



Vermont Clean Water Initiative: Stormwater and Water Quality Coordination Efforts

To: Senate Committee on Transportation
From: Helen Carr, Vermont DEC
On: March 10, 2022



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

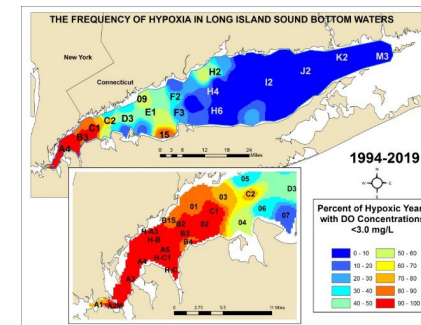
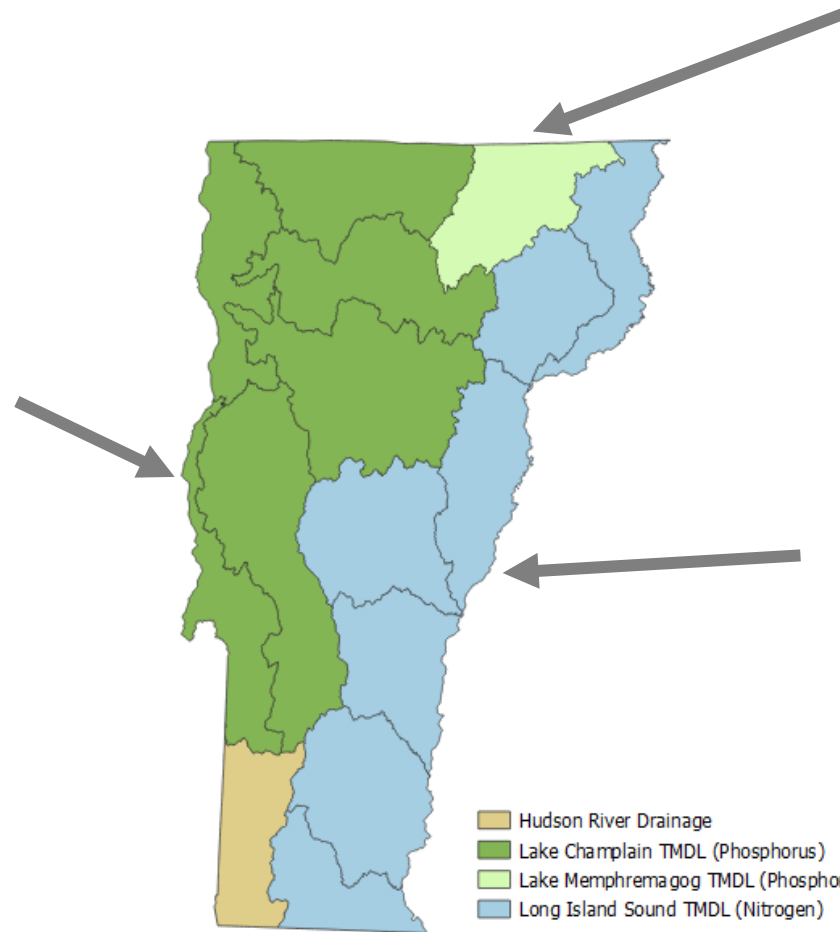
Vermont's Water Quality Goals



Phosphorus Total Maximum Daily Loads for Vermont Segments of Lake Champlain



Lake Memphremagog Phosphorus Total Maximum Daily Load



Nitrogen TMDL for Dissolved Oxygen in Long Island Sound

Fund



Prioritize



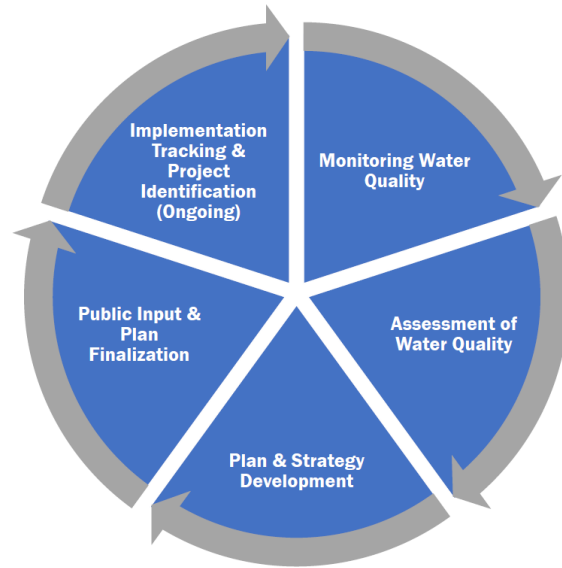
Implement



Report



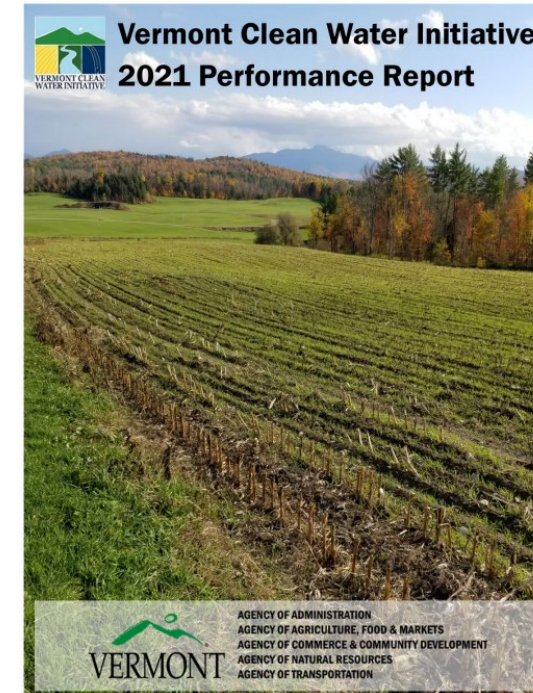
Five-Year Tactical Basin Planning Cycle



Tactical Basin Planning and sector-based assessments prioritize projects

Land Use	Clean Water Project Objectives and Example Project Images
 AGRICULTURE	Addresses runoff and soil erosion from farm production areas and farm fields 
 STORMWATER	Addresses stormwater runoff from developed lands, such as parking lots, sidewalks, and rooftops 
 NATURAL RESOURCES	Restores functions of "natural infrastructure"—river channels, floodplains, lakeshores, and wetlands 
 ROADS	Addresses stormwater runoff from roads 
 WASTEWATER	Decreases nutrients (phosphorus and nitrogen) through enhanced wastewater treatment and addresses aging infrastructure 

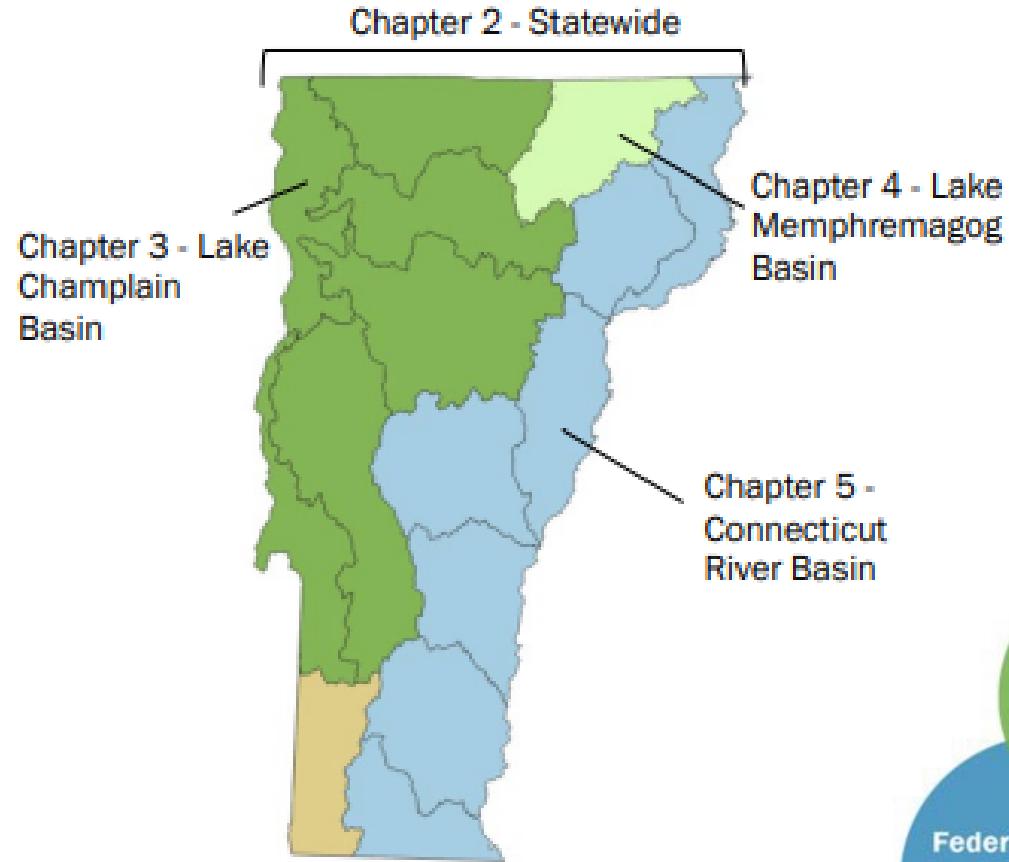
State agencies fund clean water projects across land use sectors; projects compelled by regulatory programs



State agencies report clean water project investments and results

Report Purpose and Scope

- State Fiscal Year 2016 - 2021
- Summarizes Vermont's clean water efforts and demonstrate results of investments, educational programs, and regulatory programs.
- Demonstrates how state funding programs, federal funding programs, and regulatory programs are contributing to progress towards achieving the Lake Champlain and Lake Memphremagog TMDLs.



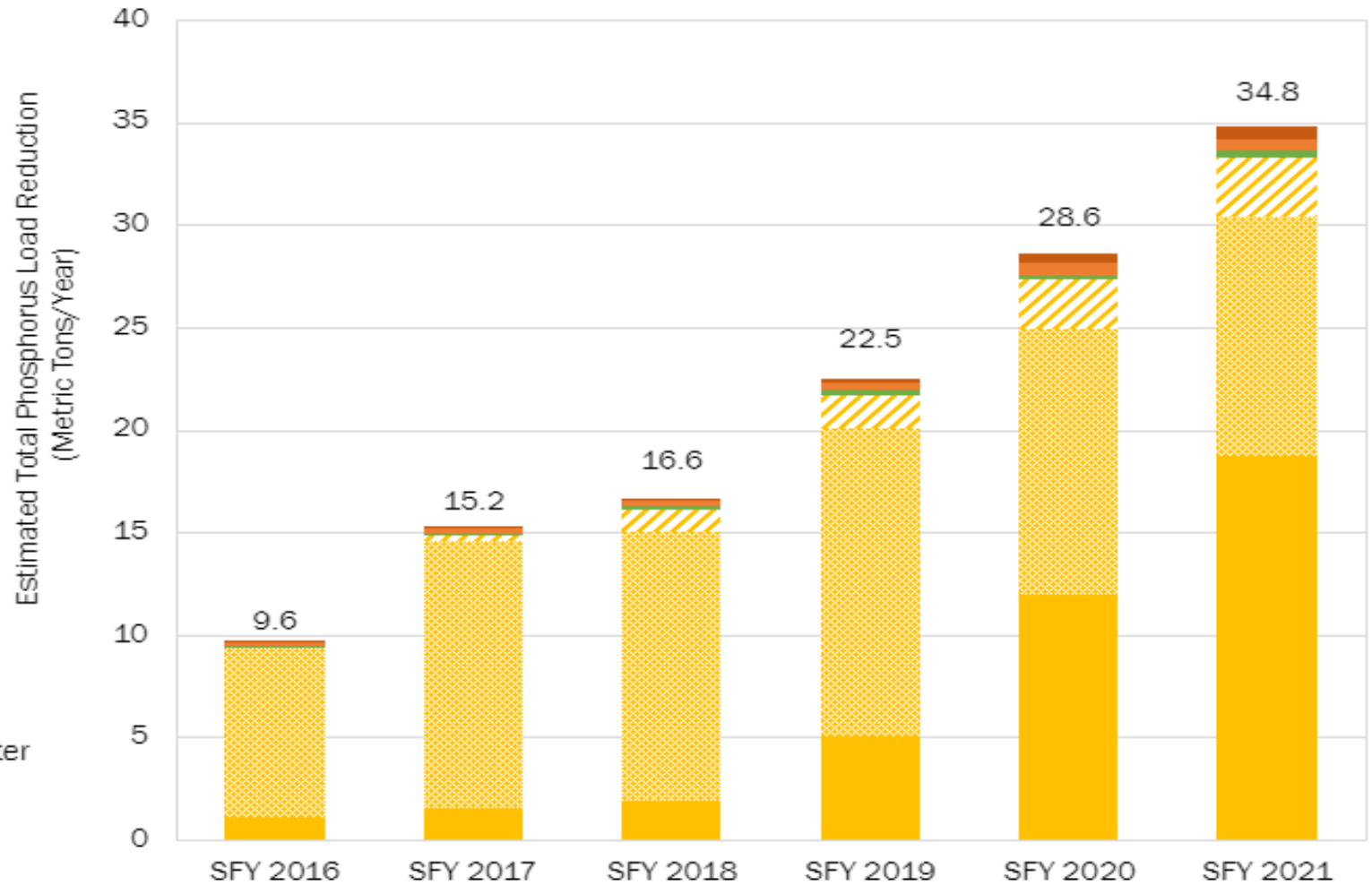
Statewide Outputs of Stormwater and Road Remediation Projects

Project Output Measures	2016	2017	2018	2019	2020	2021	Total
Acres of existing impervious surface treated by stormwater treatment practices	<1	87	34	135	178	9	442
Miles of municipal road drainage and erosion control improvements	1	12	68	88	43	48	260
Number of municipal road drainage and stream culverts replaced	-	104	134	245	119	182	784
Cubic yards of Class 4 road gully erosion remediated	-	-	260	33	-	5	298
Cubic yards of catch basin outlet erosion remediated	-	-	1	784	-	24	809
Acres stabilized through use of seeding/mulching equipment per year	-	-	19	98	248	166	531
Regulatory Measures	2016	2017	2018	2019	2020	2021	Total
Acres of existing impervious surface treated by stormwater treatment practices under stormwater permits	7	34	97	153	90	22	404
Acres of new impervious surface treated by stormwater treatment practices under stormwater permits	-	-	249	237	142	62	691
Hydrologically connected municipal road miles inventoried ²²	11	799	1,655	1,462	1,183	727	5,836
Hydrologically connected municipal road miles identified as requiring water quality improvements	5	267	675	561	609	355	2,471

Estimated Total Phosphorus Load Reductions to Lake Champlain

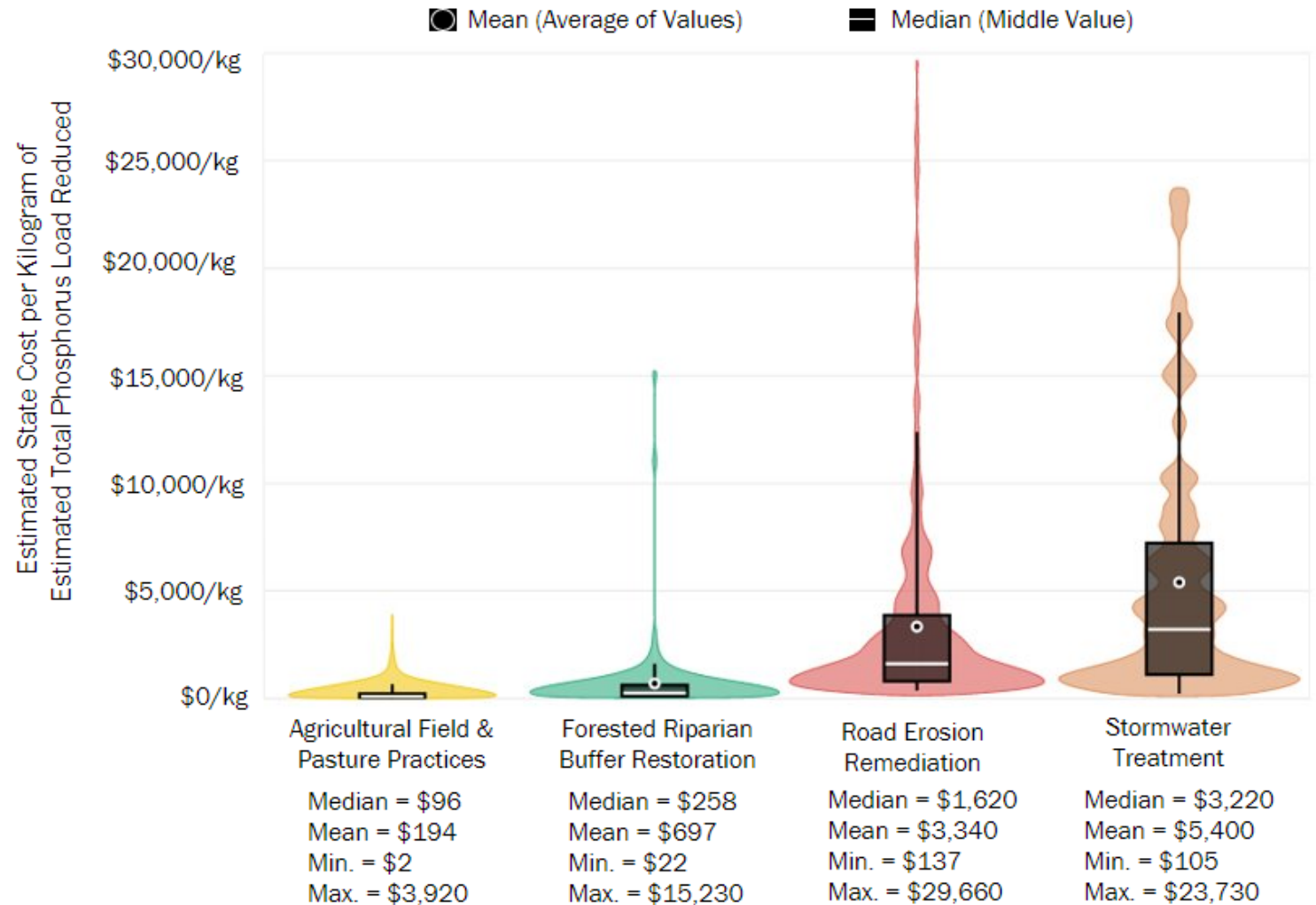
- An estimated 34.8 metric tons (~77,000 pounds) of total phosphorus loading reduced as of SFY 2021
- Most phosphorus reductions result from agricultural practices funded through US Department of Agriculture Natural Resources Conservation Service (USDA NRCS)

- State-Funded & Regulatory Roads
- State-Funded, Federally Funded, & Regulatory Stormwater
- State & Federally Funded Natural Resources
- ▨ Regulatory Agriculture (Production Area Compliance)
- ▨ Federally Funded Agriculture
- State-Funded Agriculture



State Cost Effectiveness

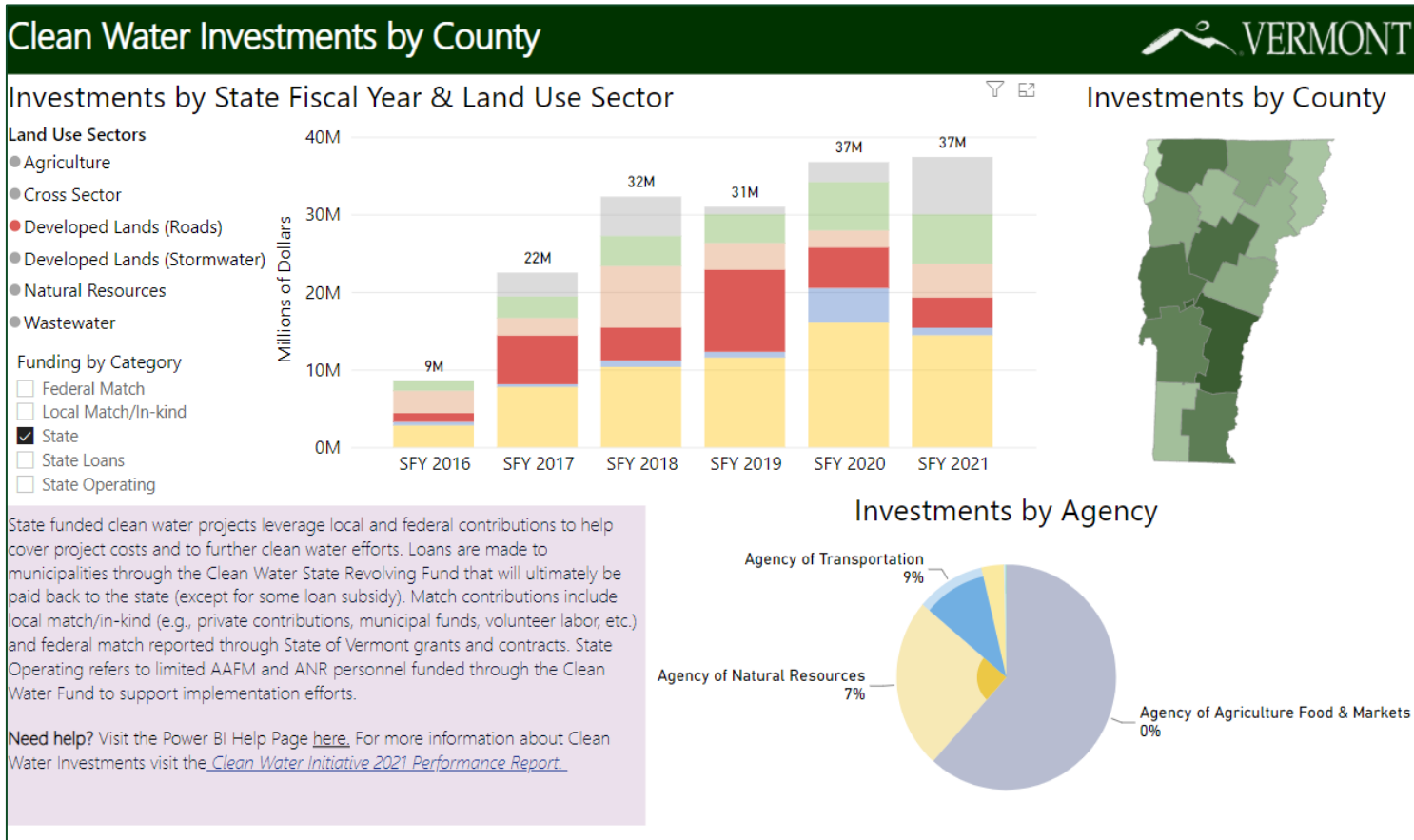
- Cost effectiveness is the state cost per kilogram of estimated total phosphorus load reduced over the project lifespan
- Agricultural field and pasture practices are the most cost effective
- Stormwater treatment is relatively the most expensive of these categories



Learn More

Clean Water Interactive Dashboard

Shown filtered by Road Projects



Clean Water Projects Explorer

Shown searching state-funded road projects

