

Introducing Act 64 - the Vermont Clean Water Act - and Vermont's Clean Water Goals

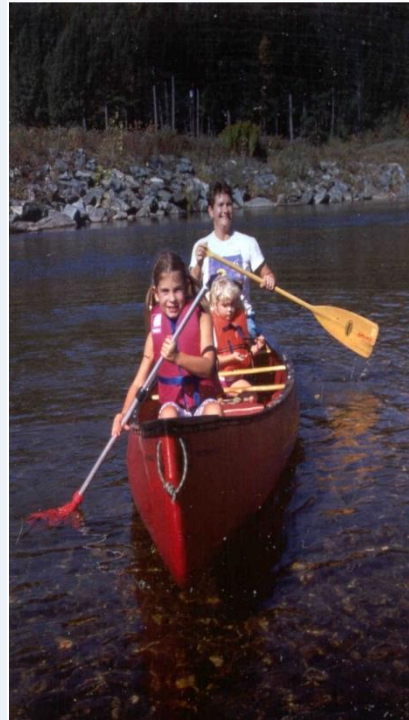


Vermont Department of Environmental Conservation
February 8, 2016



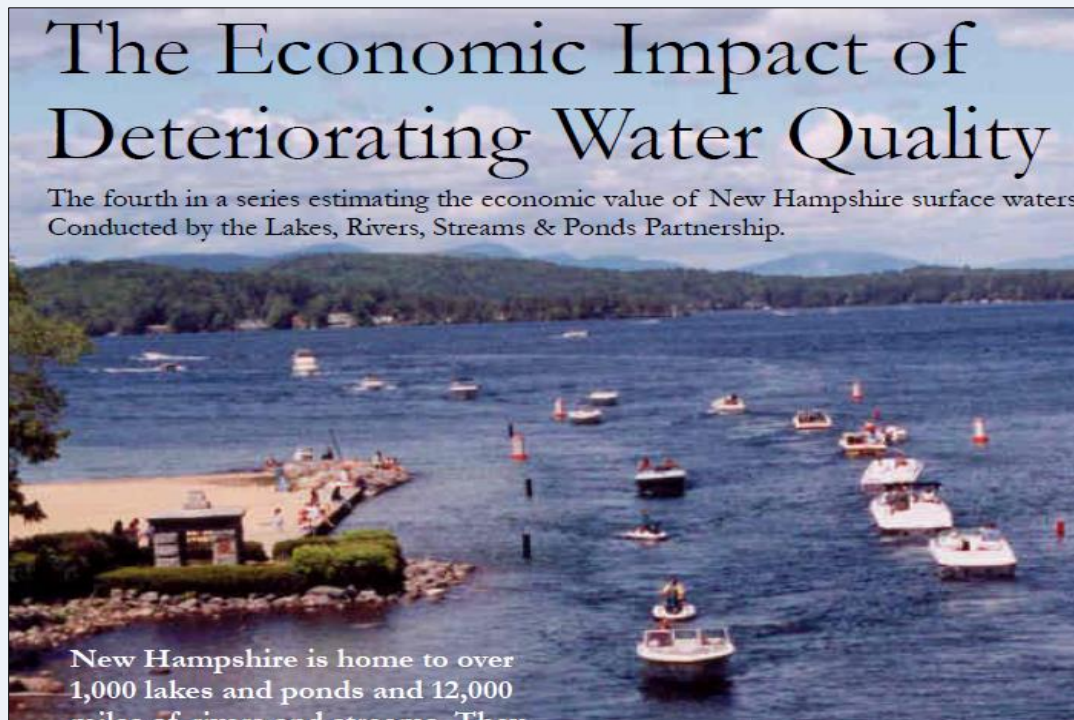
Clean Waters are a Critical Community Asset

- Protect health;
- Preserve the natural beauty;
- Enhance the ecological values of our waters;
- Are an essential legacy for Vermont's Future Generations



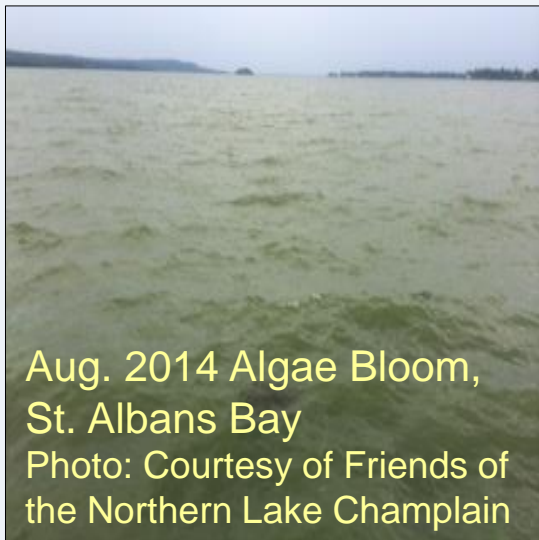
The decline in the health of our waters has quality of life and economic impacts

- 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



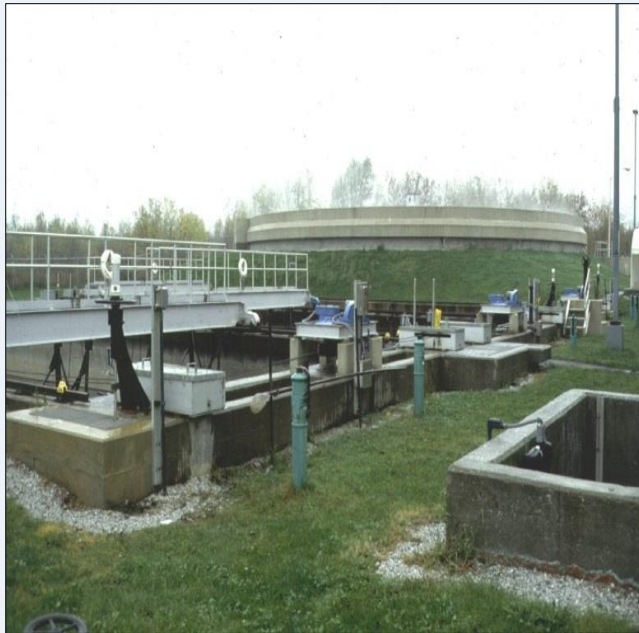
Water Pollution

Water Pollution is the discharge of waste, litter, chemicals, sediment, heat, or other materials into water, contaminating or degrading the quality of that water for other users



Water Pollution – Point Sources

- Examples: wastewater or industrial discharges



Illegal discharge of untreated sewage, dyed green for the assessment

Water Pollution – Nonpoint Sources

- Examples: Runoff from developed areas, agricultural lands, logging operations and construction sites
- Leading cause of water quality degradation



Land uses can influence the generation of non-point sources of water pollution



With consequences locally and downstream



The best time to plant a tree
is 20 years ago.

The second best time is now.

-- Chinese Proverb

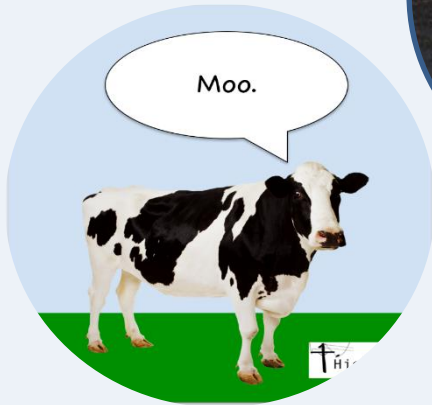


Vermont Clean Water Act (2015, Act 64)

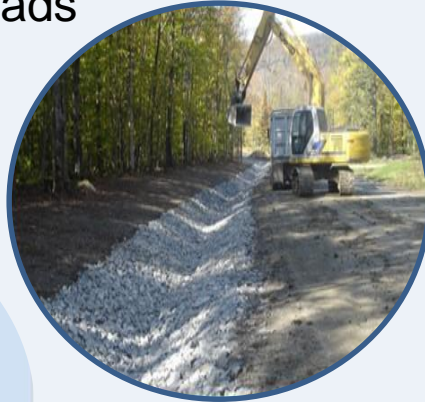
- Supports clean water needs statewide
- Supports phosphorus pollution reductions in Lake Champlain, as required by the Environmental Protection Agency

“All in” approach

Agriculture



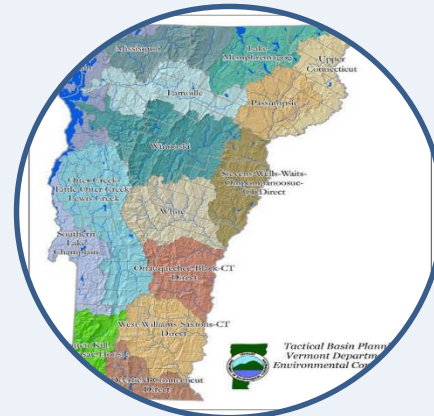
Roads



Developed
Land \geq 3 acres



Forestry



Tactical Basin
Planning

Stormwater Management - Roads



Eroding roadside ditch



Storm-damaged gravel road

Stormwater Management – Roads (continued)

Goal: Reduce runoff and erosion associated with the State and municipal road network

- Bring critical erosion areas along road drainage systems and other sources of road runoff and erosion up to basic maintenance standards

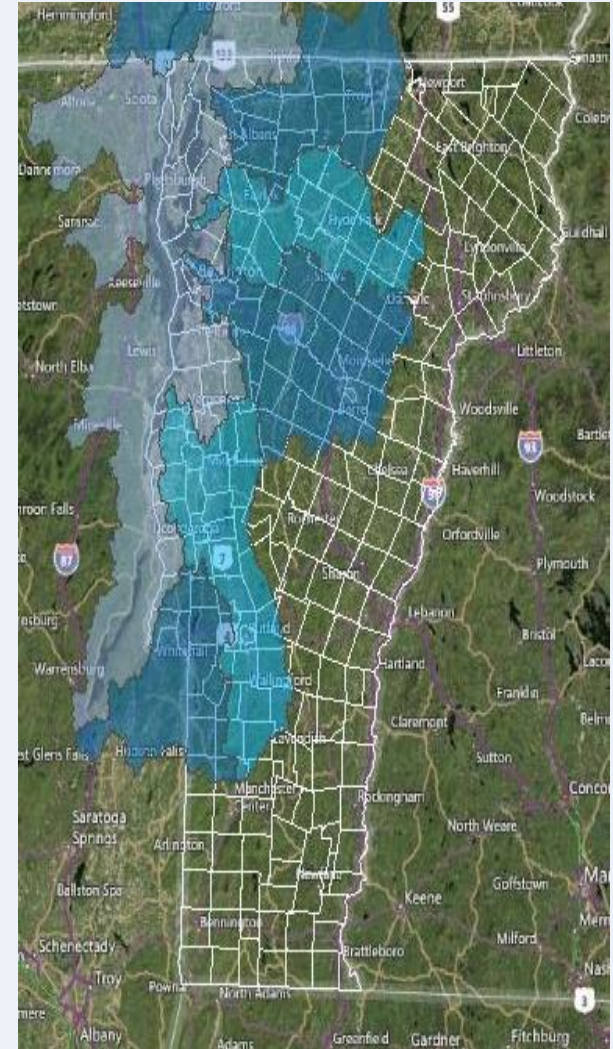


- Benefits include reduced sediment and nutrient pollution; improved resilience to storm damages; lower long-term maintenance costs

Stormwater Management – Roads (continued)

Time, Flexibility, Support

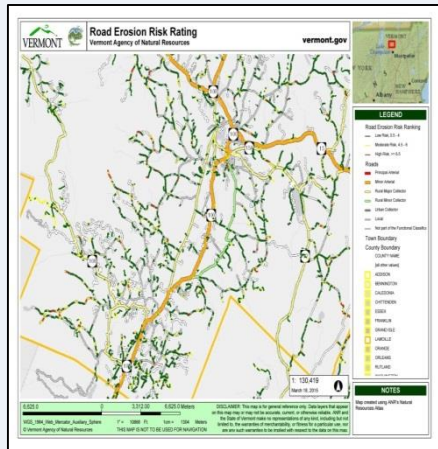
- Municipal road general permit will go into effect at the end of 2017
- All municipalities must develop road stormwater management plan by 2021
- Applies to paved and unpaved roads
- 20-year implementation period



Stormwater Management – Roads (continued)

Municipal Road Stormwater Management Plan

Inventory



Prioritize



Implement



Support for Roads- outreach, technical assistance and funding



VTrans: Local Roads Program, Better Backroads grants, VTrans District staff

DEC: Various programs with Watershed Management Division



Partners: Regional planning commissions, Watershed groups, natural resources conservation districts

Stormwater Management – Roads (continued)

State roads will also need to comply with Act 64

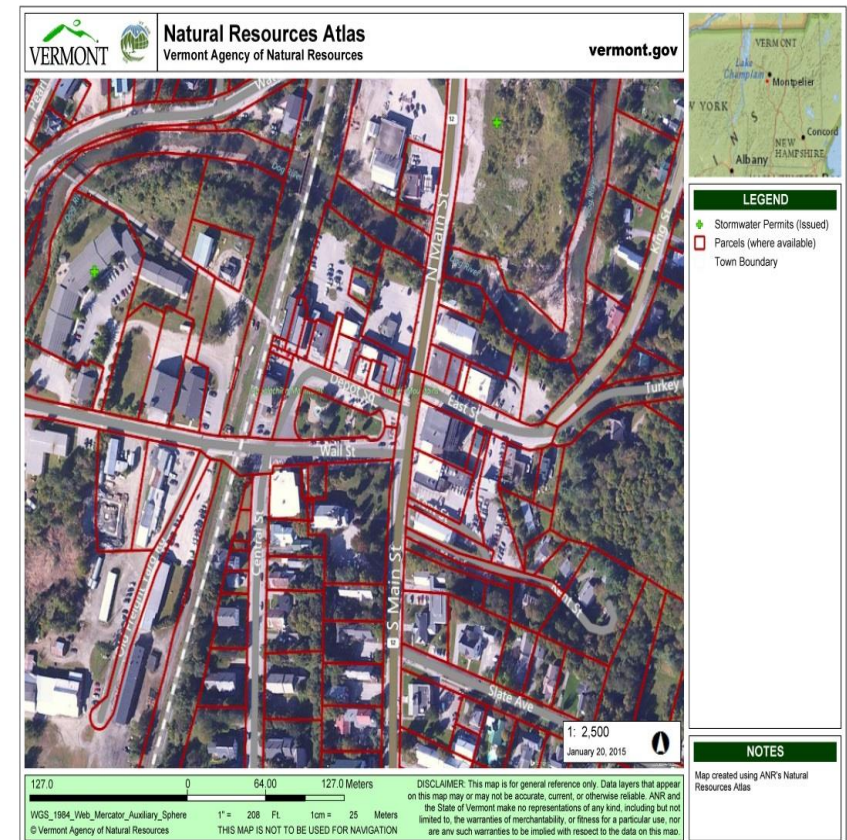
- Entire state transportation network and facilities
- Standards will be issued in spring 2016
- Will require retrofits of existing state road systems



Act 64 and Existing Development

Goal: Treat stormwater runoff from existing impervious surfaces

- Current target: Parcels with ≥ 3 acres of impervious surface
- Require stormwater retrofits of existing impervious surface
- Standards developed as part of permit development process



Act 64 and Existing Development (continued)

- Requires ANR to adopt a general permit by Jan. 2018
- Requires ANR to develop a schedule to require:
 - Permit coverage in the Champlain Basin no later than 2023
 - Permit coverage in the rest of the State no later than 2028
- MS4s will need to develop phosphorus control plans

Agricultural Water Quality

- Accepted Agricultural Practices (AAPs), to be referred to as “required agricultural practices (RAPs), are to be revised by July 1, 2006
- “Small farms” are to be defined by July 2016
- Increased financial aid and increased enforcement



Revisions to RAPs

- Increases vegetative setback standard for:
 - Surface waters – 25 feet
 - Ditches – 10 feet
- Require standards for:
 - Livestock exclusion from waterways
 - Soil conservation such as cover cropping in critical areas
 - New standards for tile drainage by January, 2018



Planning for Clean Water

- Tactical Plans are the implementation vehicle for clean water activities and TMDLs
- 15 Planning Basins
- 5 Planners
- Plans revisited every 5 years
- Plan Implementation table updated continuously
- RPCs are assisting DEC in the basin planning process

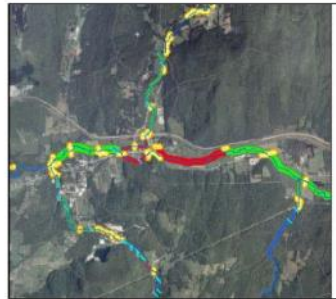


Tactical Basin Plans Integrate: Monitoring & Assessment Results

Water Quality Monitoring

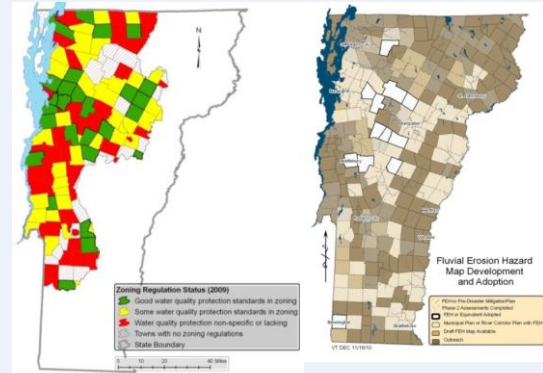
Macroinvertebrate Site Summary										
Location:	Rice Brook					Location ID:	502096			
Town:	Warren					Bio Site ID:	494042080004			
Description:	Located below WWTF, and Access Road about 100m.					WBID:	VT09-20			
Date	Sample Method	Density	Richness	PMA Q	BI	Oligo.	EPT / EPT + C	PPCS F	Community Assessment	
10/14/1996	KN	46	16.5	10.5	60.9	1.45	6.34	0.92	21.6	
8/29/1998	KN	68	19.0	9.0	75.3	3.41	0.00	0.63	47.7	
5/28/1999	KN	40	16.0	9.0	70.0	2.29	5.00	0.91	47.5	Poor
9/27/1999	KN	47	13.0	9.0	68.8	1.16	4.26	0.95	30.4	Poor
9/18/1999	KN	107	19.0	11.0	66.9	2.14	3.74	0.92	43.7	Poor
9/10/1999	KN	72	13.0	8.0	58.4	2.90	31.94	0.88	47.8	Poor
9/9/1994	KN	98	17.0	11.0	60.8	2.56	11.22	0.97	37.9	Poor
9/7/1995	KN	141	16.0	10.0	72.0	2.10	4.97	0.81	47.3	Poor
9/1/1996	KN	116	22.0	11.0	71.1	1.55	0.86	0.81	41.1	Poor
9/8/1997	KN	120	23.0	12.0	63.8	1.45	14.17	0.87	51.4	F-Poor
10/18/1998	KN	82	18.0	9.0	56.4	3.15	3.66	0.98	33.7	
10/17/1999	KN	177	25.7	14.7	67.1	2.04	3.44	0.96	51.3	Fair
9/10/2000	KN	327	22.0	11.0	50.1	0.93	0.00	0.87	41.6	Fair
9/3/2001	KN	209	27.0	17.0	73.7	2.22	1.12	0.68	55.2	Fair
9/2/2002	KN	229	13.0	11.0	49.5	0.48	0.00	0.00	36.2	
9/2/2002	KN	190	20.0	11.0	61.6	2.18	1.05	0.62	57.4	Fair
9/7/2003	KN	465	27.0	12.0	55.3	1.72	0.65	0.74	44.4	Fair
9/3/2004	KN	522	36.0	18.0	61.6	1.55	9.00	0.84	48.3	Good
8/12/2005	KN	350	34.5	17.5	56.1	2.76	4.08	0.60	61.3	Good
9/5/2006	KN	236	29.0	18.0	66.0	2.87	2.97	0.65	43.5	Fair
9/4/2007	KN	374	35.0	17.0	73.1	1.87	2.14	0.77	52.0	Good
9/3/2008	KN	253	36.0	18.0	77.1	3.20	12.26	0.72	48.9	G-Fair
9/5/2008	KN	297	31.0	19.0	70.0	2.16	5.39	0.92	42.9	G-Fair
9/26/2009	KN	277	40.0	22.0	73.7	2.69	9.75	0.70	55.6	G-Fair
9/26/2009	KN	305	30.0	20.0	69.4	1.80	0.61	0.84	43.5	Good
8/27/2011	KN	365	34.0	19.0	76.1	3.09	9.32	0.66	50.1	Good

Stream Geomorphic Assessment



Existing

Town Zoning and FEH

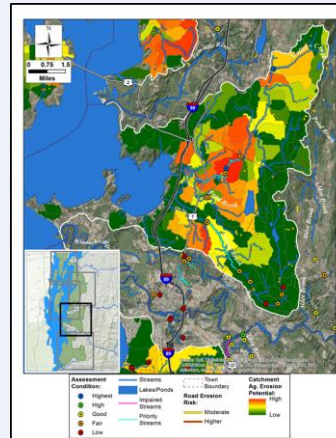


Stormwater Master Plans

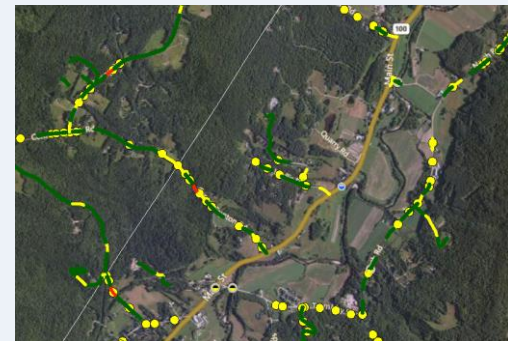


Figure 4. Subwatershed drawing to a culvert at the southeast corner of the Fountains Door and Window business at the corner of Rt. 78 and Brooklyn St.

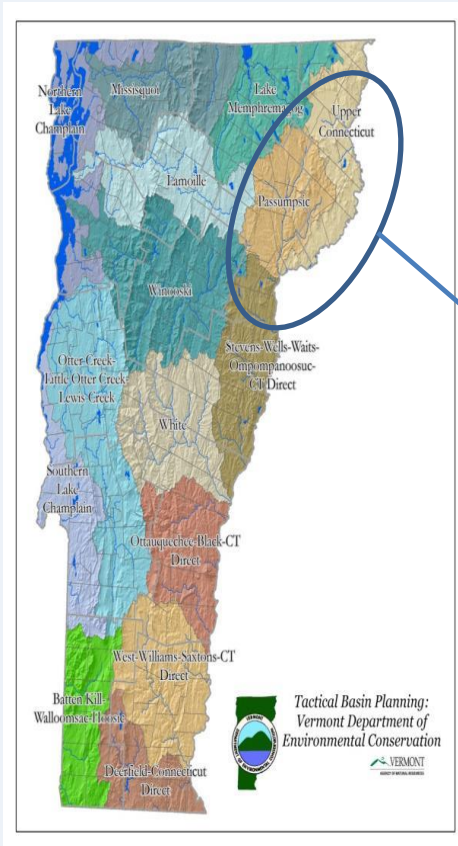
Agricultural Assessments



Road Inventory and Erosion Risk



Tactical Basin Plans and their Implementation Tables: Implementation Roadmaps for Clean Water Restoration Activities



Implementation for TMDLs and target waters via Tactical Basin Planning

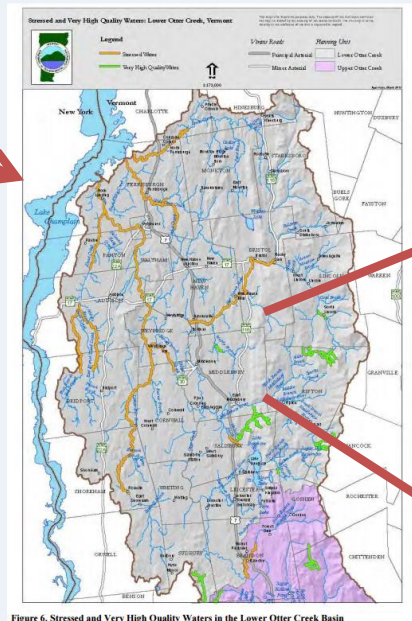
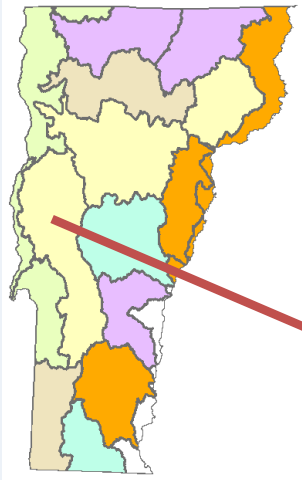


Figure 6. Stressed and Very High Quality Waters in the Lower Otter Creek Basin



Objective: Manage river corridors to increase river bank and channel stability, protecting water quality, land, and infrastructure

River Corridors						
X		18. Based on geomorphic assessments of the Otter Creek, select riparian restoration projects have been identified and prioritized to restore stream equilibrium and minimize erosion. Using geomorphic-based solutions, to the greatest extent possible, restore sections of major tributaries identified in stream geomorphic assessments as being unstable. Promote passive restoration principles and corridor/floodplain avoidance where appropriate.	ANR - RMP, towns, watershed organizations	Ongoing	Ecosystem Restoration Funds	See Appendix E for highest priority corridor plan recommendations for specific tributary rivers and streams in the basin
X		19. Expand land use practices and programs (Best Management Practices and Accepted Agricultural Practices) that provide a greater emphasis on riparian corridor restoration and protection activities. Encourage stream channel adjustment processes towards a stable regime and improve riparian buffers.	AAFM, ANR	Ongoing	Existing staff and budget resources	Throughout basin Neshobe River, New Haven River, and Little Otter Creek are specifically targeted during this implementation cycle

Otter Creek Basin Plan

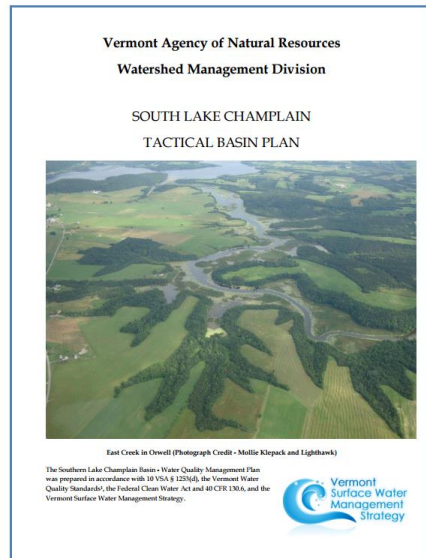
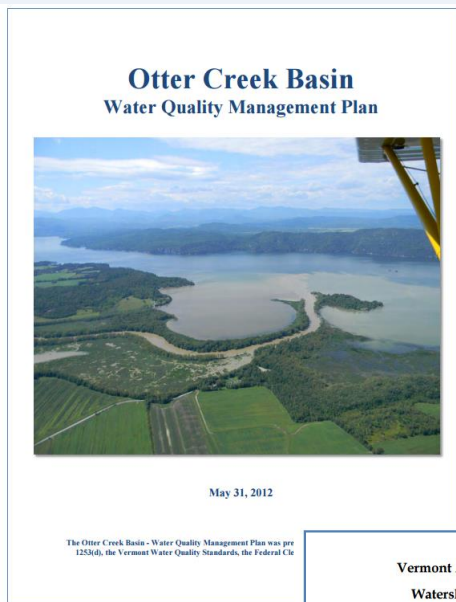
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X		20. Conduct detailed river geomorphic assessments and corridor planning on priority sub-basins in the Otter Creek watershed	ANR - RMP	Ongoing	Ecosystem Restoration Funds	Priority sub-basins include the Lewis Creek (Pond Brook) and Cold River in 2012
X		21. Use the assessment data to 1) identify opportunities for projects that will increase river stability, 2) evaluate landowner-proposed channel management activities, and 3) target related local, state and federal programs to increase river stability	ANR - RMP, NRCS, NRCD's	Ongoing	Existing staff and budget resources	See Appendix E for highest priority corridor plan recommendations for specific tributary rivers and streams in the basin
X		22. Work with willing landowners, municipalities, regional/watershed conservation organizations, and others to design and implement river corridor protection projects consistent with increasing overall river stability	ANR, NRCD's, watershed organizations	Ongoing	Ecosystem Restoration Funds	Throughout basin See Appendix E for highest priority corridor plan recommendations for specific tributary rivers and streams in the basin
X		23. Provide enhanced incentives and resources for municipalities to permanently protect riparian corridors from new development and to restore existing corridors through municipal land use ordinances and conservation easements	ANR, RPC's, VRC	Ongoing, where there is receptivity	Ecosystem Restoration Funds, conservation easements	See Appendix E for highest priority corridor plan recommendations for specific tributary rivers and streams in the basin
X		24. Establish vegetated buffers and/or filter strips along rivers, streams, and lake shorelines	ANR, NRCD's, towns	Ongoing	Ecosystem Restoration Funds, SEP	Throughout basin See Corridor Plan recommendations
X		25. Modify existing state and federal programs, or create new ones, to more effectively support riparian corridor protection and restoration, e.g., impacts of ditching and tile drainage	ANR, AAFM, EPA, VT Legislature	Ongoing	Ecosystem Restoration Funds, conservation easements, AAFM-BMPs	See Appendix E for highest priority corridor plan recommendations for specific tributary rivers and streams in the basin

Tactical Plans and Municipalities

- River Corridor plan priorities- crossings, floodplain restoration, river corridor protection
- Flood Resilience and Hazard Mitigation Planning
- Stormwater Infrastructure reports and Master Plans
- Road erosion inventories and town priorities

Status of Addison County Tactical Plans



- South Lake Champlain 2014, update with Phase II actions 2017
- Otter Creek 2012, update with Phase II actions 2019
- Ethan Swift, Watershed Coordinator.

Vermont Clean Water Initiative Funding



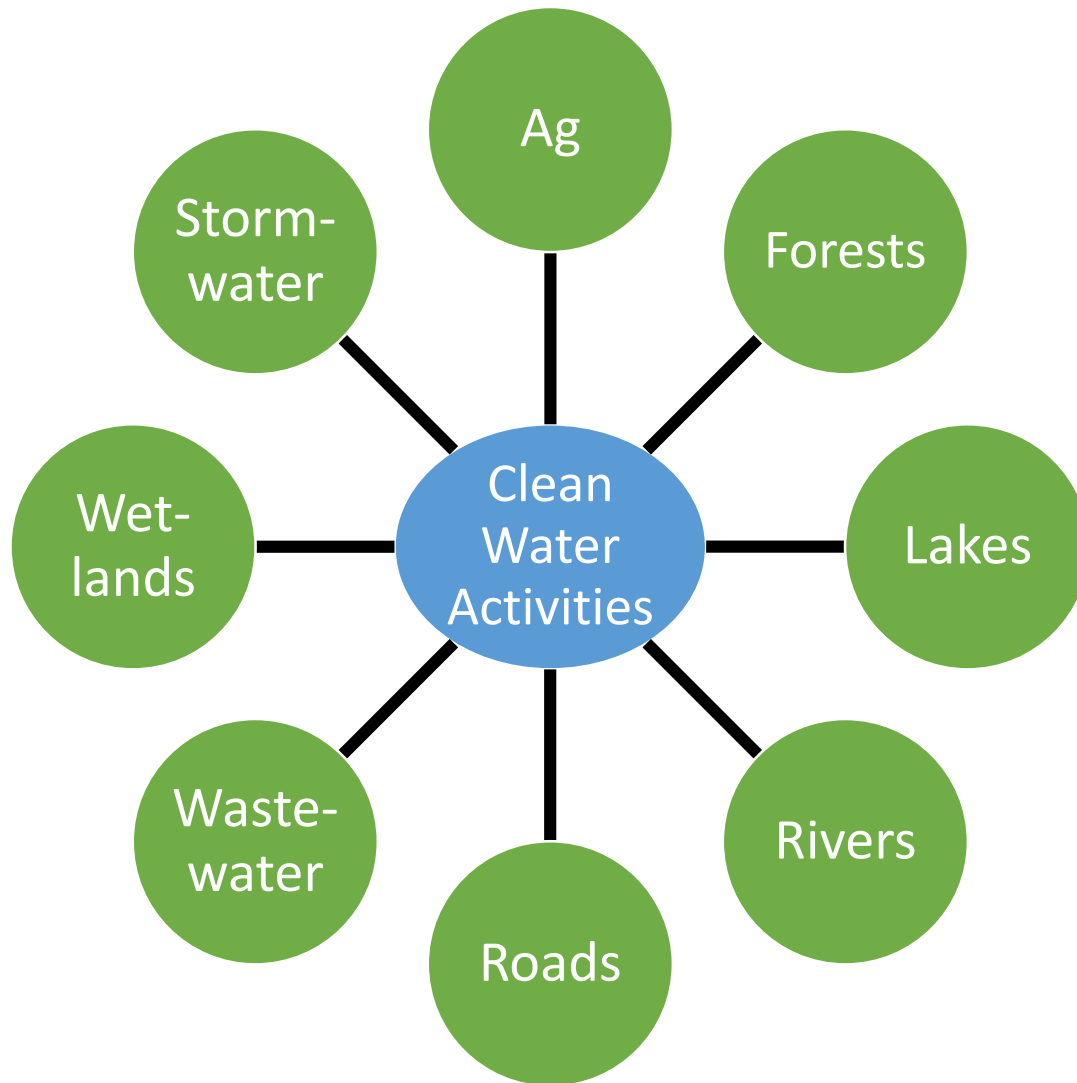
Revenue Source	FY16 Budget
Various AAFM fees	\$621,000
Capital Bill – Agriculture Best Management Practices (BMPs) Program (statewide)	\$1.4M
Capital Bill – Ecosystem Restoration Grants (statewide)	\$3.75M
Capital Bill – Clean Water and Drinking Water State Revolving Fund (SRF) Match (statewide)	~\$1.3M
Transportation Bill – Municipal Mitigation Grants (includes Better Back Roads Grants, statewide)	\$650,000
DEC Clean Water Permit Fees (statewide)	~\$2.3M
NEW: Clean Water Fund	\$5.3M
VTrans Stormwater Compliance	~\$2.1M

Act 64 and the Clean Water Fund

0.2% increase on property transfer tax for FY16, FY17, FY18

Recommendation by Sector	FY16	FY17	Total Administered By Sector
Agriculture	\$670,000	\$1,975,000	\$2,650,000
Municipal (roads, stormwater)	\$800,000	\$3,200,000	\$4,000,000
Municipal Wastewater	--	\$500,000	\$500,000
Natural Resources	--	\$1,150,000	\$1,150,000
All Sectors – LIDAR Mapping	\$430,000	--	\$430,000
All Sectors – Partner Support	\$100,000	\$1,085,000	\$1,185,000
Total Need	\$2,005,000	\$8,395,000	\$10,400,000

Tracking Clean Water Activities Statewide



Clean Water Investment & Performance Report

Financial Outcomes

Social Outcomes

Performance Outcomes

Environmental Outcomes

Steps for Clean Water Problem Solving: Getting your ducks in a row...

The Steps	Description
Step 0	Definition: What's the problem?
Step I	Assessment/Planning: What can we do?
Step II	Design: What should we do?
Step III	Implementation: Let's do it!
Step IV	Repayment (for loans)



Step 0: Definition

What is the problem?

- Chronic road erosion problems
- Untreated stormwater runoff
- Order from ANR: CSOs, Illicit Discharges
- Poor Water Quality
- Cost of repairs
- Financial and technical support
- Flood risk



Step 1:

Assessment/Planning: What can we do?

Examples of assessment information

- Check out Implementation Tables in Tactical Basin Plans
- Roads: Inventories and erosion risk maps
- Stormwater: municipality-wide stormwater assessments and mapping
- River and floodplain health assessments: river corridor planning, geomorphic assessments, culvert assessments

Who can help to Get Started?



- ANR Basin Planner in your region
- Local or regional partner
 - Regional planning commission
 - Natural resources conservation district
 - Watershed or lake association
- Facilities Engineering Division (FED) of ANR
- Vermont Transportation Agency
 - District Offices
 - Transportation Planners at the Regional Planning Commissions
 - VTrans Better Back Roads Program, Local Roads Program

VERMONT CLEAN WATER INITIATIVE

BROWN BAG LECTURES



Discussions on Act 64 and its implementation

Thursday, Nov. 19, 2015	The Role of Tactical Basin Planning
11AM—Noon	Implementing the Vermont Surface Water Management Strategy and the Lake Champlain phosphorus TMDL
Winooski Room	Speaker: Neil Kamman, Department of Environmental Conservation WebEx link: tinurl.com/CWI-BrownBag-1

Tuesday, Dec. 15, 2015	The Clean Water Initiative for Municipalities
11:30AM—12:30PM	Speaker: Kari Dolan, Department of Environmental Conservation WebEx link: tinurl.com/CWI-BrownBag-2
Winooski Room	

Thursday, Jan. 28, 2016	Managing Stormwater Impacts from New Development
11AM—Noon	Changes in the Permit Threshold
Winooski Room	Speaker: Padraic Monks, Department of Environmental Conservation WebEx link: tinurl.com/CWI-BrownBag-3

Thursday, Feb. 11, 2016	Stormwater Permits for Municipal Roads
11AM—Noon	Speakers: Gina Campoli, Agency of Transportation & Jim Ryan, Department of Environmental Conservation WebEx link: tinurl.com/CWI-BrownBag-4
Winooski Room	

Thursday, March 10, 2016	Clean Water State Revolving Fund
11AM—Noon	Long-term Financing of Water Quality
Winooski Room	Speaker: Bryan Redmond, Department of Environmental Conservation WebEx link: tinurl.com/CWI-BrownBag-5

Thursday, April 14, 2016	Agricultural Tile Drainage
11AM—Noon	Speaker: Laura DiPietro, Agency of Agriculture WebEx link: tinurl.com/CWI-BrownBag-6
Winooski Room	



Questions?

Vermont Clean Water Initiative Website:
cleanwater.vermont.gov/

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- Municipal Roads: Jim Ryan jim.ryan@vermont.gov
- Drinking Water: Jim Siriano Jim.siriano@vermont.gov

