Restoring Clean Water in Vermont

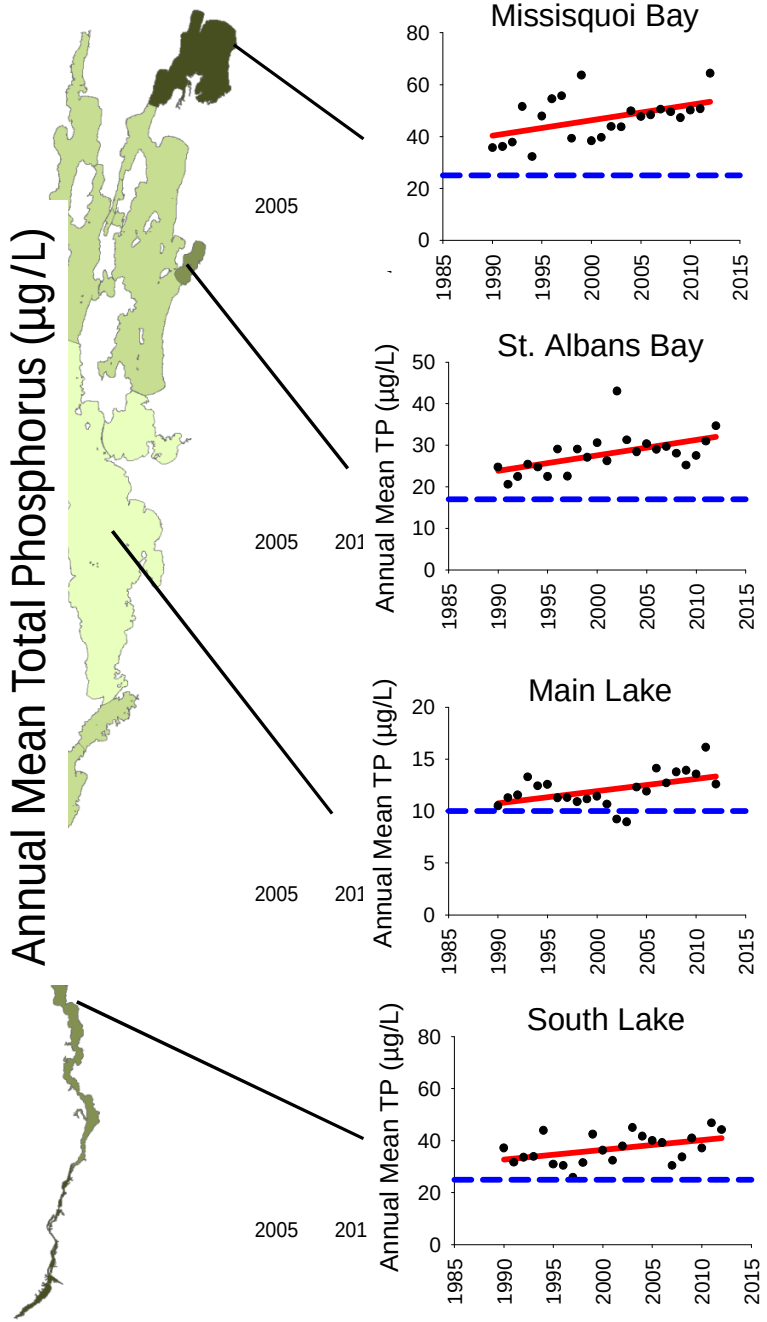
David Mears, Commissioner

January, 2015

VERMONT

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

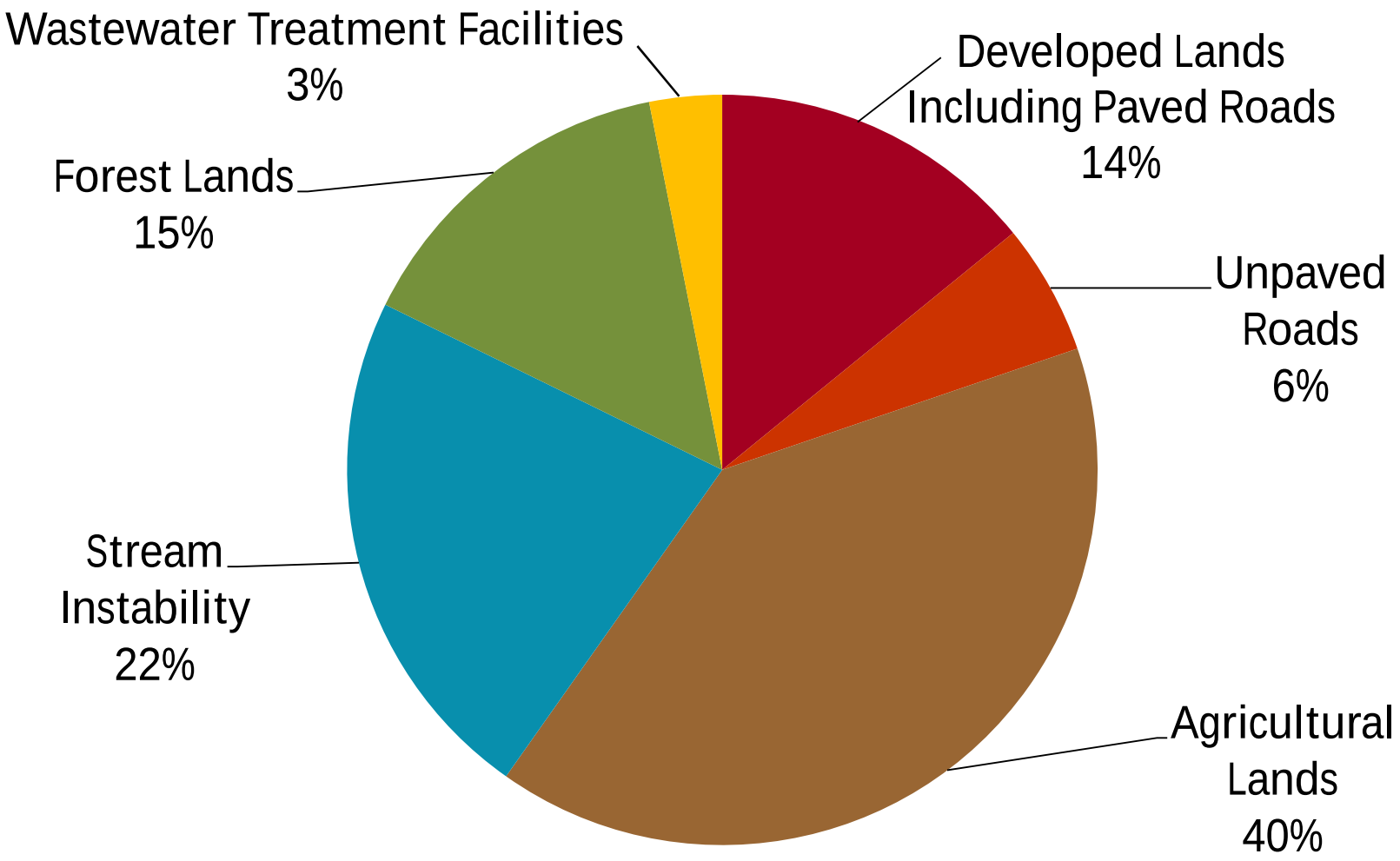
Trends in Lake Champlain Phosphorus Concentrations



Trend line

Water quality standard

Phosphorus Sources in the Vermont Portion of the Lake Champlain Basin

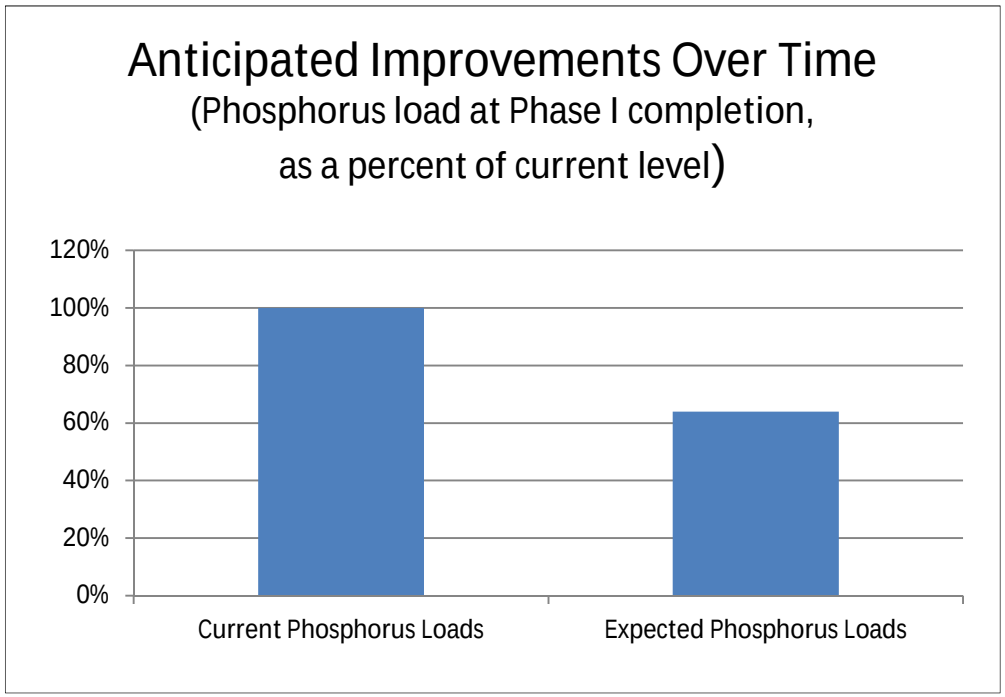


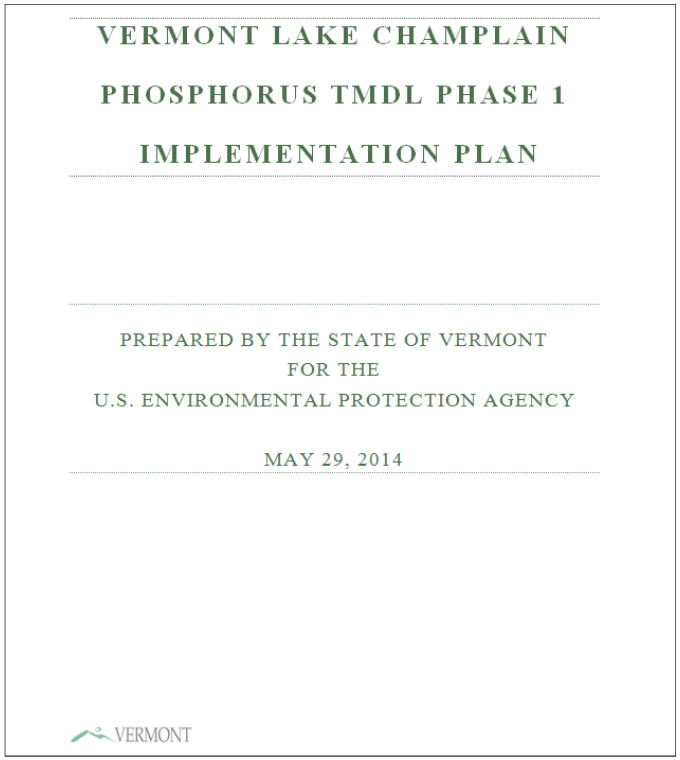
EPA, 2013

Expected Outcomes from the Lake Champlain Phosphorus TMDL Phase I Plan

Summary of Phase I Plan

- Expected to reduce phosphorus loading by 34% over 20 years to meet State Water Quality Standards
- Targets major source areas using cost-effective actions

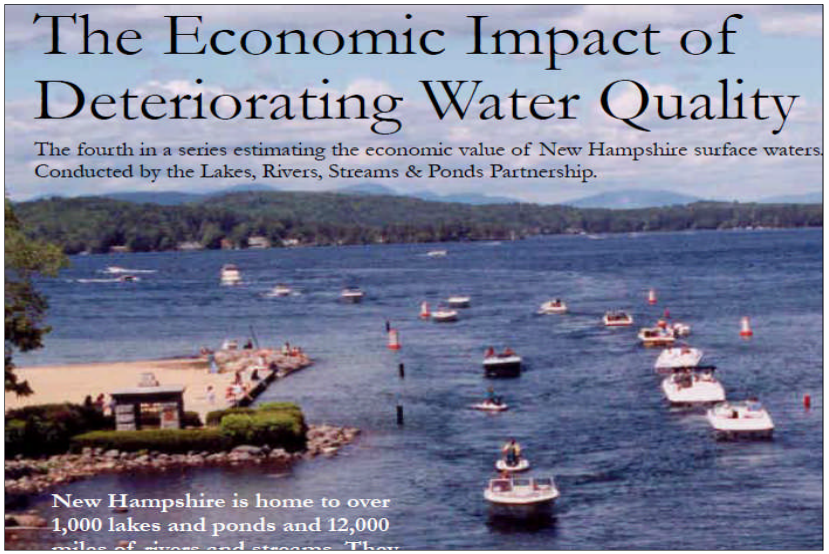




Challenges in Providing Clean Water Statewide

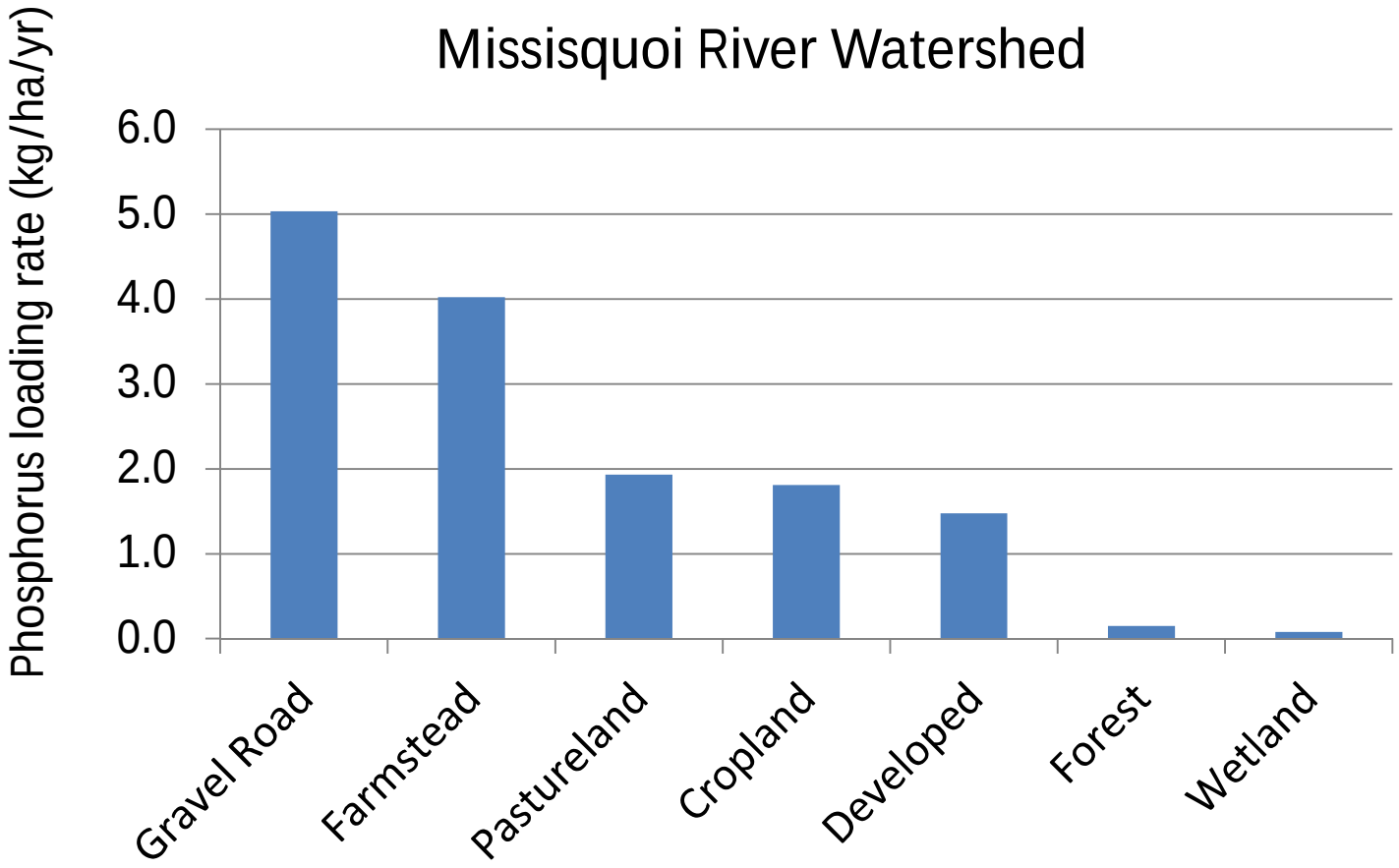
Fundamental Problem: Economic Harm

- The decline in the health of our waters has economic impacts:
  - Loss of uses such as boating, swimming, fishing
  - Decline in natural resource-based tourism
  - Decline in property values
  - Cost of water treatment
  - Cost of reducing the pollution



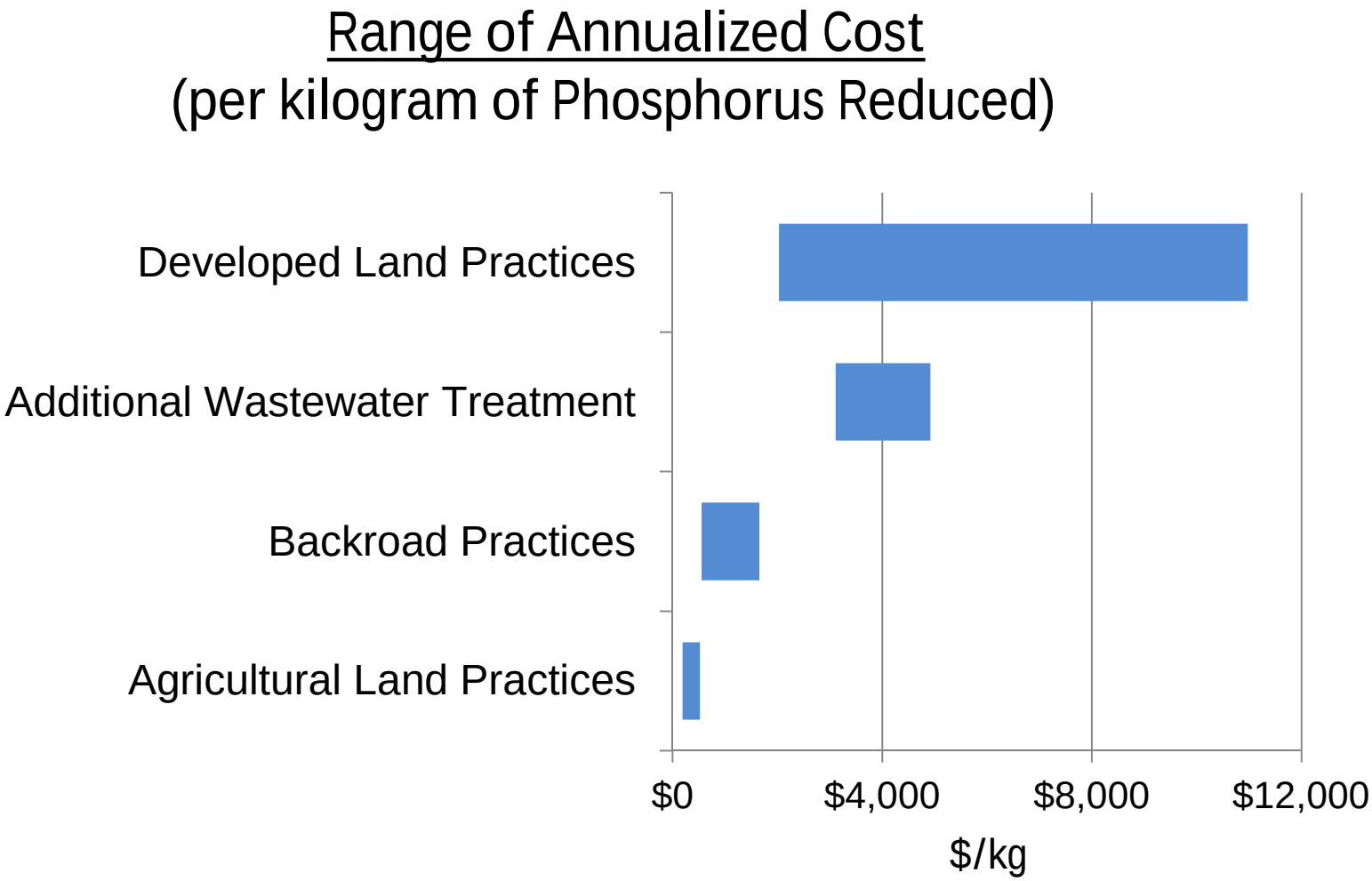
Rock River, Highgate, VT, 2014
Courtesy of MRBA

TMDL Plan's Strategic Focus is based on Relative Ranking of Critical Sources of Phosphorus (per unit of land area)



EPA, 2013

Relative Cost-Effectiveness of Actions by Source



EPA, 2014; VTDEC, 2014

Lake Champlain Phosphorus TMDL
Draft Phase I Implementation Plan

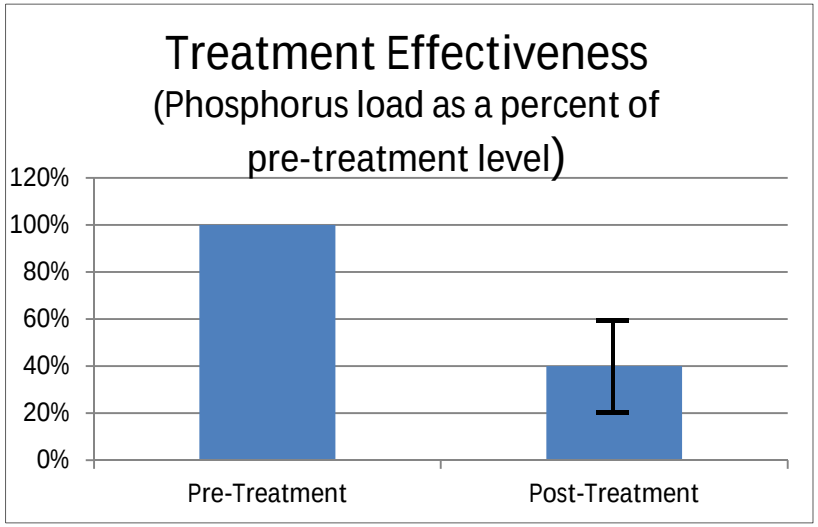
Program Area
Agricultural Programs
Stormwater Management
Rivers Management
Wetlands Management
Lakes Management
Forest Management

Agricultural Programs

<u>Proposed Rule Update: State Accepted Agricultural Practices</u>

Example: Vegetated buffer on Field and Roadside Ditches

- Achieves 40%-80% reduction in Total Phosphorus
- Estimated project cost = $1,350 (3 acres treated)



Runoff draining into ditch

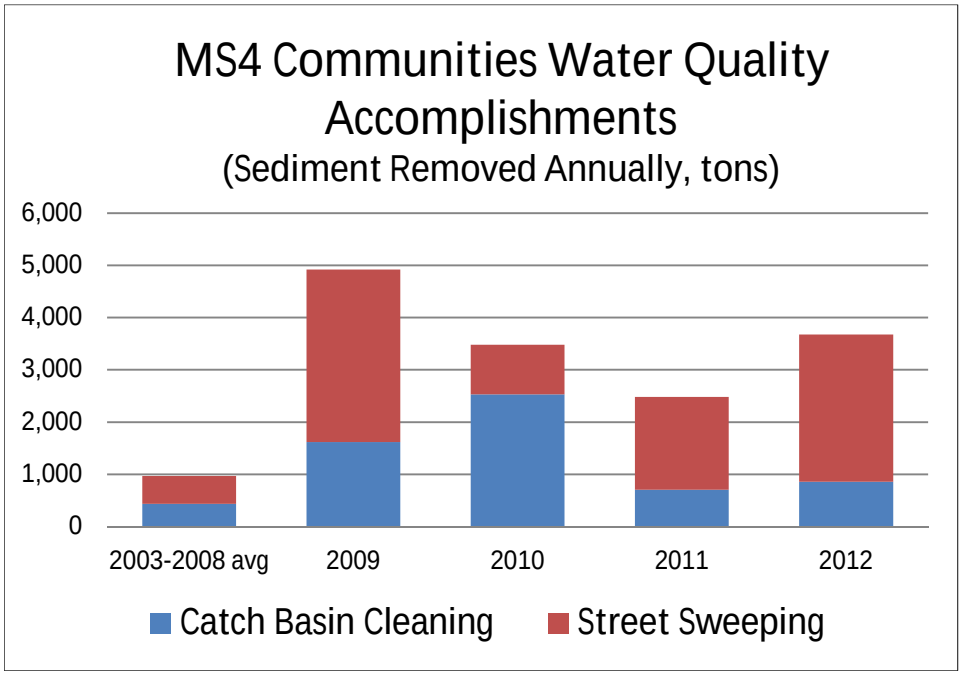
Vegetated buffer along ditch

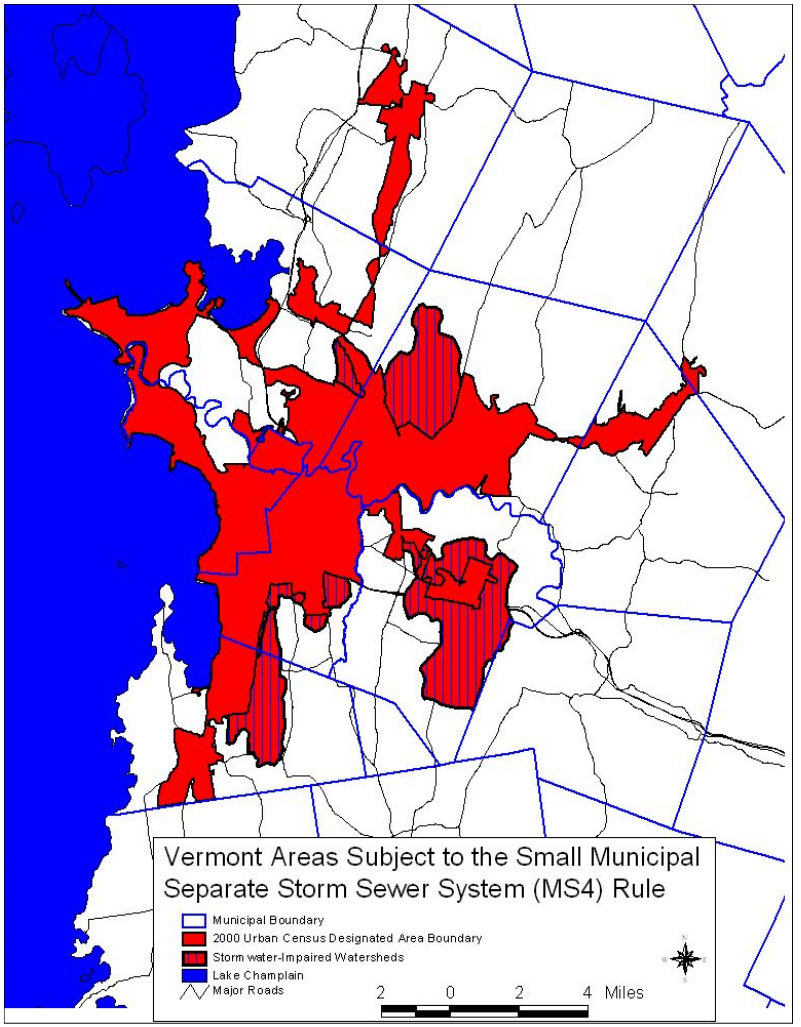
Stormwater Management

Stormwater Runoff - Existing Developed Lands

Municipal Stormwater Management

- 2 actions prevent 2,000-4,000 tons of sediment from reaching State waters annually



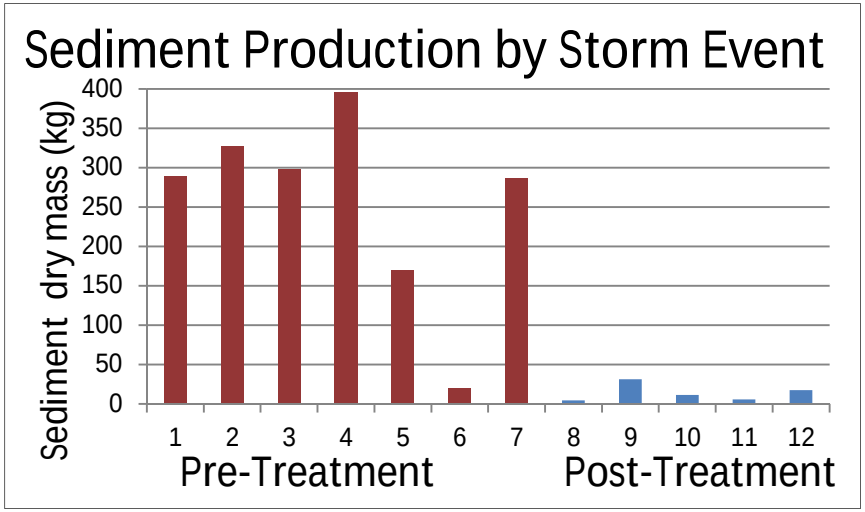


Stormwater Management

Stormwater Runoff - Municipal Roads

Sediment and Erosion Control
Washington County

- UVM Controlled Study found a dramatic reduction in polluted runoff from Best Practices such as rock-lining ditches on steep roads
- Estimated project cost = $3,000 (1,000 linear feet treated)



Wemple, 2013

Eroding roadside ditch

Ditch stabilization saves road and reduces erosion

“Better Roads, Cleaner Waters”

- Reduce concentrated drainage
- Reduce sediment and nutrient pollution
- Reduce impact of road on the land
- Reduce long-term maintenance costs
- Improve local resilience to storm damages

Municipal Roads Stormwater Permit

for existing, new and redeveloped municipal roads

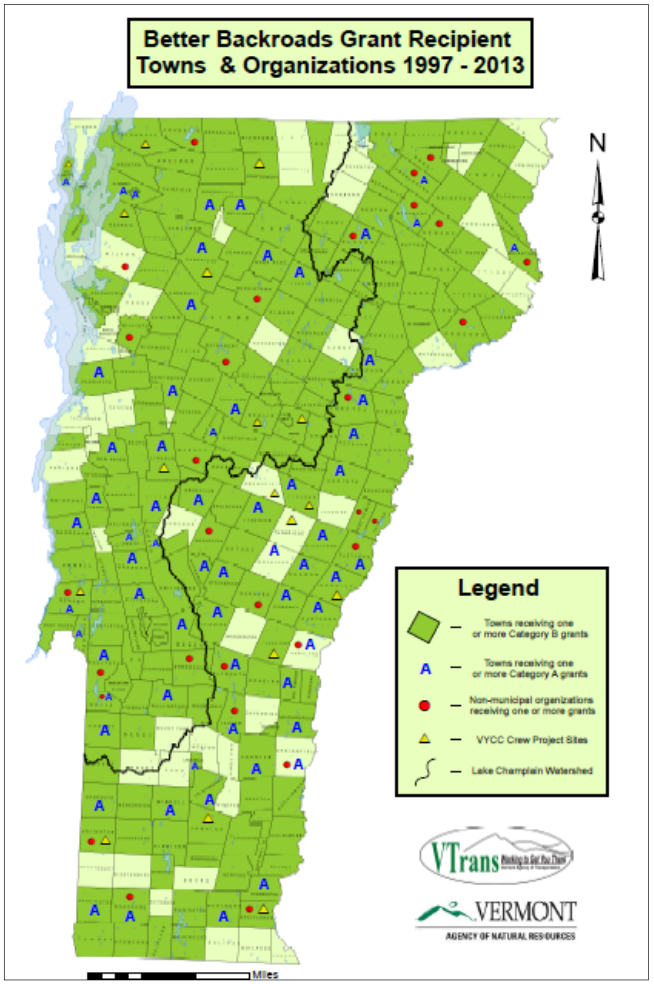
Goal: To stabilize municipal road drainage systems, consistent with Town Road and Bridge Standards

Process:

- Develop permit & standards with public input
- Municipalities develop a customized multi-year plan
- Municipal implementation prioritized by greatest benefit & local transportation capital plan
- Reporting to DEC on implementation
- Full implementation within 20 years

Educational, Technical, and Financial Assistance

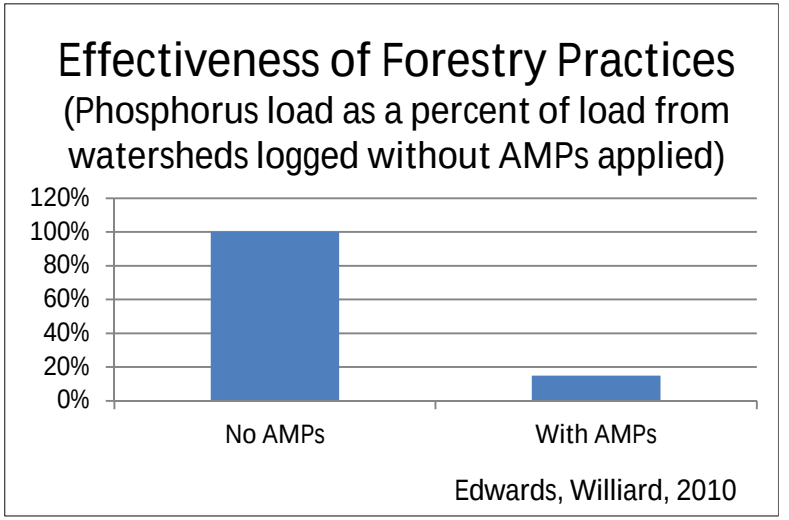
- Vtrans Better Back Roads Program
- Vtrans Local Roads Program
- DEC Ecosystem Restoration Program



Forest Management

Acceptable Management Practices (AMPs)

- Can reduce phosphorus loading by 85%
- 60% of VT forests are subject to AMP compliance or equivalent, as required under Current Use Program and public land management practices
- Estimated project cost = $3,000 (per crossing)



Unmanaged stream crossing at logging site

Temporary skidder bridge

Vermont: A Small State Facing Big Challenges to Implement Plan

State will need to tap into existing & new sources to implement plan