and climate resilience

Clean Water Interactive Dashboard



Welcome to the Clean Water Interactive Dashboard!



The Clean Water Interactive Dashboard is a data visualization tool that allows users to engage with data summarizing clean water investments, outputs, and outcomes across Vermont. The data presented in this tool is compiled annually for the *Vermont Clean Water Initiative Annual Performance Report*, which is submitted to the State Legislature and the Federal Environmental Protection Agency to communicate the state's progress in reaching our water quality goals.

[Click here to access the Vermont Clean Water Initiative Annual Performance Report.](#)

Vermont's lakes, rivers, wetlands, and reservoirs are important environmental and economic resources for residents and visitors. The State of Vermont has made it a priority to support partners' work to restore, enhance, and protect Vermont's water quality. In Vermont, a primary water quality challenge is pollution caused by excess sediment and nutrients, such as phosphorus and nitrogen, originating from the land and carried to waterways through runoff.

[Click here to learn more about phosphorus and related water quality challenges.](#)

Clean water projects address a variety of causes and sources of water quality issues across land uses. Clean water projects provide 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.

[Click here to learn more about clean water projects.](#)



Data presented in this dashboard is organized by Tactical Basin Planning region. The State of Vermont uses the Tactical Basin Planning process to identify and prioritize clean water actions at a regional scale. [Click here to learn more about Tactical Basin Planning.](#)

Click on the map to find out how Tactical Basin Planning regions relate to other spatial boundaries.



photo credit: Linda Carlsen-Sperry, Jim Dreshler, Blaine Hastings

Click on one of the measure icons below to view the data!



Investment measures show how Vermont invests in clean water projects from identification and planning through design, implementation, and maintenance. *State investments* are dollars obligated or awarded by State of Vermont agencies. *Federal investments* included in this report are dollars awarded to clean water projects through the Lake Champlain Basin Program.



Project output measures quantify the results of clean water projects. Output measures are standardized across programs based on project type to consistently summarize the results of funding and regulatory efforts.



Pollutant reduction measures are estimated nutrient (phosphorus) load reductions achieved by clean water projects modeled at the individual project level. Modeled pollution reduction estimates are based on the total pollutant load of the area treated and the expected pollutant reduction efficiency of the project.



Cost effectiveness measures return on investment, or dollars spent on project implementation per unit of pollution reduced. Cost effectiveness considers the total estimated pollutant reduction of the project for its anticipated functional life and total investment spent on implementation of the project.



Education measures summarize state efforts to support identification, development, and implementation of clean water projects. The State of Vermont and its partners deliver education through outreach events like workshops, trainings, and public meetings as well as targeted, one-on-one technical assistance.

Thank you!

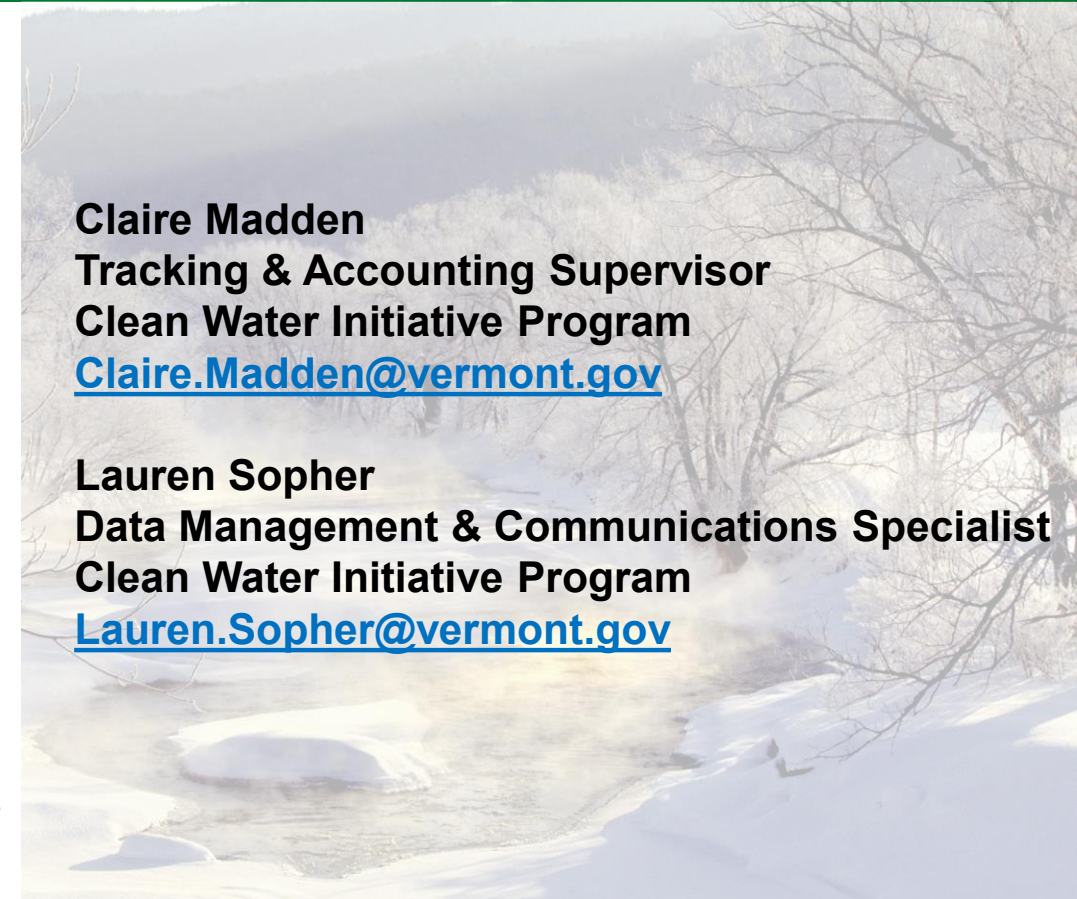
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Vermont Agency of Administration;
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