Upper Valley Subcommittee

of the Connecticut River Joint Commissions
December 16, 2019 Meeting Minutes
Latham Library, Thetford, VT

NH Members:	Present	Absent
Alice Creagh, Hanover, NH	Х	
Jim Kennedy, Chair, Hanover, NH	Χ	
Eric Agterberg, Lebanon, NH	Χ	
Ruth Bleyler, Lebanon, NH		Χ
Bruce Garland, Lebanon, NH (alt)	Χ	
Bill Malcolm, Lyme, NH	Χ	
Vacancy, Lyme, NH		
Christine Bunten, Orford, NH	Χ	
Carl Schmidt, Orford, NH		Х
Karyn Brown, Piermont, NH		Χ
Helga Mueller, Piermont, NH		Х

VT Members:	Present	Absent
Vacancy, Bradford, VT		
Vacancy, Bradford, VT		
Nancy Jones, Bradford, VT (alt)		Х
Ben Dana, Fairlee, VT	Х	
Vacancy, Fairlee, VT		
Danielle Allen, Fairlee, VT (alt)		Х
David Barrell, Hartford, VT	Х	
Lynn Bohi, Hartford, VT	Х	
Jason Houle, Hartford, VT (alt)		Х
Tara Bamford, Thetford, VT	Х	
Bill Bridge, Thetford, VT	Х	
Linda Matteson, Thetford, VT (alt)		Х
Melissa Horwitz, Norwich, VT		Х
Vacancy, Norwich, VT		

Others present: Danielle Owczarski, VTDEC Watershed Planner; Olivia Uyizeye, Staff from UVLSRPC

1. Welcome and Introductions

Kennedy opens the meeting at 7:04pm. Introductions are made

2. Speaker – Danielle Owczarski on the Basin 14 Tactical Plan

Uyizeye introduces Owczarski who is a watershed planner with the VT Agency of Natural Resources, Water Investment Division. There are 5 watershed planners in the state, each handling 3 basins (or watershed). Each basin plan goes through an update every 5 years.

Owczarski shares the story of her morning routine to give an example of how individuals might interact with VT's natural water resources. Every day in the morning she goes for a walk around the town where she lives, about 3 miles. During this walk, she crosses 3 rivers. The first is a small brook that starts as a babbling stream near her home, but runs itself into closed drainage as it moves into the town. One of her neighbors tells her how he used to be able to play in the stream as a child. The second river is Jail Branch, one of the most productive trout streams in Vermont. This is suspected due to a large forested area that the river runs through just upstream of the town and for most of its headwaters. The third is Stevens Branch. Owczarski explains how this water concerns her due to sedimentation, possibly from the industrial area. Owczarski then reflects how most residents might respond to these experiences if they are concerned or feel protective. She explains that the best thing you can do is learn about your local basin plan, and connect to watershed groups and conservation commissions.

Garland asks if there is a similar process done in NH. Bamford replies no. There are corridor plans and a statewide plan, but not watershed plans.

Bohi asks if there are a set of standards the plans are based on or if it is up to the local groups. Owczarski says there are general standards set forward by the state while local leaders work to identify feasible priorities.

Malcolm asks if there is a regulatory function of these plans. Owczarski replies that the plans largely evaluate how current regulation is functioning and these are meeting their stated purpose. The plan does designate rivers according to their condition, which can impact whether or not applicants are required to consider impacts in a permit application.

Owczarski continues her presentation (see attached documentation). The following are additional comments made during the remaining presentation.

- These plans do not only focus on the negative impacts found, but also maintaining good water quality sites in VT.
- Basin plans follow a sector analysis structure of the following: developed land, forest, natural resources, agriculture, stormwater, and education/outreach.
- Owczarski shares the Basin 14 plan timeline. The first draft is shared publicly in January, at which point the CRJC local reps could review and give comment and attend public meetings.
- The plan focuses on the tributaries and not so much the CT River itself. Owczarski is interested in feedback on how to integrate the CT River more into the process.
- Kennedy suggests considering the Clean Water Act 401 Certificates for the CT River used in both states to report to FERC in the dam relicensing process.
- Bamford asks if the basin plan is an appropriate space to suggest more training for road crews, who can
 often be great at managing water for the road but not for the habitats and waterways surrounding.
 Owczarski says this would be a good comment and is already being considered for the Basin 14 plan.
- Barrell expresses the importance of learning from the lack of knowledge exhibited after Hurricane Irene hit the region when impacts were made to stream in a haphazard way in an effort to get roads up and running again.
- Kennedy asks if a shoreland protection act is being considered in VT. Owczarski responds that people are
 considered, but there is a big challenge in how to enforce it. Towns can already implement standards
 locally.

Representatives agree to review the draft Basin 14 plan at the next meeting. Uyizeye will coordinate with Owczarski to circulate the document once it is made available.

3. Review October Minutes

Garland makes a motion to accept the minutes. Malcolm seconds the motion.

Bamford asks that page 3, first paragraph be modified to indicate that she suggested "inviting speakers on issues of concern"

The motion, with edits, passes unanimous.

- 4. Permit Review No permits to review
- 5. Other Updates & Business
 - a. NHDES Wetland permit review process guidance

Uyizeye hands out packets with guidance and an optional process for permit review provided by NHDES. The process would allow one or more representatives to sign off on a select short list of permits without requiring a full quorum of the subcommittee.

Kennedy explains that the modified wetlands rules are complicated. He is working on guidance for the different requirements, processes and relevant regulatory language. There are now permits that the LRS must sign off on,

no opportunity for comment, in order for the permit to proceed. Kennedy is not comfortable determining a procedure because it is unclear which permits the subcommittee should review as a whole.

Malcolm makes a motion to allow Kennedy to sign off on any new minimum impact notification, registration, or expedited wetlands permit applications received with signature required before the next scheduled meeting on February 17. Kennedy may identify permits to bring to the full subcommittee for review. Bamford seconds the motion. The vote passes unanimous.

b. Corridor plan review

This item is postponed until the April meeting.

6. Adjourn

Bohi makes a motion to adjourn. Barrell second the motion. The vote passes unanimous.

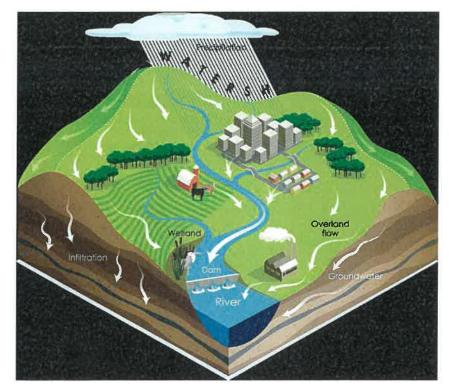
Respectfully Submitted by Olivia Uyizeye.



What's Going On In Your Watershed?

5-Year Update for the Stevens-Wells-Waits-Ompompanoosuc & CT Direct Tactical Basin Plan





The terms watershed and basin can be used interchangeably.

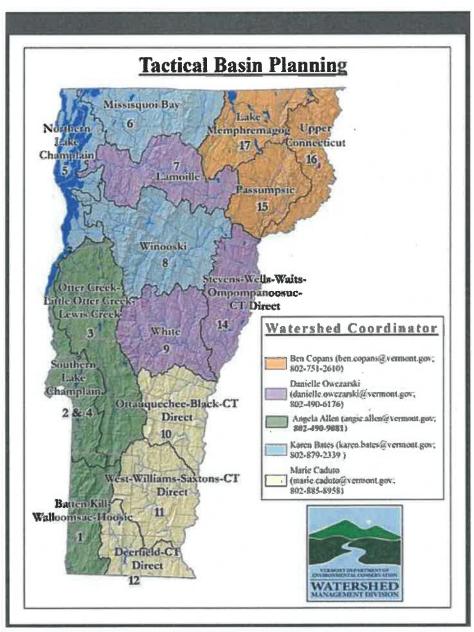
A watershed or basin is an area of land where precipitation collects and drains off into a common outlet, such as into a river or lake.

The drainage basin includes all the surface water from rain runoff, snowmelt, and nearby streams that run downslope towards the shared outlet.

Basins combine with other basins to form a network of rivers and streams that progressively drain into larger water areas.

What is a Tactical Basin Plan?

The State of Vermont created 15 watershed management units.



Map of Tactical Basin Planning Units

Each of these units is managed in part by a basin planner.

Each basin planner manages and creates a tactical basin plan for 3 watersheds on a staggered schedule of every five years.



Tactical Basin Planning Process

During the five-year cycle, state staff and watershed partners collect information to track and determine the condition of the State's surface waters.

The basin planners work with state and federal staff, municipalities, regional planning commissions, natural resource conservation districts, and watershed groups to develop strategies to address water quality priorities that are identified through water quality monitoring and assessment activities.



Caledonia Natural Resources Conservation District water quality monitoring.

The strategies for protection and restoration of surface waters are carried out by implementing projects, initiatives, and regulations that protect and restore surface waters of rivers, lakes and wetlands.

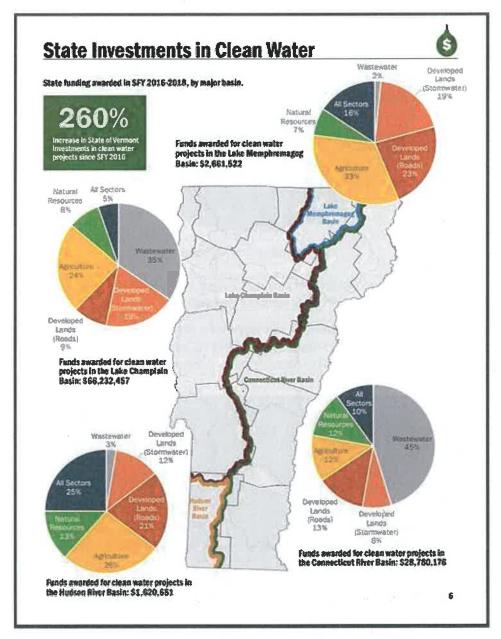
At its core, a tactical basin plan is an instruction booklet to achieve watershed health.

Why Are Tactical Basin Plans Important?

The Vermont Water Quality Standards as well as Vermont's Clean Water Act (2015) require the development of Tactical Basin Plans for each of Vermont's 15 river basins to be adopted on a five-year recurring cycle.

During the Tactical Basin Planning process a list of priority actions are identified for State Clean Water Funding.

This project identification process helps to prioritize where funding should be focused.



The projects in the plan can be referenced when applying for other state, non-profit and federal funding sources.

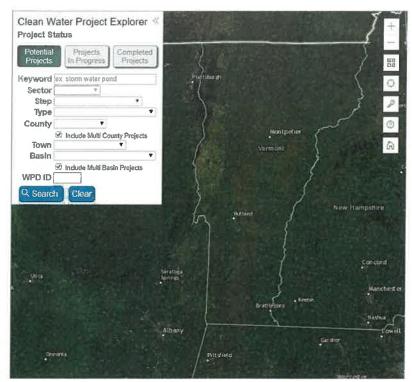


The Clean Water Projects Explorer

The Clean Water Projects Explorer allows the general public to search and review proposed, in progress, and completed clean water projects throughout the state.

Projects in the "Projects In Progress" and "Completed" projects tabs are funded with Vermont Clean Water funds.

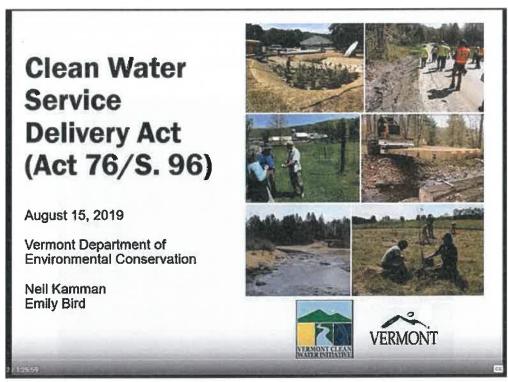
Projects in the "Potential Projects" tab are still a work in progress and can be added to through your basin planner. The projects must meet basic criteria to be added to the database.



Click on the "Explore" button on the lower right corner of the screen to use the tool.

Act 76 - Clean Water Service Delivery Act

Act 76 (link: https://legislature.vermont.gov/Documents/2020/Docs/ACTS/ACT076/ACT076%20Act%20Summary.pdf) establishes a long-term funding source for water quality programs and amends how clean water projects are implemented, administered, and funded.



An webinar introducing the Clean Water Service Delivery Act presented on August 15, 2019.



Basin 14 drains 580 squares miles in east central Vermont, covers 20 towns and the three counties of Caledonia, Orange and Windsor.

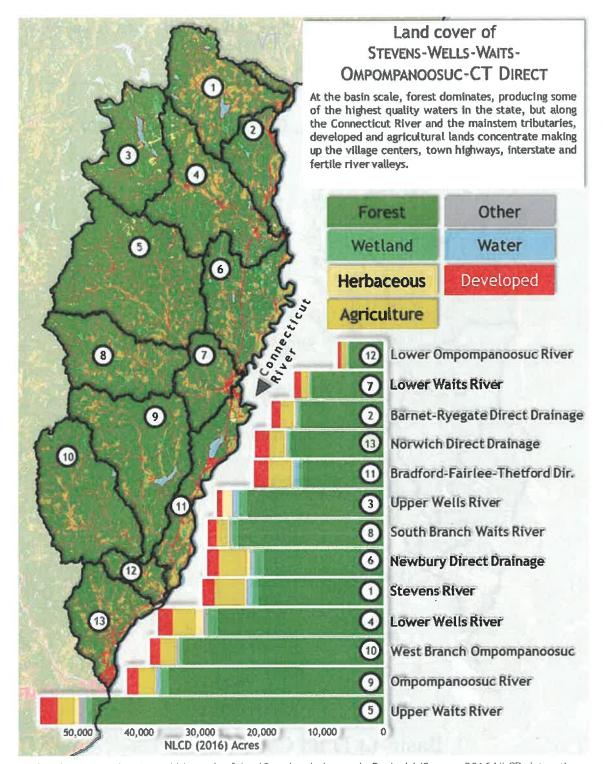


It includes the **Ompompanoosuc River, Waits River, Wells River, Stevens River** and **four direct tributaries to the Connecticut River.** The entire basin can be broken up into 13 sub-basins shown in the map below.



Basin 14 Land Cover Types

Forest cover dominates Basin 14 at the watershed scale and also in the headwater areas. Developed and agricultural lands concentrate within the the Connecticut River and tributary corridors in the form of village centers, dirt roads, town highways, interstate and fertile river valleys.



Land use cover in acres within each of the 13-major drainages in Basin 14 (Source: 2016 NLCD dataset).

Lakes & Ponds

There are five large lakes and ponds in the *Stevens River watershed* including Harvey's Lake (351 acres), Martins Pond (82 acres), Fosters Pond (61 acres), Ewell Pond (51 acres) and Mud Pond (34 acres).

There are seven large lakes and ponds in the *Wells River watershed* including **Lake Groton** (422 acres), **Kettle Pond** (109 acres), **Ricker Pond** (95 acres), **Ticklenaked Pond** (54 acres), **Osmore Pond** (48 acres), and **Noyes Pond** (39 acres).

The largest lakes in the *Ompompanoosuc watershed* include Lake Fairlee (457 acres), Miller Pond (64 acres), Lake Abenaki (44 acres), and Mud Pond (20 acres).

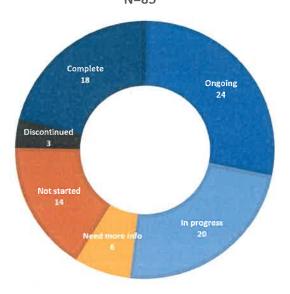
Large lakes and ponds in the *CT Direct tributary watersheds* include **Symes Pond**, **Halls Lake**, **Round Pond**, **Muddy Pond**, and **Lake Morey**.

What Was Accomplished Since the Last Plan?

The 2015 Tactical Plan for Basin 14 identified 85 actions to achieve watershed health.

A report card is being developed to provide progress on each of the 85 actions.

2015 BASIN 14 ACTIONS STATUS UPDATE N=85



Current status of 85 actions identified in the 2015 Basin 14 Plan.

Of the 85 actions identified in the 2015 Basin 14 Plan, 73% are in progress, ongoing or complete. Four percent were discontinued and 7% need more information to be categorized. Sixteen percent (14) were not started as of the development of this presentation.

Ongoing projects are projects that continue over time. They include actions with a regulatory process behind them or projects that do not have a discrete end point.

The 14 projects that were not started will be evaluated during the planning process and may be carried over to the 2020 plan.

What Are These Projects You Keep Talking About?

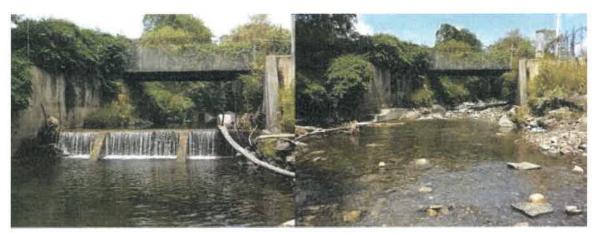
While the state is responsible for developing basin plans to restore and protect Vermont's waters, the people of Vermont are key players in ensuring the actions outlined in the basin plan happen. Some projects are backed by regulatory requirements, but many are voluntary.

The state works and supports many partners by providing funding and technical assistance to implement watershed actions that fulfill the actions outlined in the plan.

The partners include non-profit organizations, state and federal organizations, municipalities and their governing groups, businesses, and private landowners. All these groups collaborate to get things done. A list of partners is provided

at the end of this presentation.

Natural Resource Projects Geer Dam Removal



Before (left) and after (right) photos of the Geer Dam Removal.

Location: West Fairlee

Description: The Geer Dam was removed on the Ompompanoosuc River in West Fairlee in 2017. The small dam was built by its namesake in 1983 for hydro-electric power generation by a retired Dartmouth professor and farmer. No longer producing electricity and acting as a blockage to upstream movement of aquatic species and downstream movement of stream materials, the dam was listed as a priority for removal in the Basin 14 Tactical Basin Plan in 2015.

Result: Seventeen miles of prime habitat opened up to Brook Trout and other aquatic species in the Ompompanoosuc River.



Geer Dam Removal 8/17/17

Video: vimeo.com/230166602

Water Quality Monitoring
Ticklenaked Pond Monitoring



View of Ticklenaked Pond from the VDEC monitoring boat.

Location: Ryegate

Description: Two types of monitoring were conducted: lay monitoring data collected monthly in the summer by a lake community volunteer and supplemental monitoring conducted by VDEC. This monitoring was conducted to assess effectiveness of Alum Treatment applied in 2015 to prevent toxic cyanobacteria blooms. A number of water quality projects were implemented in the watershed by the local community to maintain the effectiveness of the Alum treatment, such as road erosion abatement, shoreland buffers and agricultural best management practices.

Result: Five years of follow-up data collected. Data indicates that Alum treatment was successful at increasing water clarity and decreasing the abundance of toxic cyanobacteria blooms.

Agricultural Projects

Livestock Exclusion



Livestock exclusion fencing keeping livestock from causing erosion on stream banks.

Where: West Fairlee

Description: Livestock exclusion fencing installed. Implementation of agricultural best management practices that reduce pollutants (e.g., nutrients, pathogens, sediment) and improve soil health. Funding for farmers to implement water quality-related capital improvements, such as production area improvements, manure management projects, farm equipment, and pasture management. This particular project was funded and completed in fiscal year 2016.

Result: 24.4 acres of livestock exclusion from waterway.

Stormwater Projects

Road Erosion Inventories & Grant-in-Aid Projects



Central Vermont Regional Planning Commission working on Road Erosion Inventories.



Grant-in-Aid Project completed by Newbury, Strafford, and Topsham.

Location: Newbury, Strafford, Topsham, Orange

Description: The towns of Newbury, Strafford and Topsham completed their Road Erosion Inventories and received funding from the VT Agency of Transportation to implement projects that will decrease road runoff during rain events. The town of Orange completed their Road Erosion Inventory this year.

Results: All hydrologically connected segments of road assessed for erosion potential and prioritized for restoration. In Newbury 26 road best management practices (BMPs) were constructed to reduce runoff into the West Branch of the Ompompanoosuc River, in Topsham 14 BMPs were constructed to reduce runoff into Tabor Branch, and in Newbury 18 BMPs were constructed to reduce runoff into Scott Brook.

Fairlee Stormwater Plan



Location: Fairlee

Description: The town of Fairlee received a Better Connections grant which will end with a draft "corridor action plan" that includes strategies for streetscape enhancements, transportation connectivity, economic vitality, implementation and stormwater management. The primary goal under the Water Quality funding component of the project is to do the analysis needed to develop conceptual designs for 3-5 stormwater areas to be integrated into planned infrastructure investments.

Result: 3-5 conceptual designs for stormwater projects which may include some areas that are meshed with potential streetscape enhancements if they are identified as a priority by the Town.

Education & Outreach Projects Lake Fairlee Water Quality Committee

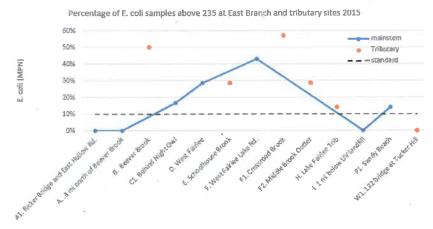


Location: West Fairlee, Fairlee, Thetford

Description: The mission of the Lake Fairlee Water Quality Action Committee is to develop, on behalf of the Lake Fairlee Association (LFA), a plan to deal with rising phosphate levels in Lake Fairlee.

Result: A three town committee has formed and started work on an action plan to address pollution from lakeshore and watershed sources such as stormwater and agricultural runoff. They are also exploring options for tributary monitoring. They currently have a dedicated Lay Monitor and Cyanobacteria monitor.

E. coli Education and Outreach to the Ompompanoosuc River Community



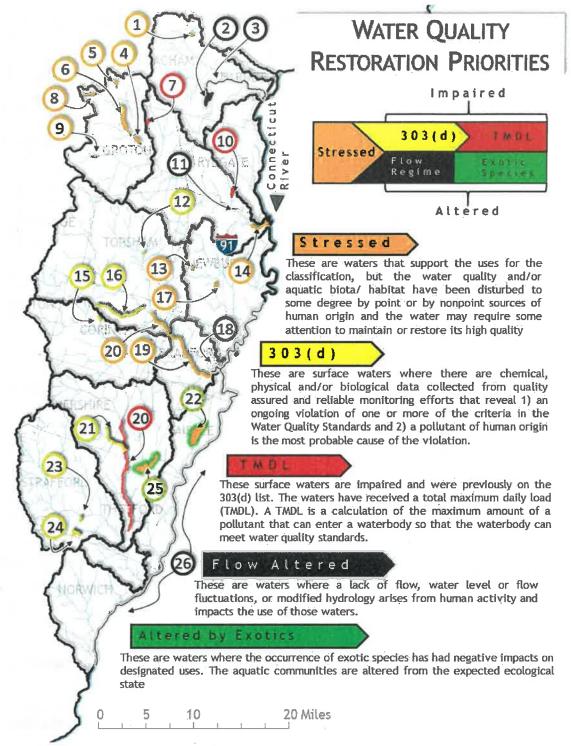
Graph showing levels of E.coli at different monitoring stations along the Ompompanoosuc River. Source: 2015 Water Quality Monitoring Report of the Ompompanoosuc watershed developed by VDEC, watershed conservation commissions, and the White River Natural Resources Conservation District.

Location: West Fairlee

Description: Developed and/or disseminated material to educate the public on water quality issues and local and statewide initiatives to facilitate the protection, maintenance, enhancement, and restoration of water resources through behavioural change.

Results: Community awareness spread about the *E. coli* impaired area of the Ompompanoosuc River in the Ompompanoosuc watershed and the value of the Ompompanoosuc River to the community.

Restoration Priorities



Map of waters with documented water quality problems. Numbers on the map correspond with the list below.

Stressed

Map ID	Name	Pollutant/Problem	List
1	Ewell Pond	Nutrient enrichment, anoxic hypolimnion	Stressed
4	Ricker Pond	Low pH, Acid deposition	Stressed
5	Osmore Pond	Low pH, Acid deposition	Stressed
6	Groton Pond	Low pH, Acid deposition	Stressed
8	Kettle Pond	Low pH, Acid deposition	Stressed
9	Noyes Pond	Low pH, Acid deposition	Stressed
13	Round Pond (Newburry)	Eurasian Watermilfoil (EWM)	Stressed
14	Lower Wells River	Metals, iron seeps	Stressed
17	Halls Pond	EWM, sedimentation, Variable-leaved milfoil	Stressed
19	Waits River, South Branch to Tabor Branch	Temperature, physical alteration	Stressed
20	Waits River, Below south branch	Temperature, sedimentation	Stressed
* 22	Lake Morey	Increasing phosphorus trends, anoxic hypolimnion	Stressed
26	Lake Fairlee	Increasing phosphorus trends, anoxic hypolimnion	Stressed

303(d)

Map ID	Name	Pollutant/Problem	List
12	Tabor Branch Tributary # 6, Mouth to Rm 0.1	Nutrient enrichment	303(d)
15	Cookville Trib #4, RM 1.0 to 1.7	Acid mine drainage, Pike Hill Mine	303(d)
16	Pike Hill Brook, from mouth to 4 miles upstream	Metals, Pike hill mine drainage	303(d)
21	Schoolhouse Brook and Tributary	Metals, acid mine drainage, Ely Mine	303(d)
23	Copperas Brook	Metals, Elizabeth Mine	303(d)
6 24	Lords Brook, tributary #2 and #2's trib #1	Metals, "South Cut" and "South Mine"	303(d)

TMDL

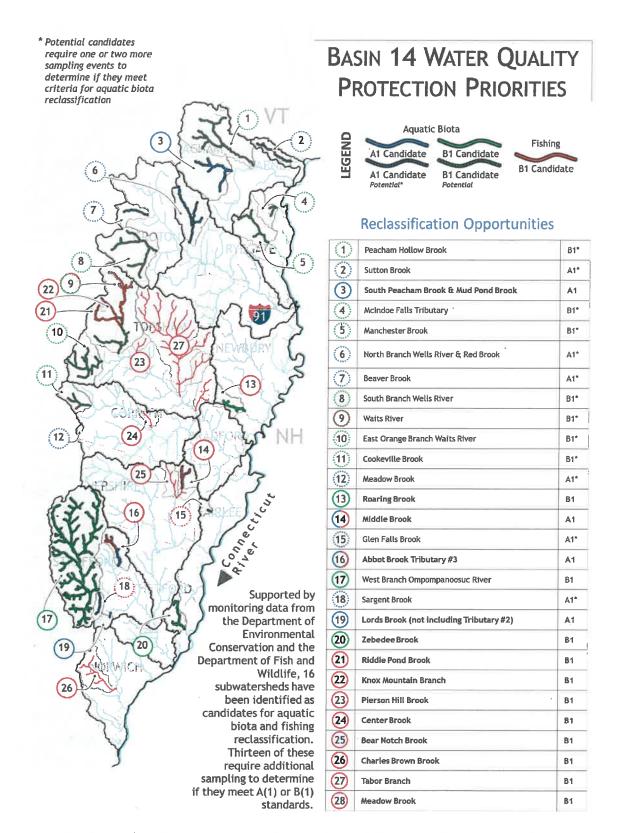
Мар ID	Name	Pollutant/Problem	List
7	Levi Pond	Low pH, atmospheric deposition	TMDL
10	Ticklenaked Pond	Phosphorus	TMDL
20	Ompompanoosuc River, USACOE Beach to Brimstone Corner	E. coli	TMDL

Altered by Exotics Flow Altered

Map	Name	Pollutant/Problem	List
* 3	South Peacham Brook, Stevens River	Dam alters aquatic habitat	Flow
2	Harvey's Lake	Dam alters aquatic habitat	Flow
11	Wells River, below dam at Boltonville	Poor flow in dam bypass segment	Flow
18	Waits River, below Bradford Dam	Poor flow in dam bypass segment	Flow
6 22	Lake Morey	Eurasian Watermilfoil	Exotics
a 25	Lake Fairlee	Eurasian Watermilfoil	Exotics
26	CT River, Above Wilder Dam to Bradford	Water level fluctuation erodes streambanks	Flow

List of waters with documented water quality problem. Stars and water drops indicate recent action and ongoing restoration.

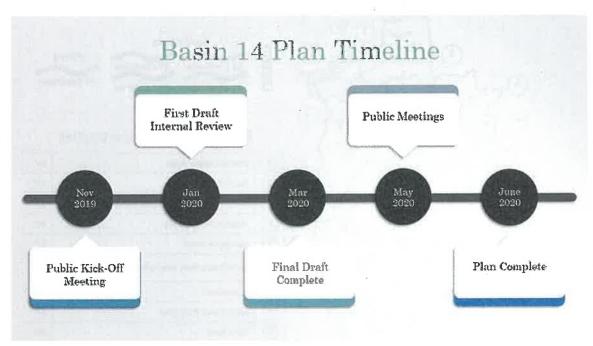




All surface waters of the State are required to meet B(2) standards for designated uses such as swimming, boating, and fishing. When waters do not meet these standards, they are added to the VT Priority List of Waters. This list is updated biannually.

A(1) and B(1) waters are those waters that meet criteria related to a specific use. The uses represented in this map include fishing and aquatic biota. These water are considered high quality and are recommended for protection.

The final plan should be complete by June of 2020.

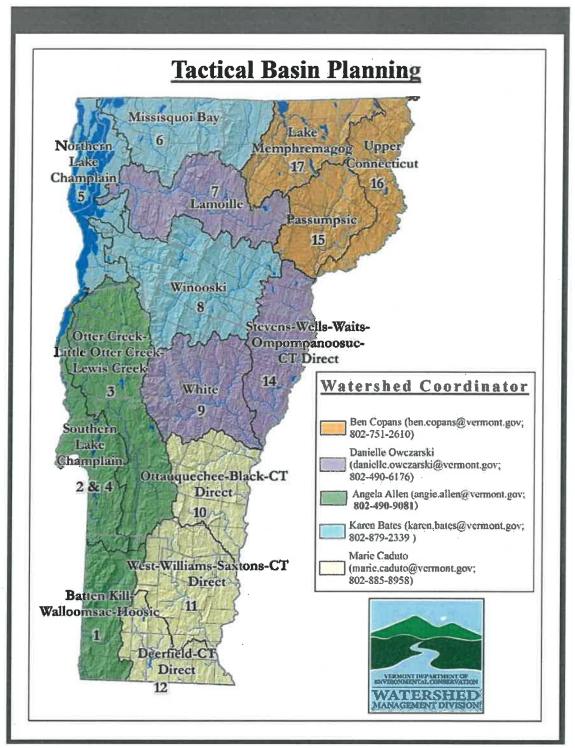


Timeline for the Basin 14 Tactical Basin Plan.



Attend Tactical Basin Plan meetings, learn who your local watershed partners are and how your town is improving water quality, become familiarized with the most recent Tactical Basin Plan for your town, and connect with watershed partners and your town on how you can help.

If no watershed groups exist in your area, reach out to your basin planner.



15 Watershed Planning Basins in Vermont and the Basin Planner contact information.

Learn More About Vermont's Surface Waters

There are a number of resources available to continue your educational journey learning about Vermont's Water Quality.



Restoring Lake Shorelands

Video: www.youtube.com/watch?v=GCHt1v6sOeY



Restoring Vermont's Wetlands

Video: www.youtube.com/watch?v=Y9opucrZjxc



River Management

Video: www.youtube.com/watch?v=21YAP8RF_sw



Natural and Manmade Infrastructure for Flood Protection

Video: www.youtube.com/watch?v=ucb-Y8iipng



Finding the Right Mix: One Town, Many Solutions

Video: www.youtube.com/watch?v=Nxrg9x6Klh0

Vermont Integrated Watershed Information System



Welcome to IWIS, The VTDEC-Watershed Management Division's new online data portal for water quality information. Here you can access water quality and chemistry testing information from throughout Vermont. Users may access data in one of two ways.

If you are new to IWIS, you may want to check out the <u>User Guide</u>.

Site Search

Site Search allows for a Text based search the Division

Database of Monitoring Sites. This will search by Waterbody Name, Town, Location Description, and a variety of other IDs. From there you will have access to a variety of reports for the found sites.

ANR Atlas



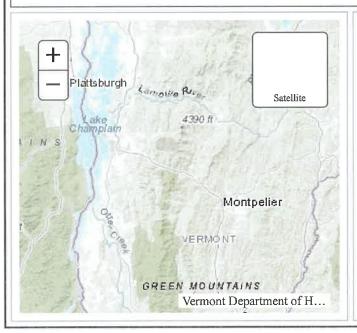
A map based tool that will display the Divisions Monitoring

Website: https://anrweb.vt.gov/DEC/IWIS/

Cyanobacteria (Blue Green Select Monitoring Town Algae) Tracker

Select Lake/Region

Conditions change quickly. Keep people and pets away from anything you suspect might be a cyanobacteria bloom.



Conditions shown on the map are based on the most recent report available.

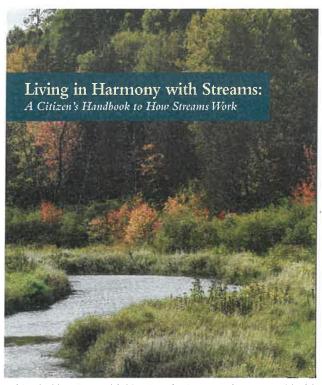
This map shows the most recent conditions that have been reported from monitored locations. Widespread monitoring typically ends in September. For current conditions at a swimming area, contact the town, Vermont State Park, or private association responsible for maintaining that area.

Learn what blooms look like so you can avoid them.

Watch a video of what cyanobacteria blooms look like here.

What are Cyanobacteria?

Cyanobacteria, also known as blue-green algae, are a natural component of marine and fresh water



Learn how to Live in Harmony with Vermont's rivers and stream with this handbook (link: https://floodready.vermont.gov/sites/floodready/files/documents/Stream%20Guide%2011-16-2016.

pdf) .



Share your recommendations for the Basin 14 Plan by filling out this 3-minute survey: https://www.surveymonkey.com/r/CSS8LKR (link: https://www.surveymonkey.com/r/CSS8LKR). Contact your watershed partners and get active!

List of Partners in Basin 14 involved in Water Quality Projects and the Development of the Tactical Basin Plan

Want to see your organization on this list? Contact your basin planner.

Connecticut River Conservancy

Caledonia County Natural Resources Conservation
District

Northeastern Vermont Development Association

Two Rivers Ottauquechee Regional Planning Commission

Connecticut River Joint Commission - Upper Valley Subcommittee

White River Natural Resources Conservation District

Central Vermont Regional Planning Commission

Vermont River Conservancy

https://www.ctriver.org/

https://caledoniadistrict.org/

http://www.nvda.net/

https://www.trorc.org/

http://www.crjc.org/lrs/upper-valley/

https://www.whiterivernrcd.org/

http://centralvtplanning.org/

https://www.vermontriverconservancy.org/

Connecticut River Paddlers Trail

Connecticut River Farmers Watershed Alliance

Watersheds United Vermont

Lake Morey Commission

SHARE YOUR RECOMMENDATIONS for the BASIN 14
PLAN

https://www.connecticutriverpaddlerstrail.org/crpt7/

https://www.crwfa.org/

https://watershedsunitedvt.org/

https://www.surveymonkey.com/r/CSS8LKR