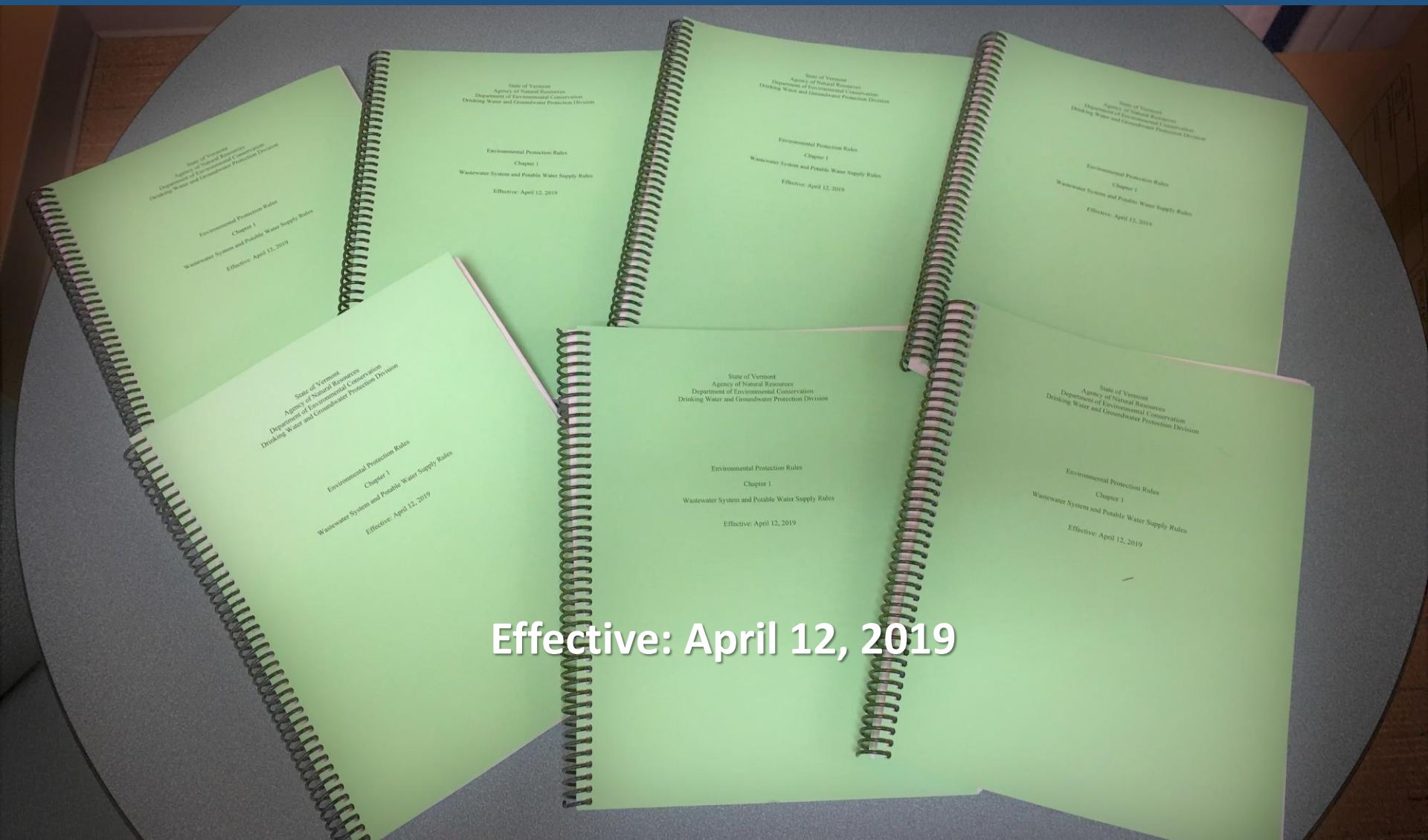
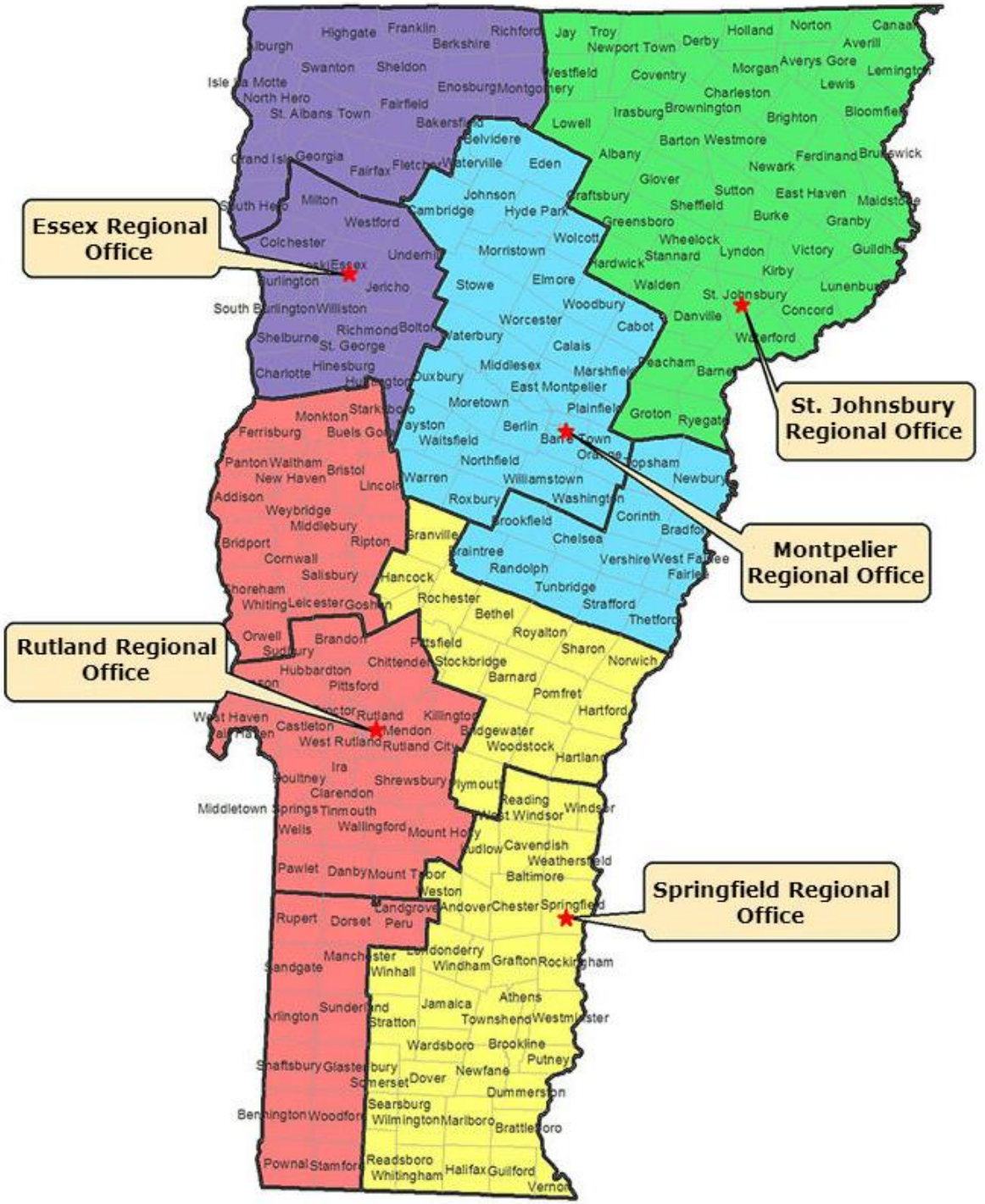
Wastewater System and Potable Water Supply Rules



Effective: April 12, 2019

Regional Office Program



http://dec.vermont.gov/water/ww-systems

http://dec.vermont.gov/water/contacts

Wastewater System and Potable Water Supply Rules

Scope and Purpose

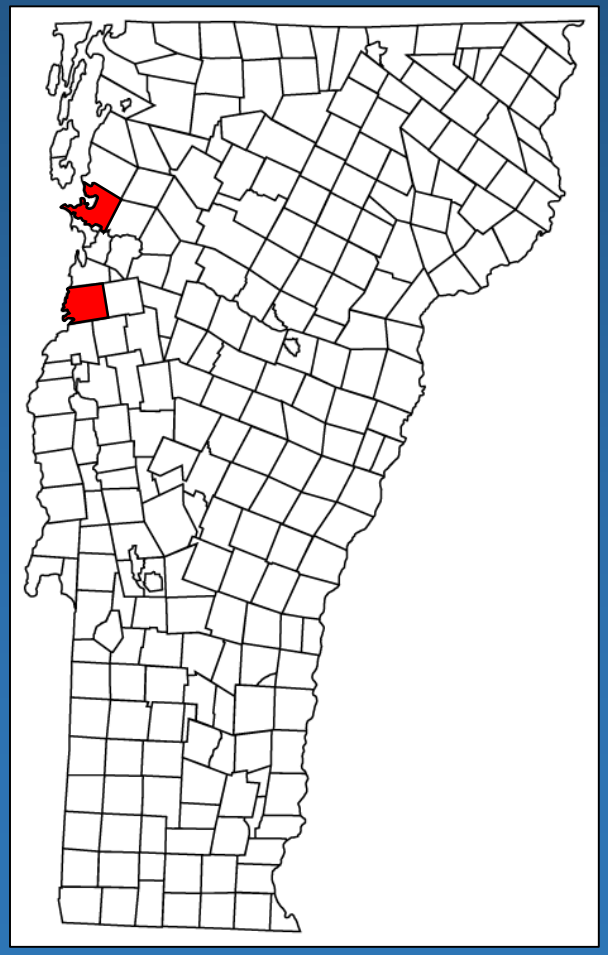
- Protect Human Health
- Protect the Environment

Technical Standards

- **Soil-based** wastewater systems with design flow less than **6,500 gallons per day** and municipal connections to wastewater treatment facilities
- **Potable water supplies** (water supplies that are not public) and municipal connections to public water systems

Municipal Delegation

- Municipalities may elect to receive delegation to issue State permits for:
  1. on-site wastewater systems
  2. potable water supplies, and
  3. connections to municipal water distribution
  4. connections to municipal wastewater collection systems
- Municipalities that have delegation are Colchester and Charlotte.



When is a Permit Required for a Residence

1. 13 actions that trigger the need for a permit
2. For single family residences, most common:
   - Subdividing a lot
   - New residence
   - Adding bedrooms (increase in design flow)
   - Converting from seasonal to year round
   - Adding an in-law apartment
   - Constructing a new wastewater system

Exemptions for a Residence

1. Clean slate
   - In existence prior to Jan. 1, 2007
2. Construction of a wastewater system or water supply between 1/1/07 to 6/30/07 serving an existing residence
3. Construction of a wastewater system or water supply between 1/1/07 to 6/30/07 serving a new residence
   - Designer requirements for wastewater and water

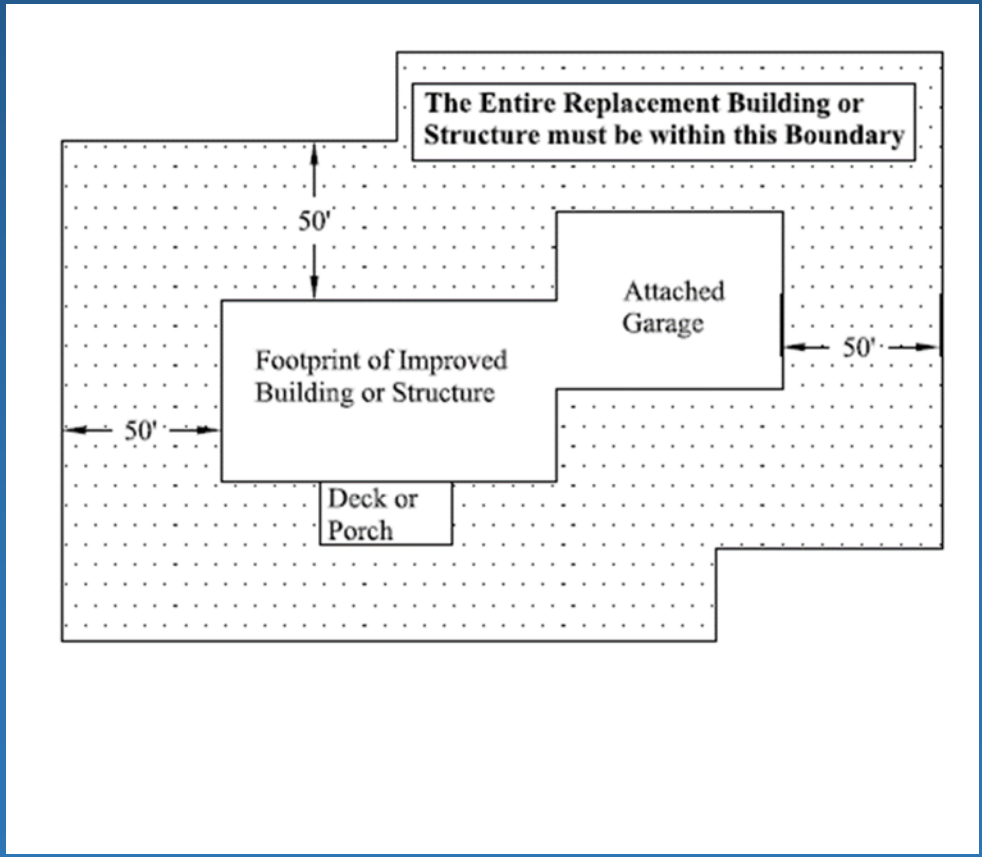
Exemptions for a Residence

4. Constructing a new potable water source
   - Does not include surface water
   - Requires well driller or designer
   - Exemption form

Exemptions for a Residence

5. Reconstruction of an existing residence

- No new I/A treatment, pump station, dosing siphon



Converting seasonal to year round (no additional bedrooms)

1. Need to permit – Leachfield to function all seasons
2. May use variances except for use of holding tank
3. If surface water, need to comply with treatment requirements

Converting from seasonal to year round (adding bedrooms)

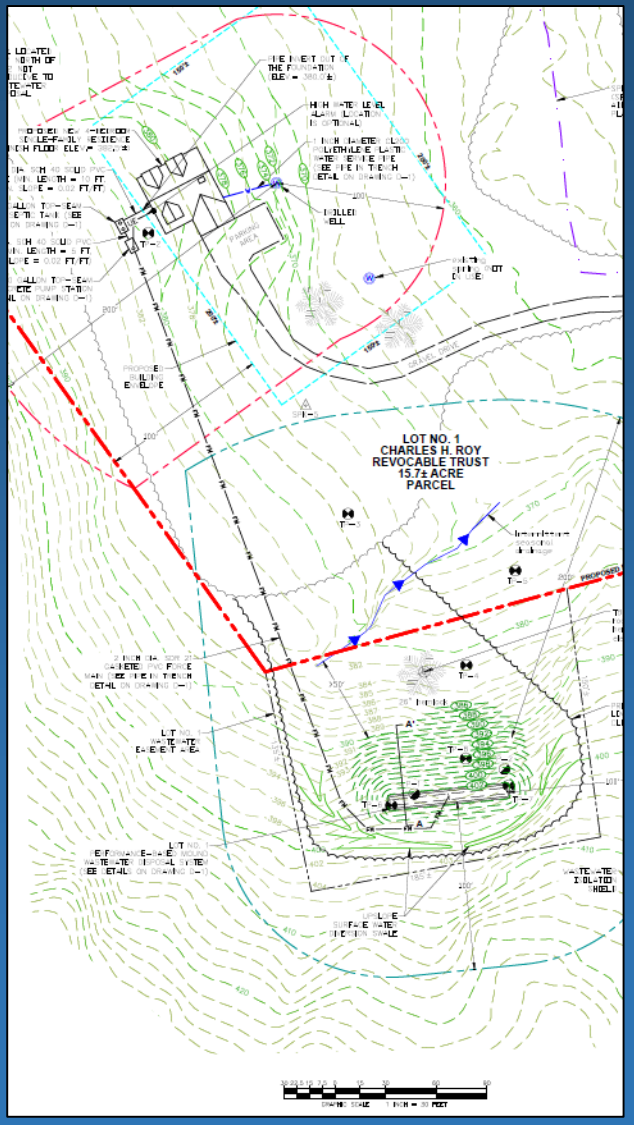
1. Need to comply with technical standards for water and wastewater (may not use variances)
2. If surface water, need to comply with treatment requirements
3. May not use holding tank

Application Requirements

1. **Design Flow** – Wastewater per day?
2. **Soil Descriptions** – Where is water table? What is soil absorption capacity?
3. **Wastewater System Design** – Loading rates (gallons per square foot per day), system type, system size calculations, and component details?
4. **Plans and Detailed Drawings** –

   a) contours; b) water features; c) flood plain;

   d) engineered features; e) existing/approved wells & wastewater systems; f) easements or rights of way; g) test pit, percolation test, & monitoring well locations; h) construction details; i) isolation distances & presumptive zones.
5. **Surface Water – P.E. design**



Potable Water Supply – Private Wells

1. Act 163 – landowners to provide prospective purchasers with educational material on benefits of water testing

2. Mandatory testing of potable wells "prior to new use." If out of compliance, test prior to conveyance. (Does not include surface water sources)

3. Test result sent to the Health Department

http://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_DW_testing_wells_factsheet.pdf

How do I find out if Permit exists?

- Permits run with the property
- Permits for conversions or failed systems have expiration dates
- Find State issued WW Permits with on-line search:

  http://dec.vermont.gov/water/forms/ww-systems-permits
- Find out if an old town Permit exists by contacting the Town or the Regional Engineer
- Permit may include easements. Buyer needs to know.
- Find Innovative / Alternative Approvals in on-line links:
  http://dec.vermont.gov/water/programs/ww-systems/innovative-alternative

VERMONT OFFICIAL STATE WEBSITE

VERMONT

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation 1

SEARCH
CONTACT

AIR AND CLIMATE | LAND | WASTE | WATER | LEARN MORE, DO MORE

- Home
- About DEC
- Commissioner's Office
- Administration and Innovation
- Air Quality and Climate
- Drinking Water and Groundwater 2
  - Drinking Water
  - Environmental Public Notices
  - Fees, Applications and Permits
  - Groundwater Reclassification
  - Groundwater Withdrawal Reporting and Permitting
  - Indirect Discharge
  - Laws and Regulations
  - Designer Licensing
  - Searchable Databases
  - Underground Injection Control (UIC)
  - Wastewater Systems and Potable Water Supplies 3
    - Permit Applications and Forms
    - Permit Compliance
    - Permit Guidance, Practices and Procedures
    - Program Education, Outreach and Resources 4
      - What Is a Septic System?
    - Permit Search
    - Program Rules
    - Innovative Alternative
    - Municipal Connections
    - Municipal Delegation
    - Technical Advisory Committee
    - Installer Program
  - Well Drillers Licensing and Reporting
  - Contacts
  - What's New
- Environmental Assistance

PROGRAM EDUCATION, OUTREACH AND RESOURCES

This is a simplified overview of how a septic system works.

Water runs out of your house from one main drainage pipe into a septic tank.

The septic tank is a buried, water-tight container usually made of concrete, fiberglass or polyethylene. Its job is to hold the wastewater long enough to allow solids to settle down to the bottom (forming sludge), while the oil and grease floats to the top (as scum). Compartments and a T-shaped outlet prevent the sludge and scum from leaving the tank and traveling into the drainfield area.

The liquid wastewater then exits the tank into the drainfield. If the drainfield is overloaded with too much liquid, it will flood, causing sewage to flow to the ground surface or create backups in toilets and sinks.

Finally, the wastewater percolates into the soil, naturally removing harmful bacteria, viruses and nutrients.

The Regional Office Program issues water/wastewater permits (WW Permits) for soil based wastewater systems with flows of less than 6500 gallons per day, for potable water supplies (water supplies that are not public water supplies), and for municipal water and sewer connections. Permitting staff are located in five Regional Offices. Staff also administers the licensed designer program and reviews innovative and alternative systems for potential use in VT.

The regional offices map provides office, program and contact information for each region.

Licensed Designer Program information.

WHAT'S NEW?

Be Septic Smart!

Over half the households in Vermont depend on septic systems or other types of onsite systems to treat their wastewater. Failure to maintain a septic system can lead to backups and overflows, which can result in costly repairs.

Even if you do not own an on-site septic system you are likely to use one at a friend's house or camp, a business or a park facility. During Septic Smart Week, EPA provides septic system use and maintenance tips, including:

- **Keep it clean!** Maintain your septic system to protect the cleanliness of your water well.
- **Don't Strain Your Drain:** Use water efficiently and stagger use of water-based appliances. This can improve septic system operation and reduce risk of failure.
- **Think at the sink!** What goes down the drain has a big impact on your septic system.
- **Don't overload the commode!** A toilet is not a trash can. Disposable diapers and wipes, feminine hygiene products, cigarette butts and cat litter can damage septic systems.
- **Protect it and inspect it!** Regular septic maintenance can save homeowners thousands of dollars.

Where do I find answers to questions?

Digging deep into the DEC web site

http://dec.vermont.gov/water/programs/ww-systems/program-education

Information for Landowners

http://dec.vermont.gov/water/programs/ww-systems/program-education

- **Adding an Accessory Apartment to a Single Family Residence**
- Brewery Process Wastewater "101"
- **Do I Need a Permit?**
- Do Not Put Food Scraps Down the Drain
- Homeowner Guidance on Cleaning Up after Residential Sanitary Sewer Backups
- Items to Avoid in an Onsite Sewage System
- **Notice to Owners of Innovative and Alternative (IA) Wastewater Treatment Systems**
- Procedure for the Repair, Replacement, Substitution or Addition of an IA Unit or Model
- **Notice to Permittees of Installation of Wastewater Systems and Potable Water Supplies**
- On-site Loan Program
- Shoreland Protection Act
- Standard Procedure for Cleaning Up Domestic Wastewater Spills Inside Buildings
- Standard Procedure for Cleaning Up Domestic Wastewater Spills Outside Buildings
- Testing Drinking Water from Private Water Supplies
- Water Well Flooding - What Do You Do PDF
- Wellowner.org Web Site - Informing consumers about groundwater & water wells
- **What is a wastewater system?**

Where do I find answers to my questions?

1. The Designer may be able to answer questions
   http://dec.vermont.gov/water/licensed-designers
2. For general questions contact your Permit Specialist:
   http://dec.vermont.gov/environmental-assistance/permits
3. For WW Permit questions contact Regional Engineer:
   http://dec.vermont.gov/environmental-assistance/permits
4. For compliance questions contact compliance specialist:
   Chris Russo – Chris.Russo@vermont.gov (802) 585-4885
5. For I/A Approval questions contact I/A specialist:
   Graham Bradley - Grahame.Bradley@vermont.gov (802) 622-4129
6. If still unsure or unhappy, contact Program Manager:
   Ernie Christianson - Ernest.Christianson@vermont.gov (802) 585 4884


Questions?
VERMONT

Along with Regulations

A Living Shoreland

is THE Best Management Practice

for Clean Lakes

Amy Picotte, VTDEC Lakeshore Manager

2019 Septic Conference ~ Winooski NRCD

Mergansers on Maidstone Lake by Rebecca Scott

Belted kingfisher by Helene Grogan


by Kate Jerome

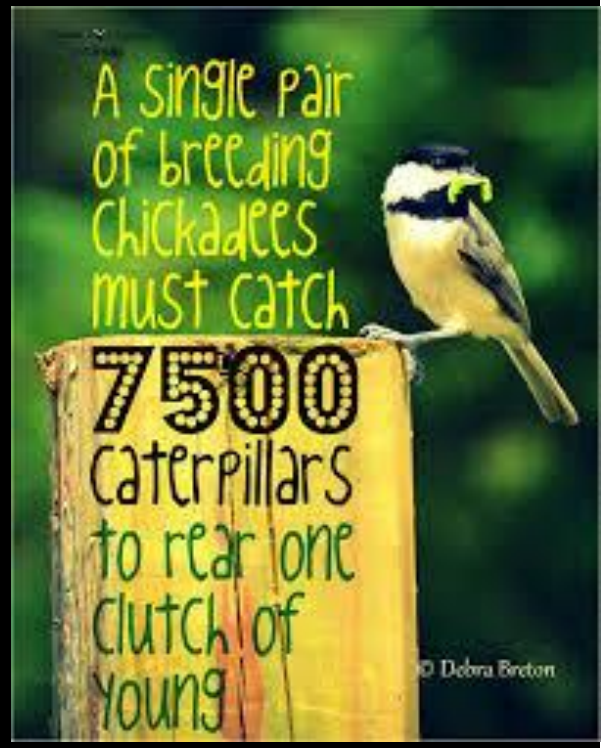
By Michigan Natural Shoreland Partnership

Native Plants are Essential for Healthy Lake Ecosystems

- 96% of birds depend entirely on insect protein to feed their young
- Up to 40% of fresh water fish protein comes from insects dropped into the water from native plants

Dr. Douglas Tallamy's Research on Native Plants

Black Cherry hosts 456 insects!



Woody Plants

Common Name	Plant Genus	Butterfly/moth species supported
Oak	Quercus	534
Black cherry	Prunus	456
Willow	Salix	455
Birch	Betula	413
Poplar	Populus	368
Crabapple	Malus	311
Blueberry	Vaccinium	288
Maple	Acer	285
Elm	Ulmus	213
Pine	Pinus	203
Hickory	Carya	200
Hawthorn	Crataegus	159
Spruce	Picea	156
Alder	Alnus	156
Basswood	Tilia	150
Ash	Fraxinus	150
Rose	Rosa	139
Filbert	Corylus	131
Walnut	Juglans	130
Beech	Fagus	126
Chestnut	Castanea	125

Herbaceous Plants

Common Name	Plant Genus	Butterfly/moth species supported
Goldenrod	Solidago	115
Asters	Aster	112
Sunflower	Helianthus	73
Joe pye, Boneset	Eupatorium	42
Morning glory	Ipomoea	39
Sedges	Carex	36
Honeysuckle	Lonicera	36
Lupine	Lupinus	33
Violets	Viola	29
Geraniums	Geranium	23
Black-eyed susan	Rudbeckia	17
Iris	Iris	17
Evening primrose	Oenothera	16
Milkweed	Asclepias	12
Verbena	Verbena	11
Beardtongue	Penstemon	8
Phlox	Phlox	8
Bee balm	Monarda	7
Veronica	Veronica	6
Little bluestem	Schizachyrium	6
Cardinal flower	Lobelia	4

Source:

Doug Tallamy
Professor & Chair of Entomology and Wildlife Ecology
250 Townsend Hall
Department of Entomology
and Wildlife Ecology
University of Delaware
Newark, DE 19717-1303
Tel. (302) 831-1304,
Lab 831-8835

Email:
dtallamy@udel.edu

Shoreland Native Plants

Benefit Wildlife

- Provide Food and Habitat
- Provide Shade for Aquatic Animals
- Cool Water to Hold Dissolved Oxygen for Fish
- Limit Aquatic Plant Growth

Benefit Water Quality

- Stabilize Banks and Prevent Erosion
- Infiltrate and Filter Upland Runoff

Benefit Property Owners

- Build Resiliency Along the Shore
- Protect Shoreland Property and Investments
- Make us Smarter!

…Nature Makes Us Smarter!

Apple – Google – Facebook – Samsung - YouTube – Airbnb

They're ALL creating natural wild areas and buildings

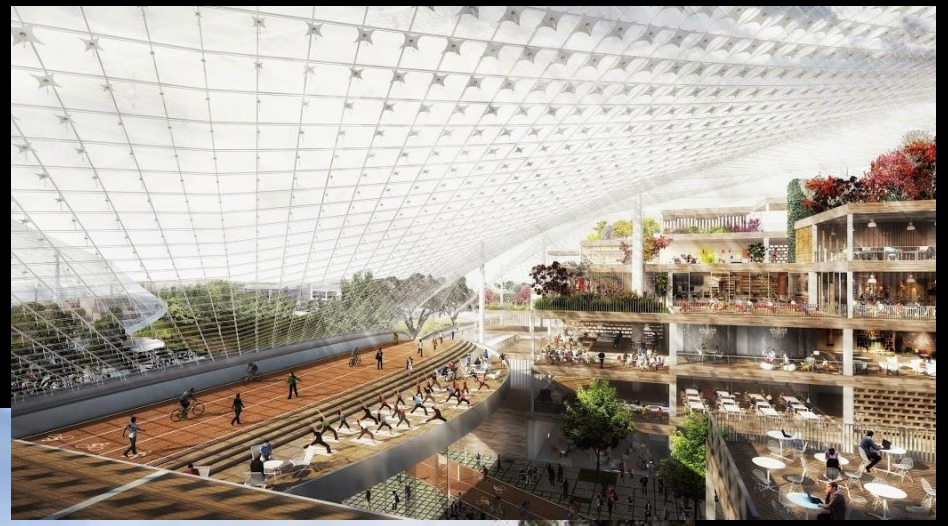
Apple 3 LEED-Platinum office in Santa Clara, CA

- **15% higher level of well-being**
- **6% more productive**
- **15% more creative overall**

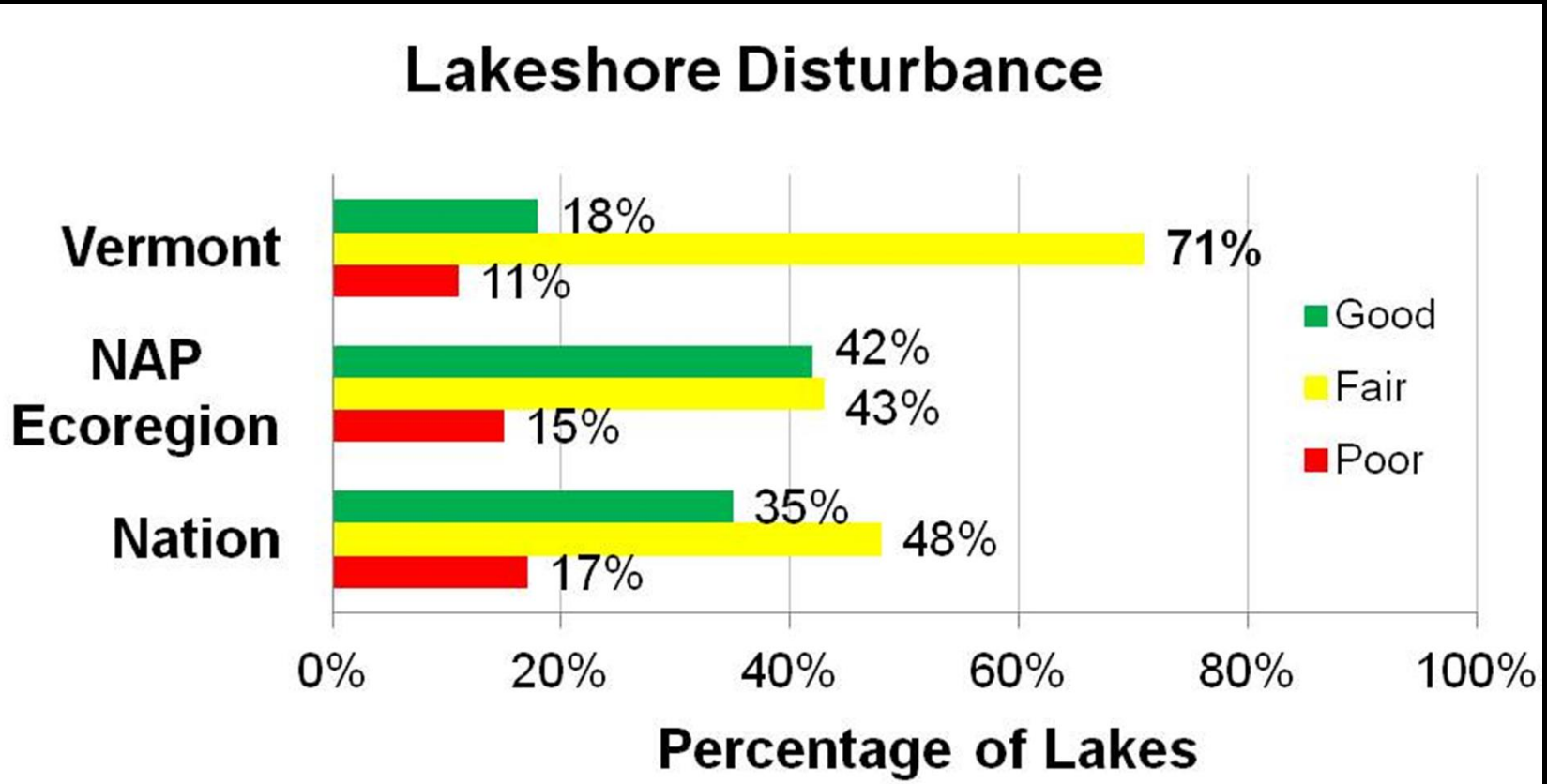
Google’s New Campus

Design by BIG and Heatherwick Studio

- Restored natural habitat shelters cafes and a bike path
- Parking is hidden underground, below gardens



Vermont Ranked Worse than the Nation for Degraded Shallow Water Habitat Caused from Shoreland Clearing

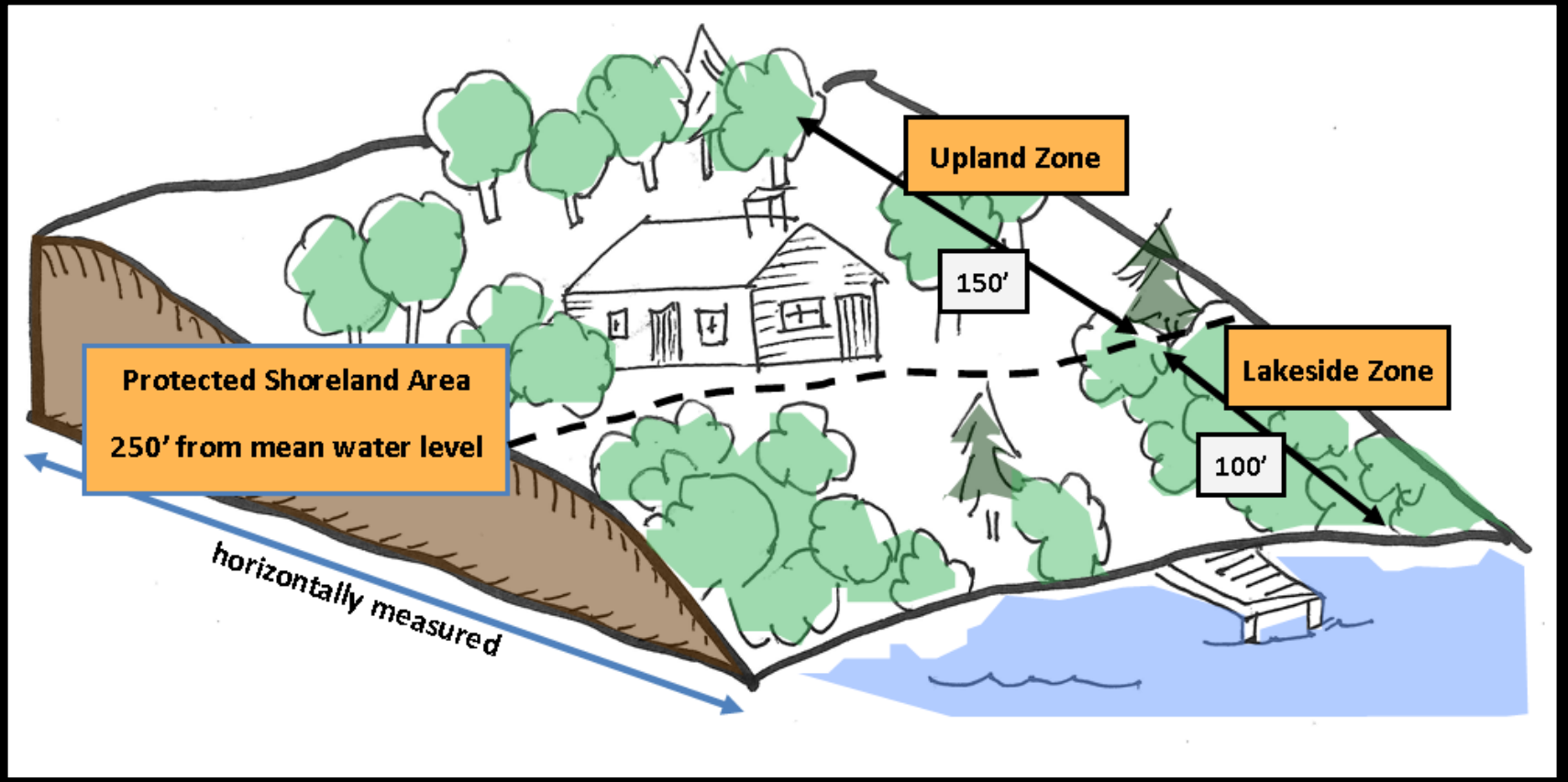


2007 EPA National Lakes Assessment Data

2014 Shoreland Protection Act - Doesn't Allow This Anymore

The Shoreland Protection Act - 2014

- Applies to lakes 10 acres or greater in size
- State reviews development practices within 250 feet of a lake's mean water level

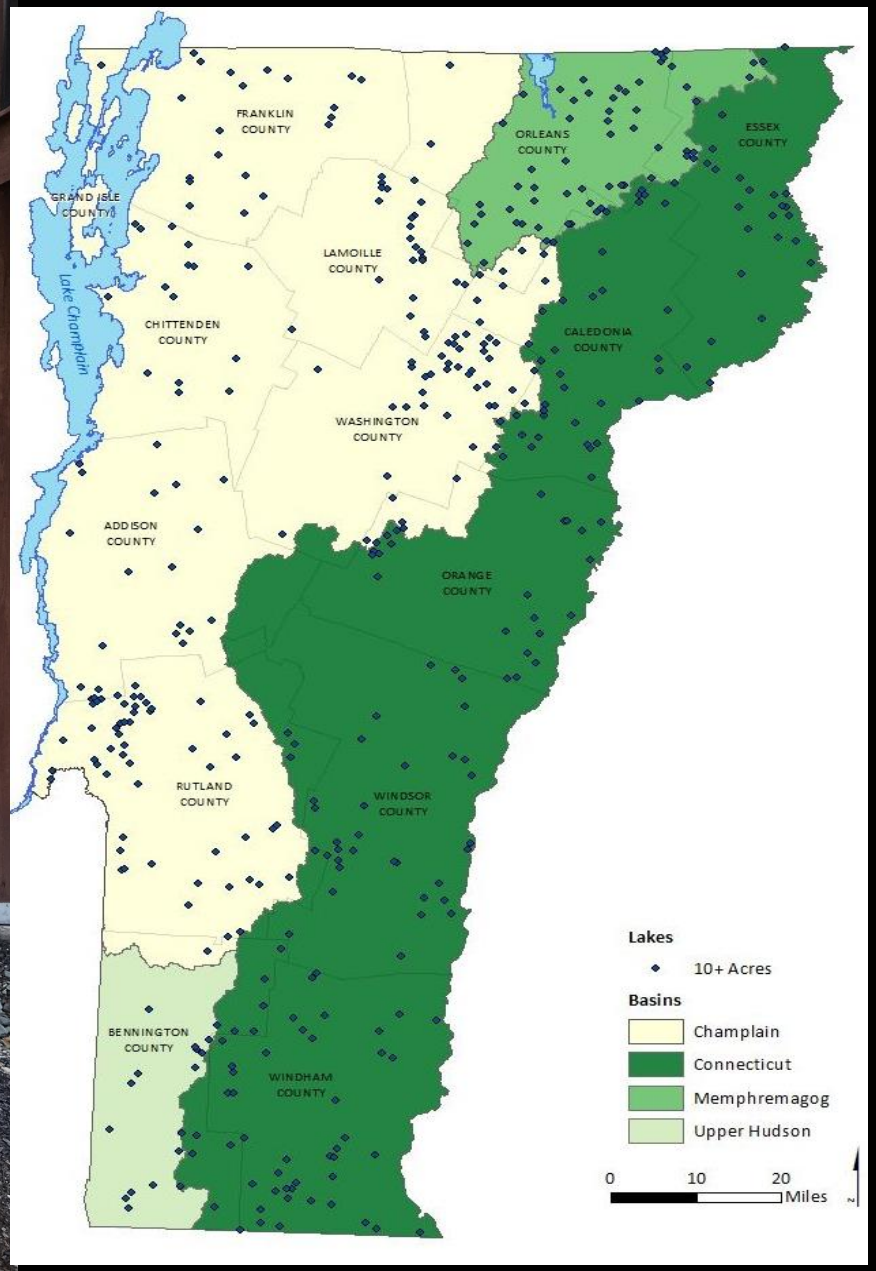


Creation of <u>New Impervious Surface</u> or <u>Cleared Area</u> Triggers a Permit Review

The Shoreland Protection Act - 2014

Within 250 feet of mean water level	Standard
Setback	100 feet (for conforming lots)
Slope	< 20%
Impervious surface (roof, paved/unpaved driveways, patios)	≤ 20%
Cleared area (lawn, maintained landscaping)	≤ 40%

Period of Shoreland Restoration



In Vermont:

- 800 Lakes of which 445 are larger than 10 acres
- 1480 Miles of Shoreland

Currently:

- 45% Developed
- 55% Undeveloped

People Love Lakes:

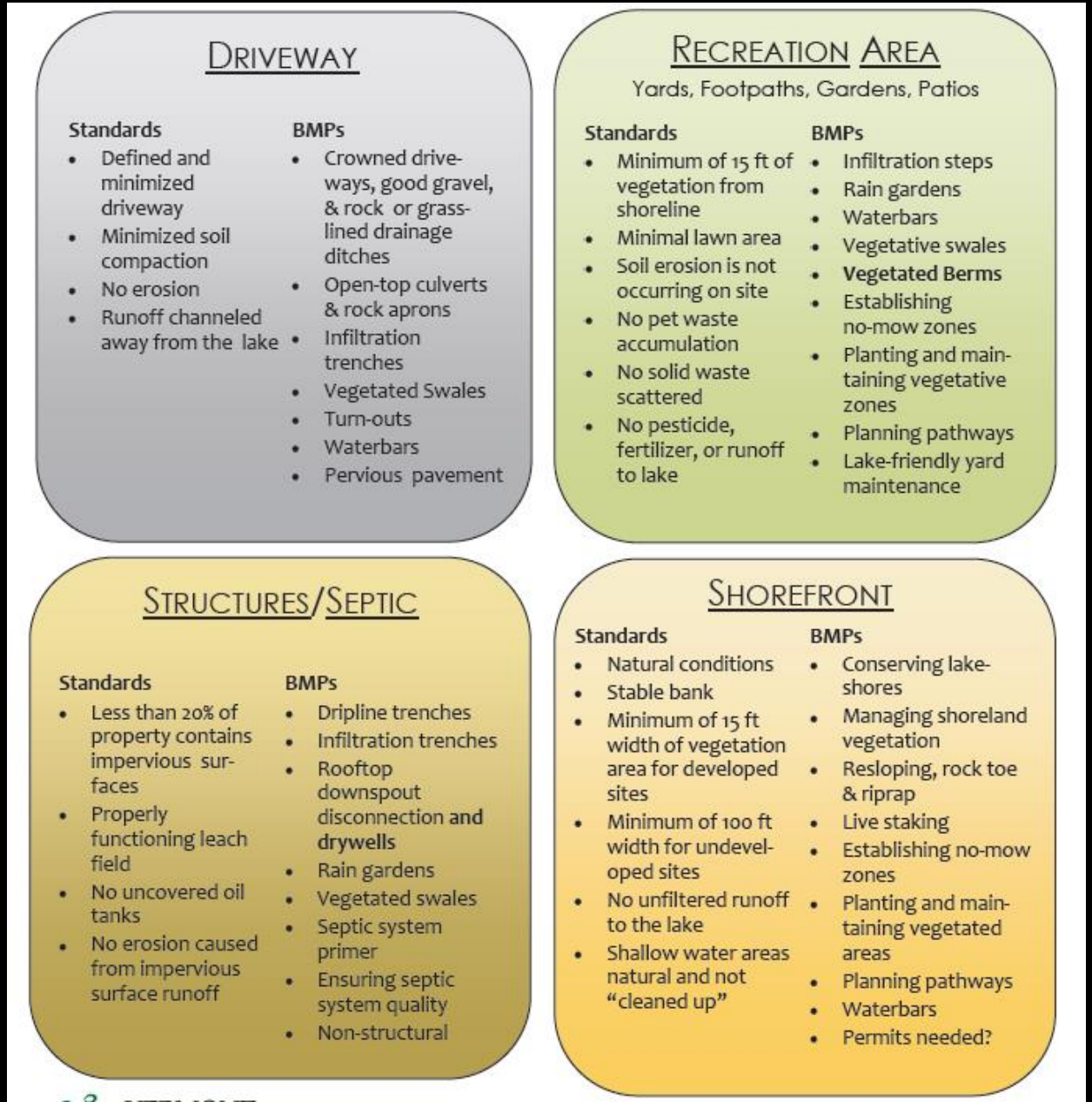
- The greatest density of residential development in Vermont is along lakeshores

Lake Wise Award

Shoreland BMPs

Vegetative
- Infiltrate
- Filter
- Benefit Wildlife

Structural
- Infiltrate
- Filter

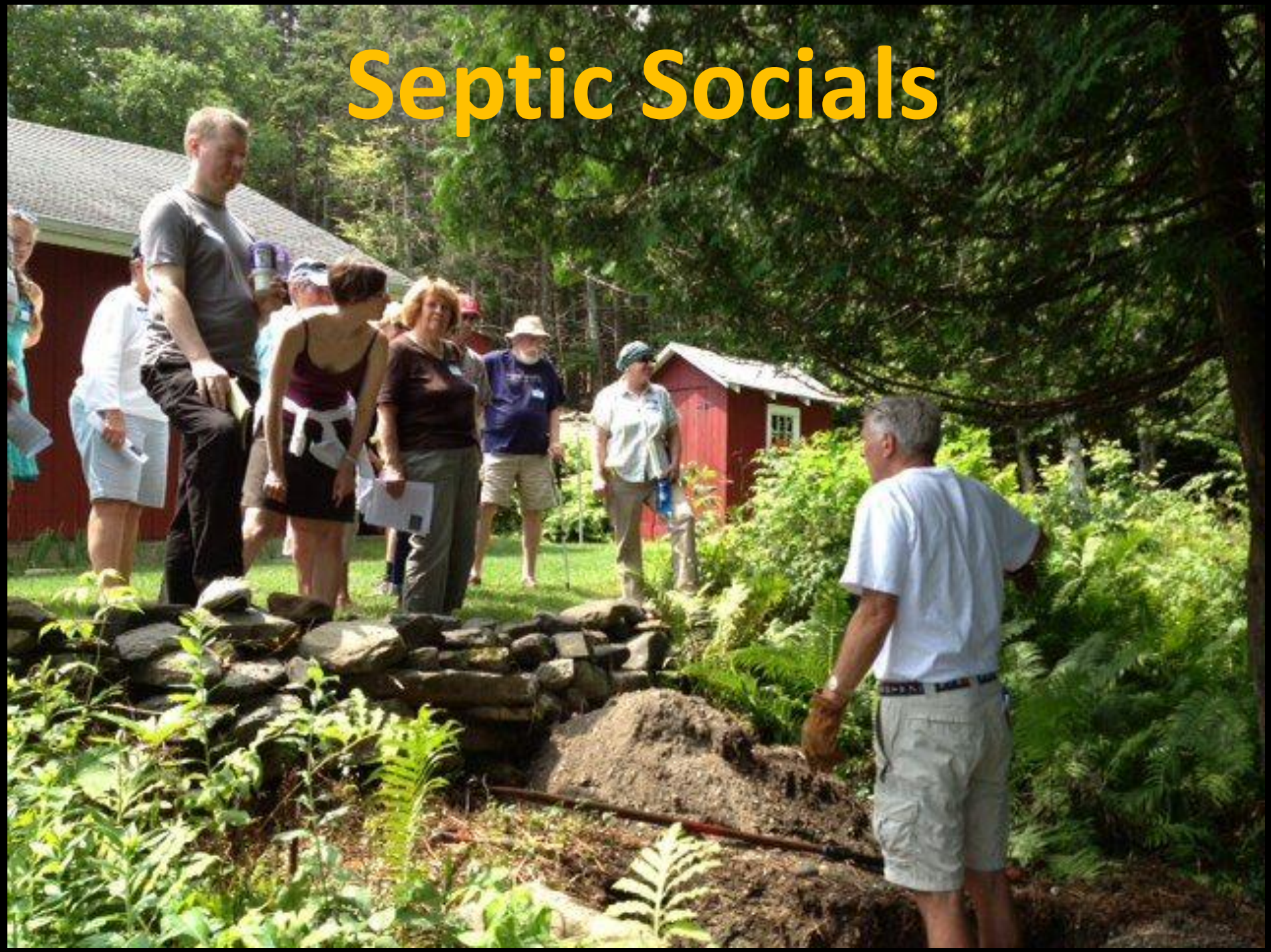


Harvey’s Lake, Barnet

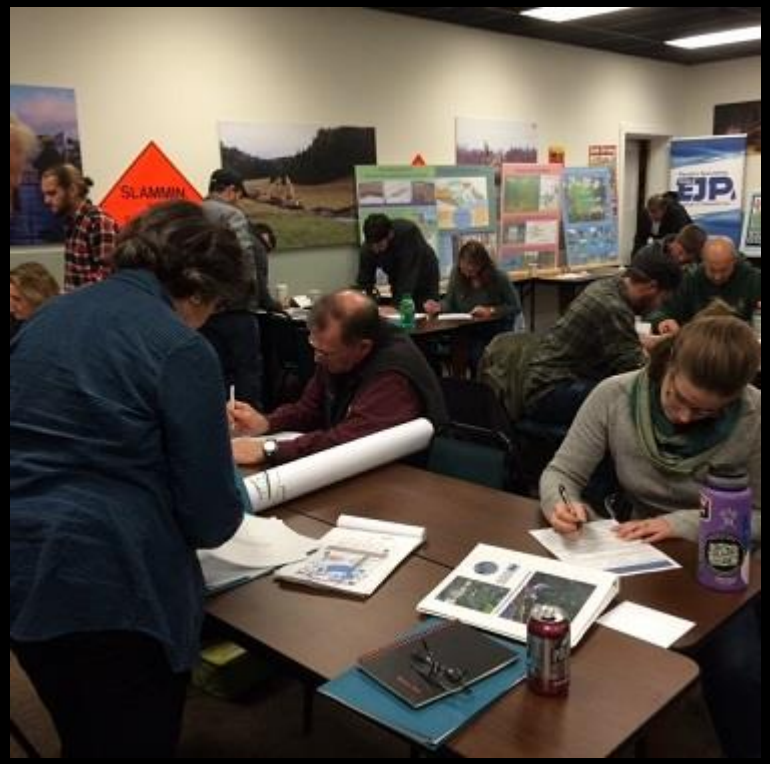
Federation of Vermont Lakes and Ponds

Lake Seymour, Morgan

Septic Socials



Natural Shorealnd Erosion Control Certification Program Every November



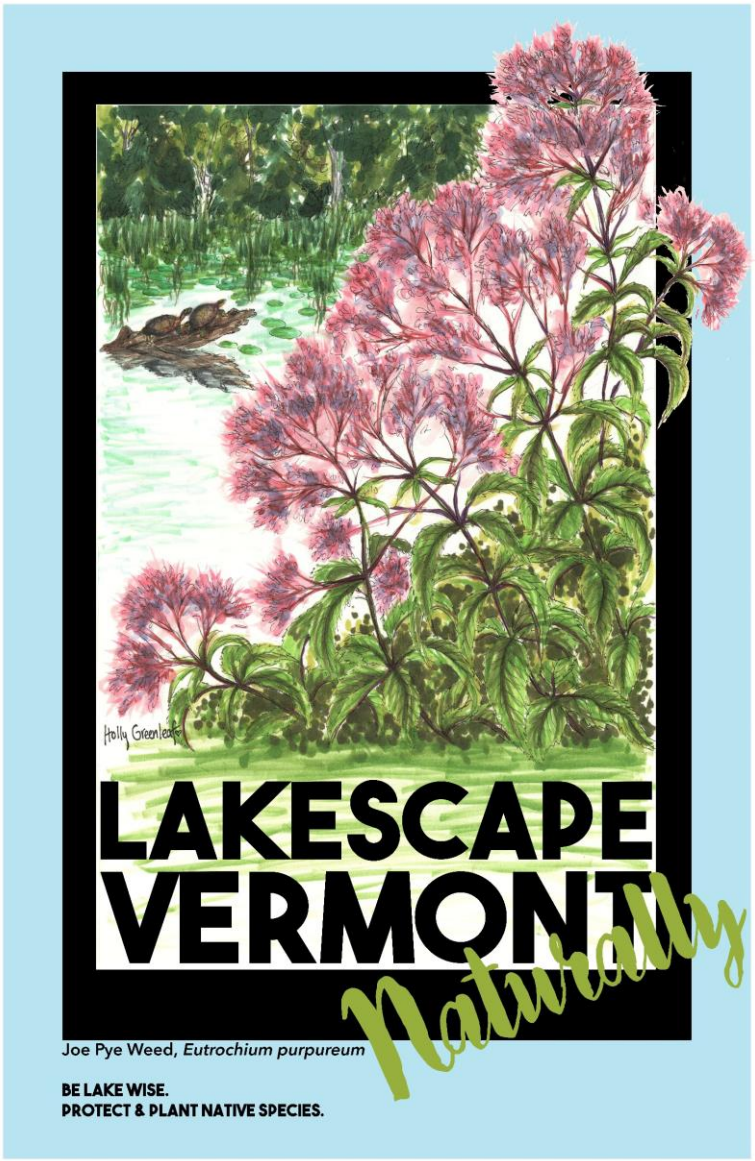
Professionals Certified in Natural Shoreland Erosion Control Practices

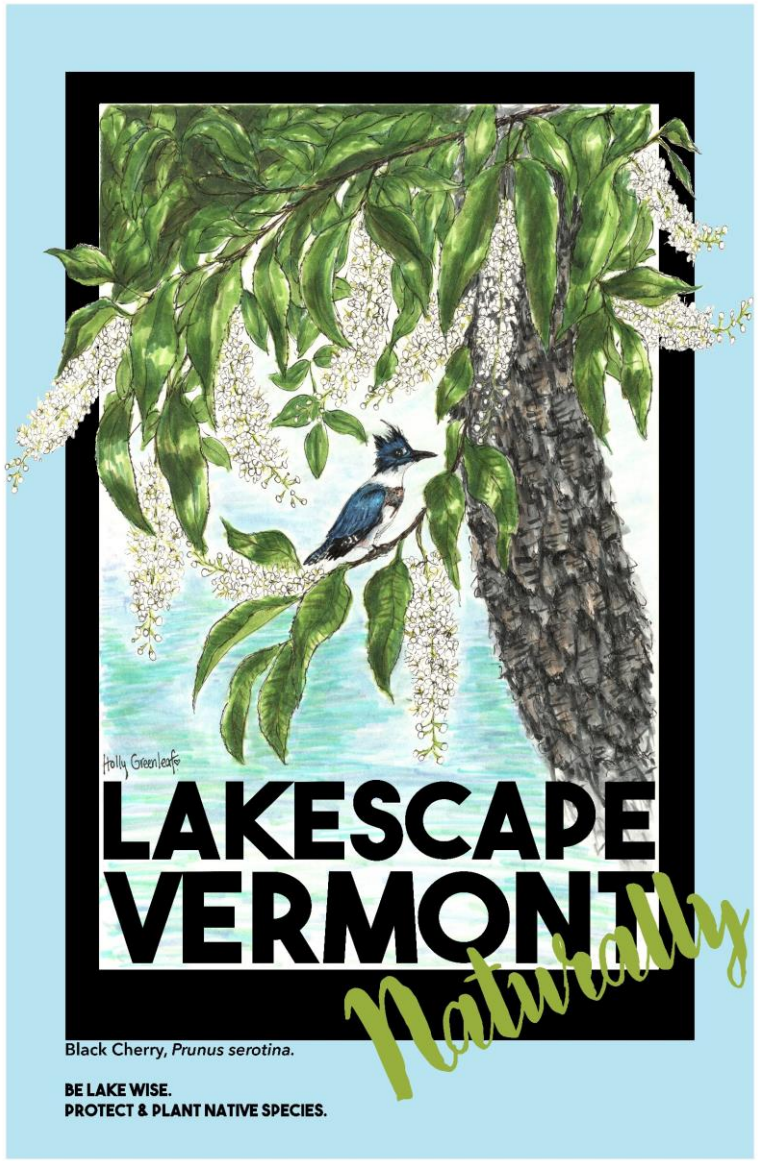
For Training Information visit VTANR Lakes and Ponds Lake Wise Program or email: Amy.Picotte@Vermont.Gov

First Name	Last Name	Participant Company	Participant Town	State	Email and/or Web Site	Phone	Engineering Design	Landscaper / Gardner Tree Care / Forester	Natural Resource Specialist Environmental Consultant	Regulatory / Administrator	Shoreland Homeowner Construction	
Gerard	Peters	Peters' General Contracting, Inc.	Albany	VT	gpeters9949@gmail.com	802-755-6743					X	
Sam	Peters	Peters' General Contracting, Inc	Albany	VT	sampeters37@gmail.com	802-735-6743			X		X	
Gerard	Peters	Peters' General Contracting Inc.	Albany	VT	gpeters9949@gmail.com	802-755-6743					X	
Dwight	Jarvis	Jarvis & Sons Inc	Ascutney	VT	dbjarvis2@comcast.net	802-674-2836						
Philo E	Marcotte	Earth Surveys LLC	Barnet	VT	earthsurveysllc@gmail.com	802-473-0204	X					
Shane	Stevenson		Barnet	VT		802-535-1814					X	
Richard	Stevenson	Stevenson Construction	Barnet	VT	rpstevenson@hotmail.com	802-633-4960					X	
Kyle	Bellavance	K. Bellavance Land Works	Barre	VT	kyle@bellavancelandworks.com	802-279-8488		X			X	
Craig	Chase	Chase & Chase Land Surverying & Septic Designers, Inc.	Barre	VT	cdchase@chasesurveyors.com	802-479-9636	X					
Tom	Emler	Capitol Earthmoving, Inc.	Barre	VT	tom@capitolearthmoving.com	tom@capitolearthmoving.com						
Gene	Gravel	K. Bellavance Land Works	Barre	VT	kyle@bellavancelandworks.com	802-279-8488		X			X	
Barbara	MacGregor	ANR - Forest Parks and Recreation	Barre	VT	barbara.macgregor@vermont.gov	802-476-0171				X		
Katrina	McCurdy	Everett S Prescott Inc.	Barre	VT	katrina.mccurdy@esprescott.com	802-223-2385						
Brian	Segit	Everett S Prescott Inc.	Barre	VT	brian.segit@esprescott.com	802-223-2385						
James	Bowes	Bowes Environmental, LLC	Barton	VT	jbowes@bowesenvironmental.com	802-839-9241				X		
George	Carpenter	J.P. Sicard, Inc.	Barton	VT	info@jpsicard.com	802-525-9506					X	
Tim	Crown	J. P. Sicard, Inc.	Barton	VT	timlahar@kingdomgravel.com	802-525-9506						
Brad	Drake	J.P.Sicard, Inc.	Barton	VT	brad@jpsicard.com							
AJ	Galfetti	J. P. Sicard, Inc.	Barton	VT	aj@jpsicard.com	802-525-9506					X	
Sean	Guyette	JP Sicard Inc	Barton	VT	jamie@jpsicard.com	802-525-9506					X	
Tim	Lahar	Kingdom Gravel and Aggregate	Barton	VT	timlahar@kingdomgravel.com	802-525-9506						

Bioengineering Methods to Restore Living Shorelands

Lake Wise Poster Series by Holly Greenleaf





Shoreland Protection Act and the Lake Wise Program

- Promote lake friendly development and redevelopment
- Protect and restore living shorelands with native plantings
- Reduce erosion and stormwater runoff
- Protect fish & wildlife habitat

Thanks for Protecting Living Shorelands!

Amy Picotte, VTDEC Lakeshore Manager

Amy.Picotte@Vermont.Gov

May 9, 2019 ~ Septic Conference