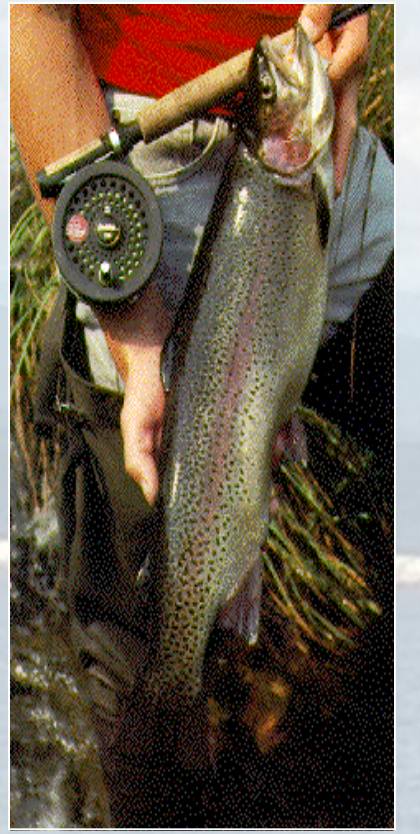
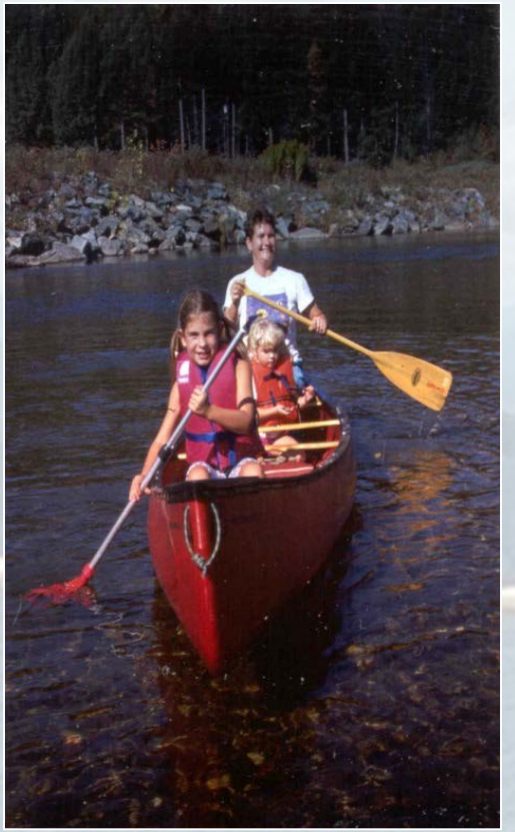
Lake Champlain
Total Maximum Daily Loads (TMDLs)

Accountability Framework Report

Kari Dolan, Manager, DEC Clean Water Initiative Program
Mike Middleman, Agency of Agriculture, Food & Markets
March 29, 2018

Vermont's Waters are Critical Community Assets





Land Uses Can Harm Lake Champlain






Phosphorus Pollution

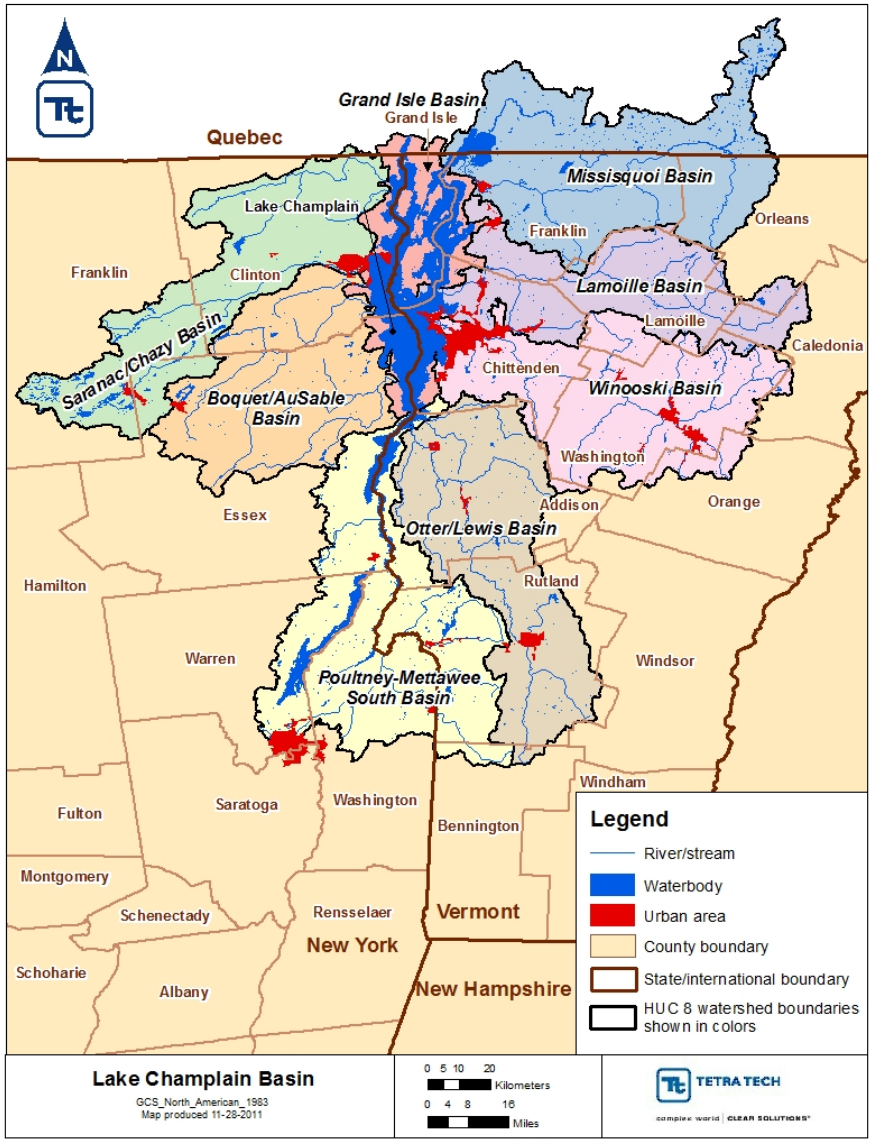
Blue-green algae bloom in Missisquoi Bay
Photo by Robert Galbraith

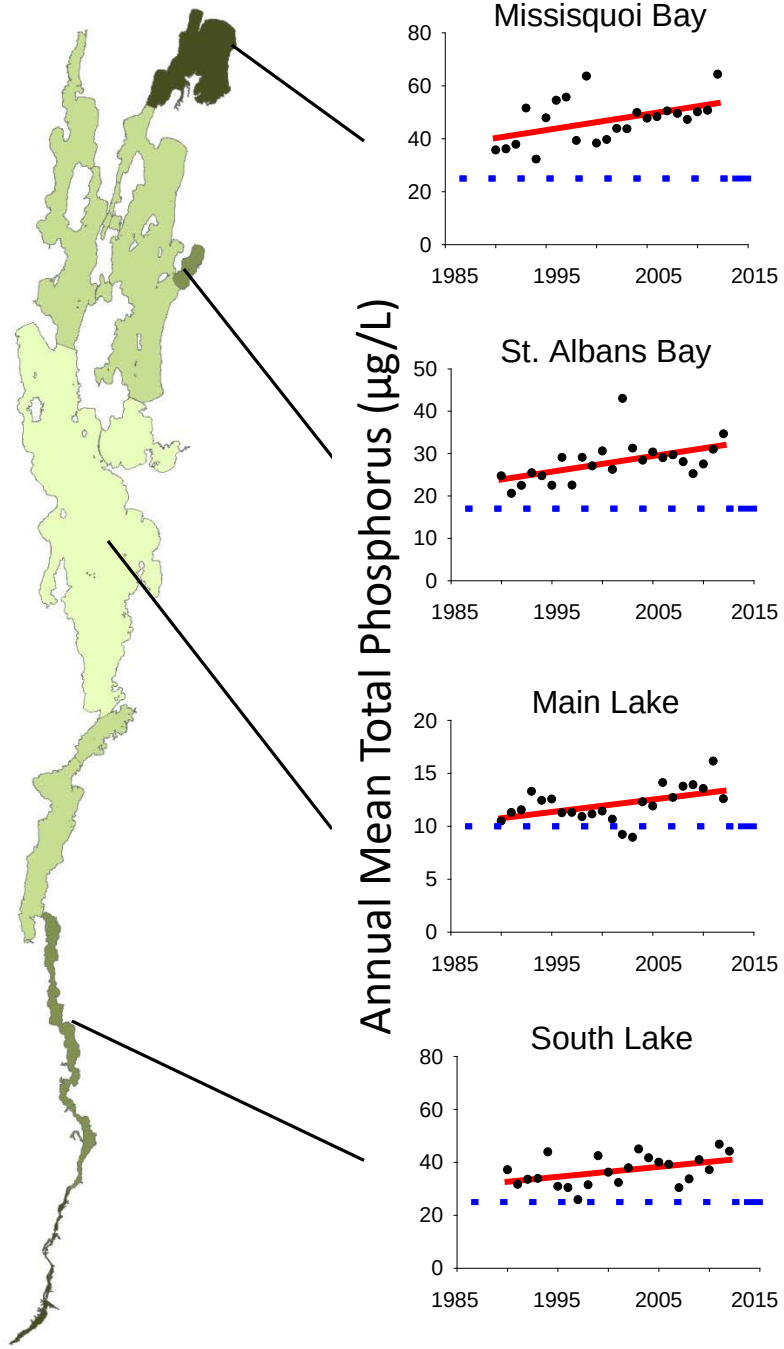
Why We Need Clean Water

- **Use and enjoyment of Vermonters**
  - Drinking water
  - Swimming
  - Fishing
- **Support tourism, at annual spending of $2.5 billion**
  - Lake Champlain a key attraction for visitors
  - Second home-owners in towns bordering the Lake spend $150 million annually
  - Overnight visitors in Champlain Valley spend over $300 million annually
  - Day visitors spend $30 million annually
- **Maintain property values**
- **Integral to the Vermont brand**
  - Our environmental is our economy

Lake Champlain Statistics

- 8,234 square mile watershed
  - 56% (VT); 37% (NY); 7% (Quebec)
  - Drains nearly half the land area of Vermont
- 120 miles long
- Surface area of 435 square miles
- Maximum depth of 400 feet
- 6th largest (natural) lake in the US
- Drinking water source for 200,000 people
- Residents:
  - 571,000 in total; 390,000 in Vermont
  - More than 100,000 dairy cows





Trends in Lake Champlain phosphorus concentrations

Trend line

Water quality standard

Lessons learned from the past 20 years

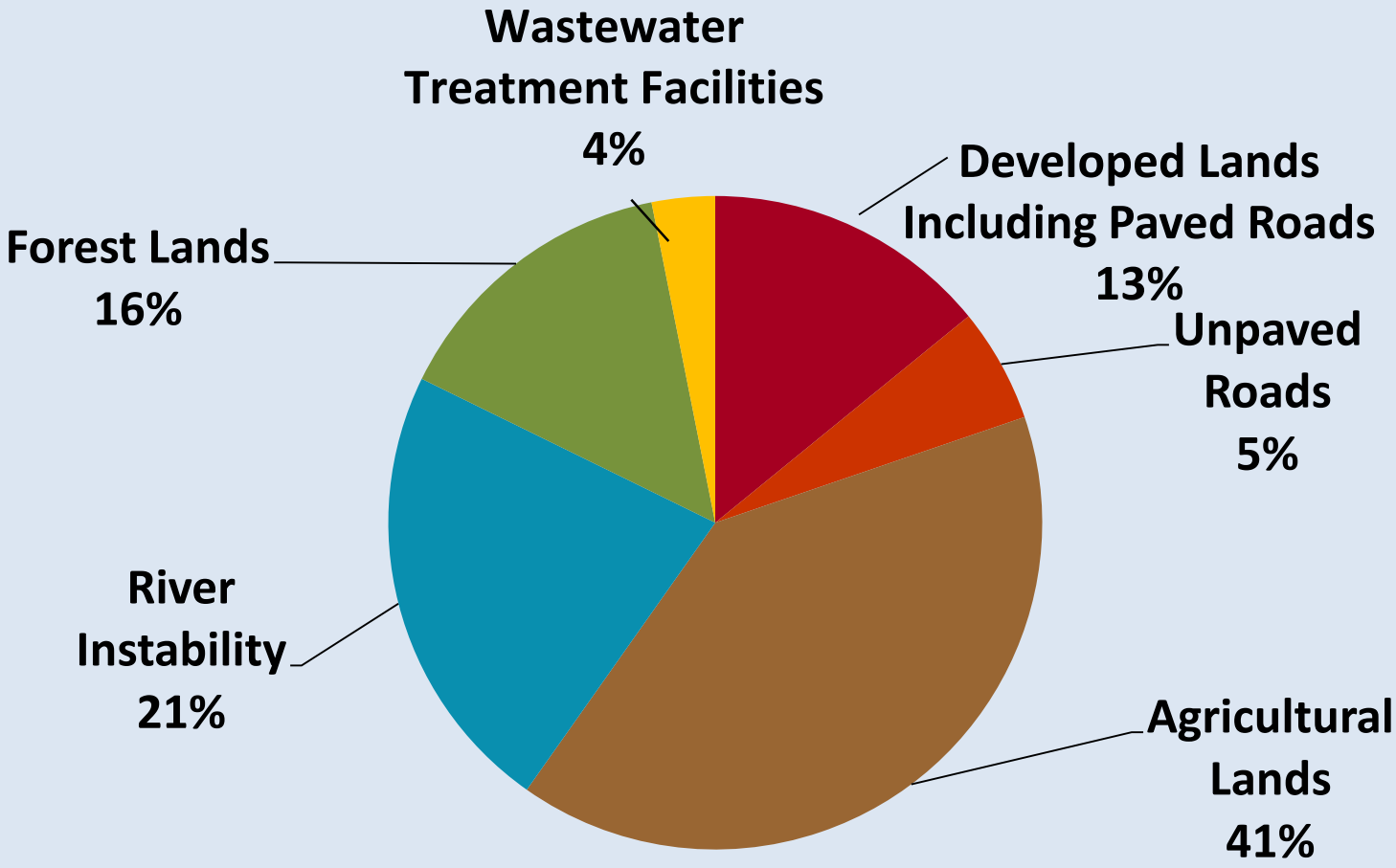
Phosphorus levels in the lake are above the allowable standards.

Vermont has taken many important actions, especially in the last 10 years.

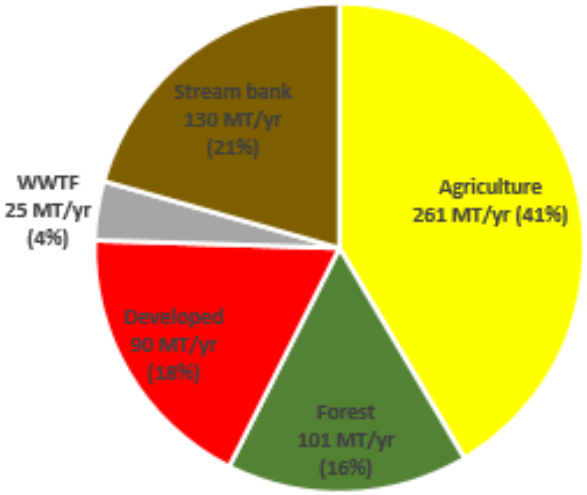
Cleaning up the lake ecosystem is complex and recovery will take time.

We need to do a lot more.

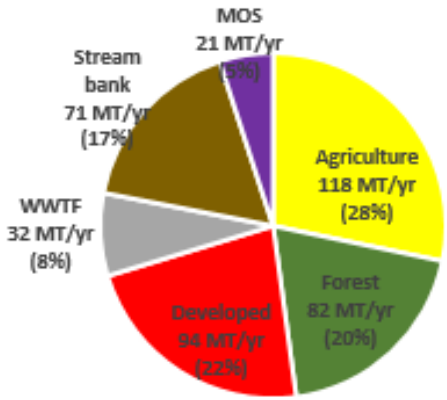
Vermont Phosphorus Sources to Lake Champlain 2001-2010 Base Loads



Base Load
631 Metric Tons/Year



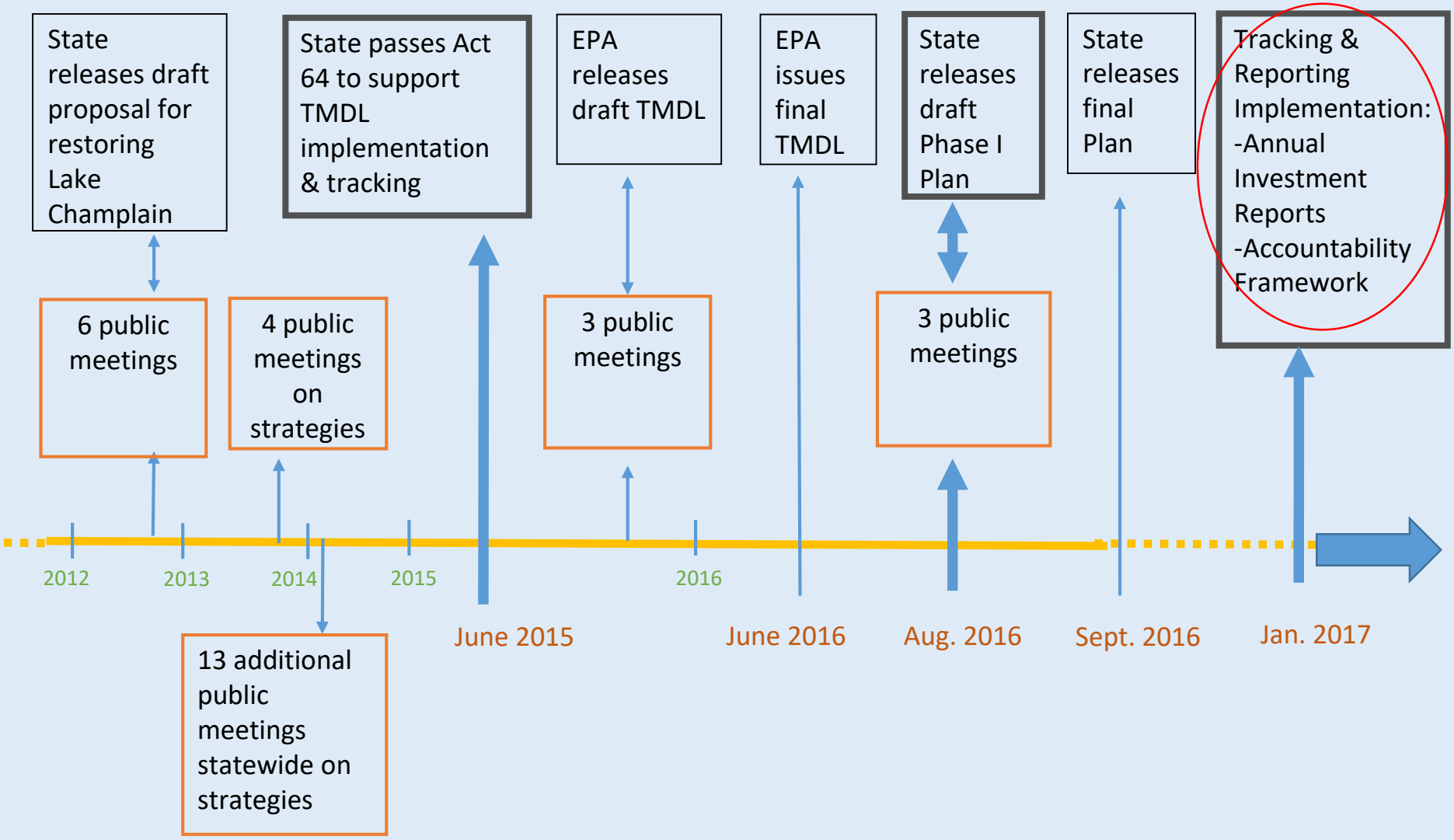
Vermont Reduction
Required = 213 mt/yr (34%)

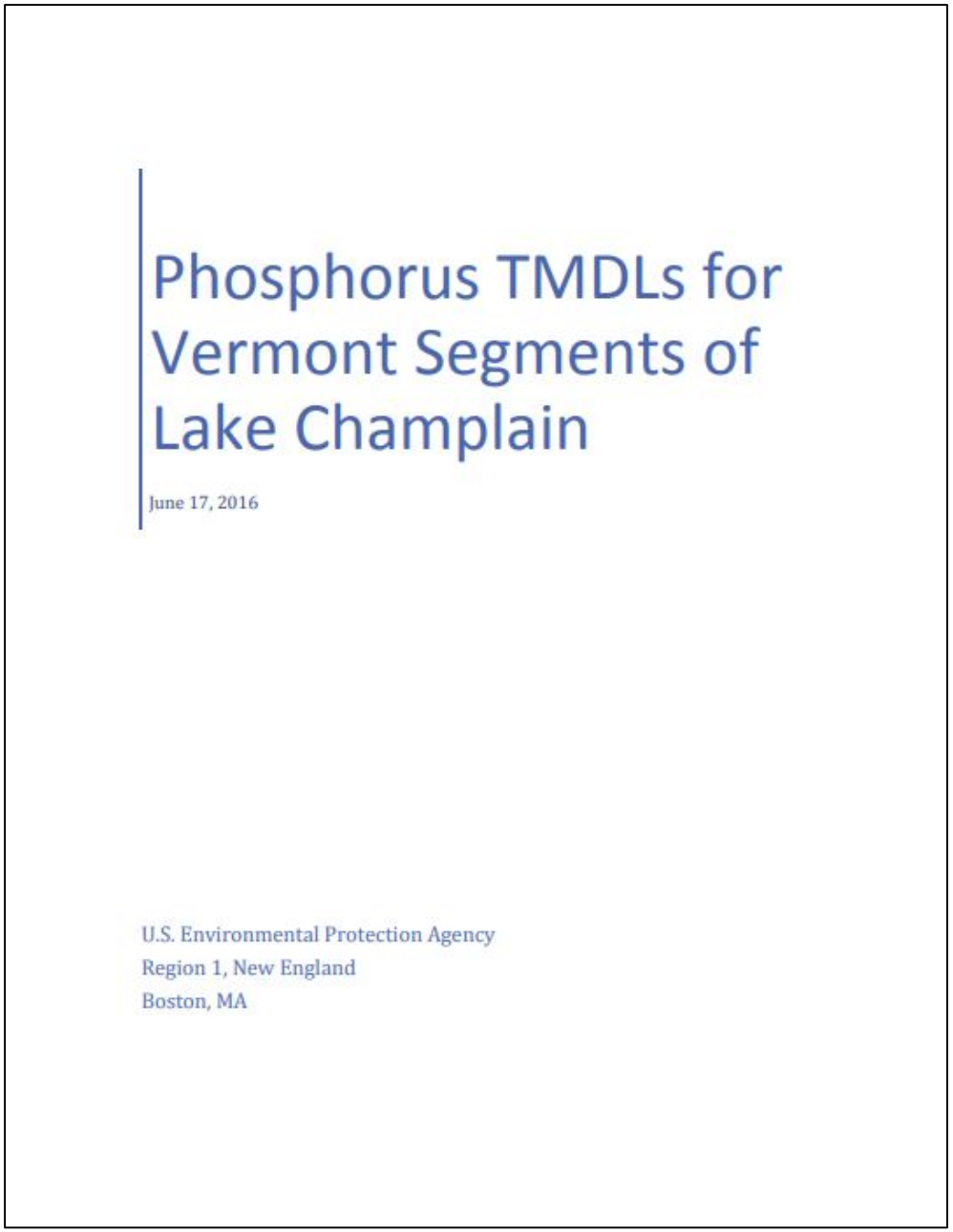


TMDL Loading Capacity and Allocations
418 Metric Tons/yr

34% phosphorus reduction over 20 years

Lake Champlain TMDL and Phase I Implementation Plan Key Milestones 2012-2016





http://dec.vermont.gov/watershed/cwi/restoring/champlain

The Vermont Clean Water Act (Act 64, 2015) supports State clean water priorities including implementation of the Lake Champlain TMDL

- Agricultural Water Quality Management
- Impervious Surface Stormwater Management
- Road-related Stormwater Management
- Clean Water Fund

The Vermont Lake Champlain Phosphorus Phase 1 Implementation Plan

- Incorporates Act 64 elements
- Includes Natural Resource Restoration and Management (rivers, wetlands, forests)
- Describes Tactical Basin Plans as “Phase 2” to support implementation of actions at the watershed scale
- Supports the new “Vermont Clean Water Initiative”

Phase I Plan Program Areas
Agricultural Programs
Stormwater Management
Rivers Management
Wetlands Management
Lakes Management
Forest Management

“All In” Approach

Wastewater Treatment

Forestry

Developed Land ≥ 3 acres

River Channels

Agriculture

Roads

VERMONT CLEAN WATER INITIATIVE
2017 INVESTMENT REPORT

VERMONT CLEAN WATER INITIATIVE

VERMONT

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

http://dec.vermont.gov/watershed/cwi/cwf#report

Achieving Results: TMDL Accountability Framework

- Purpose: Provide transparent way to gauge Vermont's progress in making water quality improvements
- Modeled after other states' TMDL initiatives
- Establishes a backstop
- Includes:
  - Enforceable milestones
  - Evaluation of Progress in Implementing basin plans
  - Federally imposed consequences for failure to:
    - Take action on milestones, or
    - Failure to achieve pollutant reduction targets

Achieving Results: TMDL Accountability Framework

- Spurs a transparent and comprehensive tracking of the state's progress;
- Creates accountability for pollutant reductions by sector
- Guards against overly generous assumptions that pollutant reductions will occur over time

Phosphorus TMDLs for Vermont Segments of Lake Champlain

June 17, 2016

U.S. Environmental Protection Agency
Region 1, New England
Boston, MA

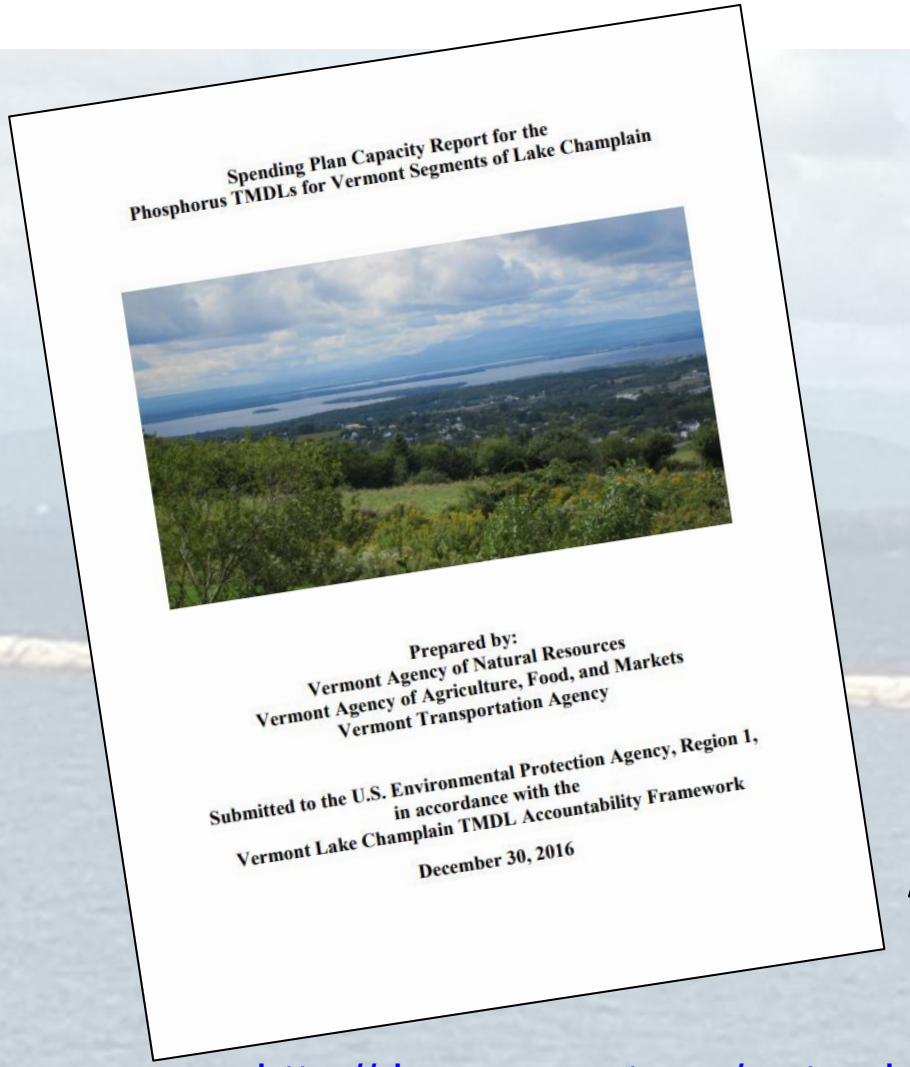
Pages 49-59

Accountability Framework: Two Milestone Periods Period #1: 2015-17

- Intended to ensure that commitments made in VT's Phase I Plan are carried out
- Primary focus on major milestones related to putting major programs and permits in place
- Secondary focus on implementation and enforcement of programs already in place

Accountability Framework, Milestone Period #1, Year 1:

- Focused on actions completed by Dec. 2016
- Interim report card by first quarter, 2017



Spending Plan Capacity Report for the
Phosphorus TMDLs for Vermont Segments of Lake Champlain

Prepared by:
Vermont Agency of Natural Resources
Vermont Agency of Agriculture, Food, and Markets
Vermont Transportation Agency

Submitted to the U.S. Environmental Protection Agency, Region 1,
in accordance with the
Vermont Lake Champlain TMDL Accountability Framework

December 30, 2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

FEB 15 2017

Julie Moore, Secretary
Vermont Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, VT 05620-3901

Anson Tebbetts, Secretary
Vermont Agency of Agriculture, Food and Markets
116 State Street
Montpelier, VT 05620-2901

Dear Secretary Moore and Secretary Tebbetts:

Congratulations on your appointments to lead your agencies. EPA has enjoyed a very productive and collaborative working relationship with both of your agencies and looks forward to continuing this collaboration in the years ahead.

As you know, in June, 2016 EPA established the final phosphorus Total Maximum Daily Loads (TMDLs) for the Vermont Segments of Lake Champlain and transmitted them to the State for incorporation into Vermont's current Water Quality Management plan (also referred to as Vermont's Surface Water Management Strategy). The TMDLs included an Accountability Framework in which EPA identified 16 key milestones for 2016 in Vermont's Phase 1 Implementation Plan that were crucial to the long-term success of implementing the TMDLs. EPA promised an interim "report card" assessing Vermont's success in meeting these key milestones.

EPA has assessed Vermont's progress in meeting these milestones by actively providing input in the development of some of the deliverables and providing formal and informal comment on drafts of others. This has provided EPA with the opportunity to assess the adequacy of the content as well as the timeliness of these actions. EPA has also relied on information contained in the "Spending Plan Capacity Report for the Phosphorus TMDLs for Vermont Segments of Lake Champlain" that was submitted to EPA on December 30, 2016. Appendix B in the report provides a good summary of Vermont's progress in 2016 and highlights the measures that were included in the Accountability Framework.

EPA's overall assessment is that Vermont has made excellent progress in achieving the milestones in the Accountability Framework. Thirteen of sixteen milestones were completed by December 30, 2016. Of the three remaining milestones, two are planned for completion this month (the development of the matrix and template for nutrient management planning and revision of the Agency of Natural Resources/Agency of Agriculture, Food and Markets (AAFM)

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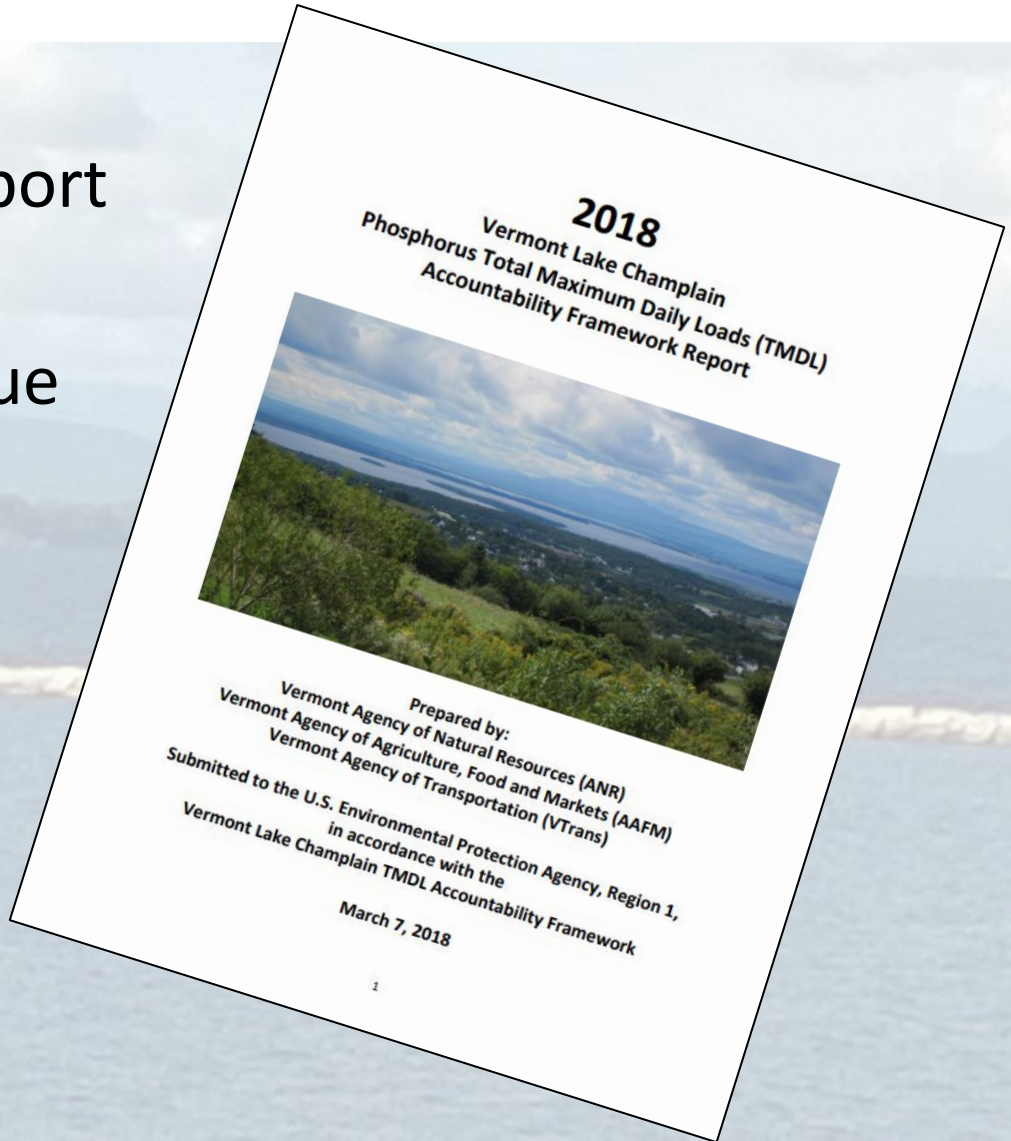
http://dec.vermont.gov/watershed/cwi/restoring/champlain

Accountability Framework, Milestone Period #1, Year 2:

- Focused on actions completed by Dec. 2017
- Interim report card by first quarter, 2017

- State submitted Report in March, 2018
- Final Report Card due in April, 2018



Milestone Period #1, Year 1
Due By December 2016

Agriculture	
-Required Agricultural Practices revision adopted	✔
-Small Farm Operation certification program rule adopted	✔
-Livestock exclusion incentive program in place	✔
-Develop matrix and small farm template for nutrient management planning	✔
-Develop Environmental Stewardship Incentive Program in priority watersheds	✔
-Mandate certification of custom manure applicators	✔
-Develop requirements for farmer training programs	✔
-Revise the ANR/AAFM Memorandum of Understanding for the Agricultural Nonpoint Source Program	✔

Milestone Period #1, Year 1
Due By December 2016

Stormwater	
-Issue Final TS4 Permit for State Highway System	✔
-Adopt Final Vermont Stormwater Management Manual	✔
-Forestry AMP revision completed	✔

Natural Resources	
-Forestry AMP revision completed	✔
NOTE: Updated AMPs effective 10/2016; Undergoing second revision to address permanent bridges on intermittent streams	

Funding	
-Legislature establishes Clean Water Improvement Fund	✔
-Updated Report to EPA with spending plan capacity	✔
NOTE: Next spending plan capacity report due on 12/2021	

Milestone Period #1, Year 1
Due By December 2016

Combined Sewer Overflows	
-Issue new CSO Rule, replacing 1990 CSO Control Policy	✔

Tracking & Reporting	
-Develop comprehensive TMDL Implementation Tracking & Reporting System	✔

Milestone Period #1, Year 2
Due By December 2017

Agriculture	
-Nutrient Management Plan (NMP) milestones completed	✔
-Targeted funding for agricultural Best Management Practices and NMP implementation provided in Missisquoi Bay, St. Albans Bay, South Lake	On-going
-Report to Legislature on Recommendations for Tile Drains	✔
-Propose amendments to RAQPs to include requirements for reducing nutrient contributions from subsurface tile drainage	✔
-Complete education, outreach & compliance activities with farms in the Missisquoi Bay watershed	✔
-Commence notification of affected farms about the Assessment and Plan process as detailed in the February 3, 2016 Decision	✔

Milestone Period #1, Year 2
Due By December 2017

Stormwater	
-Issue Final Municipal Roads General Permit	✔
-Issue Final Developed Lands General Permit	On-going
NOTE: DEC expects to begin rule-making in April, 2018	
-Revise MS4 permit to require existing regulated municipalities to control discharges consistent with TMDL	On-going
NOTE: ANR released draft permit in 2/2018; New Target Completion Date: 4/13/2018	

Tactical Basin Plans	
-Tactical Basin Plans completed for Poultney, Mettawee & Lower Lake Champlain	✔

Milestone Period #1, Year 2
Due By December 2017

Funding	
-Establish long-term revenue source to support water quality improvement via the Clean Water Fund	On-going
NOTE: CWF's revenue source was extended to 7/1/2027; VT directed an additional $48 million above baseline spending forFY2018-2019; State continues to pursue options	

Water Quality Standards	
-Update the Vermont Water Quality Standards to allow for upward reclassification of designated uses to a new, more protective class	✔

Accountability Framework Period #2: Post 2017

- Watershed specific
- Keyed to Implementation Table in five year Phase II plans
- Mid-point check-in at 2.5 years
- Major evaluation and determination as next five year plan developed
- Consequences could be tailored for watershed or applied broadly if systemic problems

Champlain TMDL Accountability Framework Report:

http://dec.vermont.gov/watershed/cwi/restoring/champlain

Kari Dolan: kari.dolan@state.vt.us, 802-490-6113
Mike Middleman: Michael.middleman@Vermont.gov, 802-505-5190