

STATE OF VERMONT

2024

303(d) LIST OF IMPAIRED WATERS

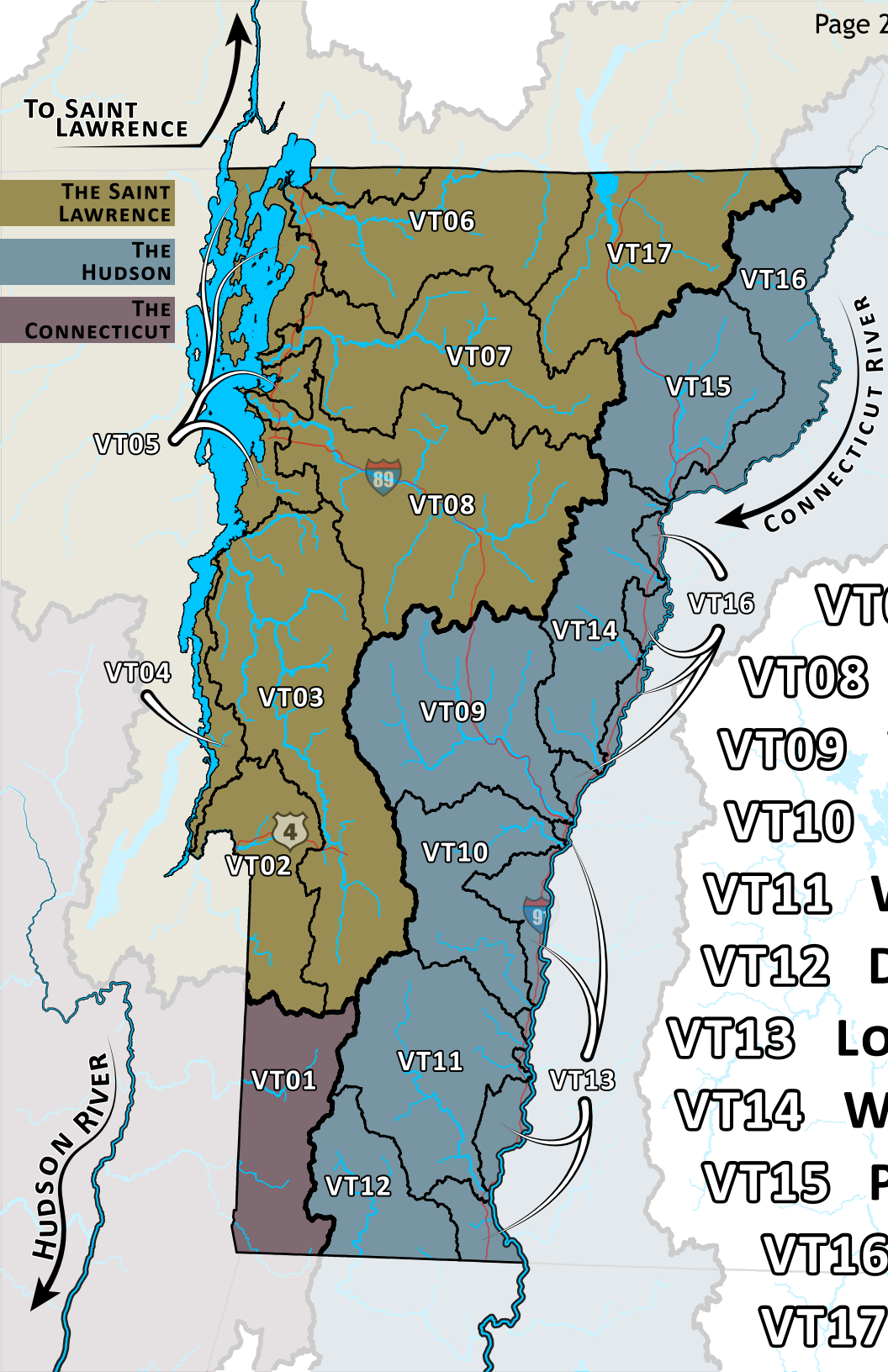
PART A. IMPAIRED SURFACE WATERS IN NEED OF TMDL

August 1, 2024

**Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522**

www.watershedmanagement.vt.gov

VERMONT WATERSHED PLANNING BASINS



- VT01 BATTENKILL
- VT02 POULTNEY-METTAWEE
- VT03 OTTER CREEK
- VT04 SOUTH LAKE CHAMPLAIN
- VT05 NORTH LAKE CHAMPLAIN
- VT06 BATTENKILL
- VT07 LAMOILLE
- VT08 WINOOSKI
- VT09 WHITE
- VT10 OTTAUQUECHEE
- VT11 WEST
- VT12 DEERFIELD
- VT13 LOWER CONNECTICUT
- VT14 WELLS, WAITS, OMPOMPANOOSUC
- VT15 PASSUMPSIC
- VT16 UPPER CONNECTICUT
- VT17 MEMPHREMAGOG

Part A of the 2024 List of Priority Waters identifies impaired surface waters where a total maximum daily load (TMDL) is required. Part A of the List has been prepared in accordance with the Vermont Surface Water Assessment and Listing Methodology, current EPA Guidance and the Environmental Protection Regulations 40 CFR 130.7. A TMDL is deemed necessary for these waters (unless remediation will be completed prior to the scheduled TMDL) in order to establish the maximum limit of a pollutant that may be introduced into the water and still ensure the Water Quality Standards are attained and maintained. ** Identify new listings.

- Waterbody ID - The two digits following VT identifies the MAJOR VERMONT RIVER BASIN illustrated above and the two digits following - identifies the sub basin or mainstem within the major basin.
- Code - If the code contains an L the listing is a Lake within the sub basin and if the code is two digits the listing is a river reach within the sub basin or mainstem.
- Impaired Use(s) - (AB) Aquatic biota and wildlife that may utilize or are present in the waters; (AH) Aquatic habitat to support aquatic biota, wildlife, or plant life; (CR) The use of waters for swimming and other primary contact recreation; (RF) The use of waters for fishing and related recreational uses; (RB) The use of waters for boating and related recreational uses; (AES) The use of waters for the enjoyment of aesthetic conditions
- TMDL Priority - An indication of priority as to when TMDLs will be completed (High = 1-3 years, Medium= 4-8 years, Low = 8+ years)

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT01-02	01	Hoosic River, Entire 7 Mile Length in Vermont	FC	PCBS IN FISH TISSUE	Elevated levels of toxic contaminant in Brown Trout	Low
	02	Ladd Brook, Mouth to rm 0.4	AB	SEDIMENTATION/ SILTATION	Indication of sediment stress; potential impacts from eroding gravel roads	Medium
VT01-03	01	Barney Brook, Mouth to rm 1.5	AB, AES	IRON, SEDIMENTATION/ SILTATION	Downstream of landfill, hazardous site, and constructed wetlands; silt and iron precipitate impact fish/invertebrates	Medium
	08	Walloomsac River, New York State border upstream to rm 9.2	AB	NUTRIENTS	Bennington WWTF discharge	Low
	09	Jewett Brook from its mouth upstream to Fuller Road	AB	NUTRIENTS	Agricultural land uses as source of nutrient	Medium
VT01-05	01	Lye Brook, rm 2.5 to Headwaters (4.5 Miles)	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
	03	Munson Brook	AB	SEDIMENTATION/ SILTATION	Runoff from developed lands, chloride stress biological community	Low
VT01-06	01	Branch Pond Brook (Pond to Roaring Branch)	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
	02	Fayville Branch, rm 3.7 to Headwaters	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
	L04	Lost (Sundld)	AH	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
VT02-02	01	Hubbardton River, Trib #7, Below WWTF Discharge	AB	NUTRIENTS	Benson WWTF, agricultural runoff, elevated chloride possible sources	Medium
VT02-05	02	Unnamed Trib to Indian River	AH	ZINC, IRON	Pawlet landfill leachate, monitoring to continue to better identify source location	Low
	04	Mettawee River, Flower Brook Confluence Downstream 4.3 Mi.	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
VT03-01	02	Lower Otter Creek, Mouth Upstream to Vergennes Dam (Approx 7.6 Miles)	CR	ESCHERICHIA COLI (E. coli)	Periodic & recurring overflows at pump stations within the collection system	Low
VT03-04	02	Pleasant Brook from Leicester-Whiting Rd Upstream to VT Route 73e (2.2 Miles)	AB	NUTRIENTS	Runoff from agricultural lands	High
VT03-05	01	Otter Creek, Vicinity of Rutland City WWTF	AES, CR	ESCHERICHIA COLI (E. coli), ORGANIC ENRICHMENT (SEWAGE) BIOLOGICAL INDICATORS	Rutland City WWTF collection system passes CSOs	Low
VT03-06	02	Mussey Brook, Mouth to rm 0.1	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
	06	Mussey Brook, rm 0.1 to rm 0.5	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
	01	Moon Brook, Mouth to 1.8	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
VT03-07	07	Little Otter Creek from rm 4.2 (Route 7) to rm 7.0 (Echo Rd)	AB	SEDIMENTATION/ SILTATION, PHOSPHORUS	Agricultural land uses as sources of nutrient and sediment, lack of riparian buffer as contributing stressor	High
VT03-09	L01	Jerome Pond	AES	TOTAL PHOSPHORUS	Excessive phosphorus; reduced clarity	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT03-12	02	Halnon Brook, Tributary #10	AB	NUTRIENTS	Elevated nutrients affect aquatic biota	Medium
VT03-14	01	East Creek, Mouth to 0.2 Mi (Below CSO Discharge Pts #2, 3, 4, & 5)	AES, CR	ORGANIC ENRICHMENT (SEWAGE) BIOLOGICAL INDICATORS, ESCHERICHIA COLI (E. coli)	Rutland City collection system CSO	Low
	04	Tenney Brook, Mouth to rm 1.0	AB	CAUSE UNKNOWN	Failed biological criteria; stressors include elevated temperature, nutrients and developed land runoff	Low
VT04-01	L01	Otter Creek Section - Lake Champlain (Ferrisburg)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
	L02	Port Henry Section - Lake Champlain (Ferrisburg)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
VT04-02	L01	Southern Section - Lake Champlain (Bridport)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
VT05-01	01	Rock River, Mouth to VT/Quebec Border (3.6 Miles)	AES, AH	SEDIMENTATION/ SILTATION, NUTRIENTS	Algal growth; agricultural runoff	High
	02	Rock River, Upstream from Quebec/VT Border (Approx 13 Miles)	AB	NUTRIENTS, SEDIMENTATION/ SILTATION	Nutrient enrichment; agricultural runoff	Medium
	03	Saxe Brook (Trib to Rock River) from Mouth Upstream 1 Mile	AB	NUTRIENTS	Agricultural runoff	Medium
VT05-04	L01	Northeast Arm - Lake Champlain (Swanton)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
	L02	Isle La Motte - Lake Champlain (Alburg)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT05-07	01	Rugg Brook, from Mouth to Approx 3.1 Miles Upstream	AB, AES, CR	NUTRIENTS, ESCHERICHIA COLI (E. coli), SEDIMENTATION/ SILTATION	Agricultural runoff	Medium
	03	Jewett Brook (3.5 Miles)	AB	SEDIMENTATION/ SILTATION, NUTRIENTS	Agricultural runoff	High
	04	Mill River, from St. Albans Bay to 1.8 Miles Upstream	AB	SEDIMENTATION/ SILTATION, NUTRIENTS	Agricultural runoff, streambank erosion	Medium
	05	Stevens Brook, Mouth Upstream 6.5 Miles	AB, CR	SEDIMENTATION/ SILTATION, NUTRIENTS, ESCHERICHIA COLI (E. coli)	Agricultural runoff; morphological instability; St Albans CSO	Medium
	06	Stevens Brook, Lasalle St Downstream 0.5 Miles	AB, CR	METALS	Sediment contamination from St Albans Gas and Light hazardous waste site	Low
	L01	St. Albans Bay - Lake Champlain (St. Albans)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
	L01	Malletts Bay - Lake Champlain (Colchester)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
VT05-10	01	Englesby Brook, Mouth to rm 1.3	AB	CHLORIDE	Elevated chloride levels due to road salt	High
	L01	Burlington Bay - Lake Champlain (Burlington)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
	L02	Main Section - Lake Champlain (South Hero)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
VT05-11	03	Potash Brook, Mouth Upstream 1 Mile	AB	CHLORIDE	Elevated chloride levels due to road salt	High
	07	Potash Brook, I189 River Upstream 4.2 Miles	AB	CHLORIDE	Elevated chloride levels due to road salt	High

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
	12	Upper Potash Brook, Kennedy Drive to Above Route 89	AB	CHLORIDE	Elevated chloride levels due to road salt	High
	06	Mccabes Brook, Mouth to rm 1.4	AB	NUTRIENTS	Includes above and below WWTF; possible toxic impact below WWTF; unstable channel above	Medium
	L01	Shelburne Bay - Lake Champlain (Shelburne)	FC	PCBS IN FISH TISSUE	Elevated levels of PCBs in lake trout	Low
	01	Munroe Brook, Mouth to rm 2.8 (Including North Trib.)**	AB	CHLORIDE	Chloride concentration above chronic criteria based on continuous monitoring	High
	02	Bartlett Brook, Mouth to rm 0.7**	AB	CHLORIDE	Chloride concentration above chronic criteria based on continuous monitoring	High
	05	Mud Hollow Brook, mouth upstream 3 miles**	AB	NUTRIENTS	Elevated phosphorus and nitrogen concentrations due to runoff from agricultural lands.	Medium
VT05-12	03	Holmes Creek, mouth upstream 2.7 miles**	AB	SEDIMENTATION/ SILTATION, NUTRIENTS	Elevated phosphorus and nitrogen concentrations and sedimentation due to riparian encroachment and runoff from agricultural lands.	Low, Medium
VT06-03	01	Morrow Brook from Its Mouth Upstream 2 Miles	AB	NUTRIENTS	Runoff from agricultural lands	High
VT06-04	01	Berry Brook, Mouth Up to and Including N. Trib (Approx. 1 Mile)	AB, AES	NUTRIENTS, SEDIMENTATION/ SILTATION	Agricultural runoff, aquatic habitat impacts	High
	02	Godin Brook	AB, AES	NUTRIENTS, SEDIMENTATION/ SILTATION	Agricultural runoff, aquatic habitat impacts	High
	03	Samsonville Brook	AB, AES	NUTRIENTS, SEDIMENTATION/ SILTATION	Agricultural runoff, aquatic habitat impacts	Medium

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
	04	Trout Brook, Upstream from Mouth for 2.3 Miles	AB	NUTRIENTS	Runoff from agricultural lands	Medium
	06	Giddings Brook from Its Confluence with the Missisquoi Upstream 4 Miles	AB	POLLUTANTS IN URBAN STORMWATER, NUTRIENTS	Runoff from agricultural and developed lands	Low, Medium
VT06-05	02	Wanzer Brook (Mouth to rm 4.0)	AB	NUTRIENTS, SEDIMENTATION/ SILTATION	Agricultural runoff	High
VT06-08	03	Mud Creek, from Vt/ Que Border Up to rm 6.5 (Approx. 3.2 Miles)	AB, AES	NUTRIENTS, SEDIMENTATION/ SILTATION	Agricultural runoff; nutrient enrichment impacts macroinvertebrates	High
	04	Coburn Brook (Mouth to rm 0.2)	AB	NUTRIENTS	Agricultural activities and runoff	Medium
	05	Burgess Brook, rm 4.9 to 5.4	AB, CR	SEDIMENTATION/ SILTATION, ASBESTOS	Asbestos mine tailings erosion; asbestos fibers	Low
	06	Burgess Brook Tributary# 11, Mouth to rm 0.5	AB, CR	SEDIMENTATION/ SILTATION, ASBESTOS	Asbestos mine tailings erosion; asbestos fibers	Low
	09	Jay Branch Tributary # 7 (2.2 Mi.)	AB	SEDIMENTATION/ SILTATION	Erosion from parking areas and on-mountain activities	Medium
	10	Ace Brook, rm 0.7 to Headwaters 1 Miles	AB	SEDIMENTATION/ SILTATION	Sediment discharges and hydrologic change from logging activity	Low
VT07-01	03	Lamoille River Trib #4, rm 0.4 to rm 0.7	AB	METALS	Old Milton landfill (Pb, Zn, Cu, Fe) impacts macroinvertebrates	Medium
VT07-03	01	Deer Brook, Mouth to 2.5 Miles Upstream	AB	SEDIMENTATION/ SILTATION	Erosion from stormwater discharges; corroding road culverts; BMPs implemented	Medium
	02	Stones Brook from 150 Feet Below Fairfax Road Upstream to the Confluence with Halfmoon Brook (1 Mile)	AB	NUTRIENTS	Agricultural runoff, loss of riparian buffer	High
	L01	Halfmoon	AES	TOTAL PHOSPHORUS	Extremely elevated TP; agricultural influences	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT07-08	01	Rodman Brook, Mouth to rm 0.6	AB, AES	IRON	Impacts from landfill leachate; bio community improving; monitoring to continue	Medium
VT07-13	01	Trib #10 to Brewster River (1 Mile)	AB, AES	IRON	Iron seeps on streambank, BMPs in place	Low
VT07-15	01	Hutchins Brook, rm 2.0 to 3.0	AB, AES, CR	SEDIMENTATION/ SILTATION, ASBESTOS	Asbestos mine tailings erosion; asbestos fibers	Low
	02	Hutchins Brook Tributary #4, Mouth to rm 0.3	AB, AES, CR	ASBESTOS, SEDIMENTATION/ SILTATION	Asbestos mine tailings erosion; asbestos fibers	Low
VT08-01	01	Winooski River, Mouth to Winooski Dam	CR	ESCHERICHIA COLI (E. coli)	Burlington CSOs	Low
VT08-02	03	Muddy Brook Tributary #4 and Trib to Trib #4	AB	CHLORIDE, TOXICITY	Chloride criteria exceeded; impacts to macroinvertebrates	Low
	05	Centennial Brook, Mouth to rm 1.2	AB	CHLORIDE	Elevated chloride levels due to road salt	High
	07	Unnamed Trib to Winooski River	AH	ARSENIC, IRON	South Burlington landfill leachate entering surface water.	Low
	L01	Shelburne Pond	CR, RF	PHOSPHORUS	Excessive algae and native plant growth causes periodic low dissolved Oxygen and fish kills	Low
	06	Morehouse Brook, Mouth to rm 0.6**	AB	CHLORIDE	Chloride concentration above chronic criteria based on continuous monitoring	High
VT08-04	02	Goose Pond Brook	AB	pH, LOW	Chronic acidification	Low
VT08-05	01	Winooski River Above Montpelier WWTF Discharge	CR	ESCHERICHIA COLI (E. coli)	Montpelier WWTF collection system passes CSOs	Low
VT08-07	01	Winooski River, Plainfield rm 70.7 to rm 71.4	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
	02	Winooski River, Marshfield, rm 72.8 Up to Confluence with Mollys Brook	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli, impairment continues upstream into VT08-09	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT08-08	01	Muddy Brook (0.1 Mile)	AH	CADMIUM	CV landfill leachate entering surface water	Low
	02	Blanchard Brook, Mouth to rm 0.4	AB	CAUSE UNKNOWN, TEMPERATURE	Failed biocriteria; stressors include temperature, chloride, sediment, nutrients and developed land runoff	Medium
VT08-09	03	Winooski River, Cabot, Mollys Falls Brook Up to rm 83.8	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli; continuation of downstream impairment from VT08-07	Low
VT08-11	L02	Waterbury Reservoir (Waterbury)	AB, AES, AH	SEDIMENTATION/ SILTATION	Sedimentation, turbidity	Low
VT08-12	01	Inn Brook, rm 0.3 to 0.6	AB, AES	IRON	Iron seeps originating from disturbed soils	Low
	10	Little Spruce Brook	AB	POLLUTANTS IN URBAN STORMWATER	The stressors to aquatic biota include chloride, sedimentation and erosion.	Low
	05	Big Spruce Brook from river mile 0.8 (100m below Spruce Peak road) downstream to its confluence with Little Spruce Brook**	AB	IRON	Extensive iron seeps resulting in extensive iron bacteria mats inhibits the macroinvertebrate community.	Low
	12	Big Spruce Brook from its confluence with Little Spruce Brook downstream to its confluence with West Branch Little River**	AB	IRON, POLLUTANTS IN URBAN STORMWATER	Primary stressors are a combination of the upstream iron precipitate issues in Big Spruce Brook and the chloride/sediment/erosion issues documented in Little Spruce Brook.	Low
VT08-13	01	Lower North Branch, Winooski River Mouth to Montpelier Rec Fields	CR	ESCHERICHIA COLI (E. coli)	Montpelier WWTF collection system passes CSOs	Low
VT08-16	01	Gunner Brook, Below Farwell St. Dump (Approx 0.5 Mile)	AB, AES, CR	TOXICITY, SEDIMENTATION/ SILTATION	Farwell St. landfill leachate, surface runoff from developed area	Medium

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT08-17	04	Stevens Branch, from Barre City Limits to Mouth, 5.8 Miles	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated e. coli, urban runoff	Low
	01	Dog River, Riverton Canoe Access Downstream 0.5 Miles	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
	L01	Beaver (Roxbry)	AH	pH, LOW	Atmospheric deposition; extremely sensitive to acidification; episodic acidification	Medium
VT08-20	01	Clay Brook, rm 1.8 to rm 2.3	AB, AES	IRON, POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, erosion from construction activities & gravel parking lot; increased peak stormwater flows	Low
VT09-04	01	First Branch White River, Mouth to rm 15.2	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
VT09-05	01	Second Branch White River, Mouth to rm 9.8	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
VT09-06	01	Smith Brook (Mouth to rm 0.3)	AB, AES	IRON	Apparent leachate from adjacent old dump	Medium
	02	Third Branch White River, Mouth to rm 4.3	CR	ESCHERICHIA COLI (E. coli)	Consistently elevated E. coli	Low
VT10-04	01	Small Stream to Ottauquechee River (Bridgewater)	AES, AH	IRON	Bridgewater landfill; leachate entering surface water	Medium
VT10-06	01	Roaring Brook, rm 3.5 to rm 4.2	AB, AES	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development, erosion	Low
	02	E. Branch Roaring Brook, rm 0.1 to rm 0.6	AB, AES	POLLUTANTS IN URBAN STORMWATER, IRON	Stormwater runoff, land development, erosion	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT11-10	01	West River, Below Ball Mountain Dam to Townshend Dam (9 Miles)	RF	TEMPERATURE	Artificial flow regime at dam	Low
VT11-15	04	Bear Creek Brook, rm 0.7 to Headwaters	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
	05	Kidder Brook, Confluence of Sun Bowl Brook to Headwaters	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
VT12-03	01	East Branch Deerfield River, Below Somerset Dam	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification, low temperature dam release	Medium
VT12-04	01	Upper Deerfield River, Below Searsburg Dam	AB	pH, LOW	Atmospheric deposition: critically acidified; chronic acidification	Medium
	L05	Searsburg Reservoir (Searsburg)**	AH	pH, LOW	Atmospheric deposition: low alkalinity, extremely sensitive to acidification	Medium
VT12-05	01	No. Branch Deerfield River, Tannery Brk Rd to Snow Lake	AB	TEMPERATURE	High temperatures below Snow Lake impact aquatic biota	Low
	03	Iron Stream, Trib to Jacks Brook (0.3 Mile)	AB, AES	IRON	Land development, source(s) need further assessment	Medium
	06	Ellis Brook, Mouth to rm 0.5	AB	TEMPERATURE, NUTRIENTS	Possible impacts from NBFD WWTF, agricultural runoff and channel alterations, lack of riparian buffer; high algal cover	Medium
VT13-06	01	Neal Brook, Mouth to rm 0.4	AB	METALS	Landfill drainage impacts macroinvertebrates	Medium
VT13-10	01	Commissary Brook Trib, Mouth to rm 0.2	AES, AH	SEDIMENTATION/ SILTATION	Bank failure and erosion due to past clay mining	Low
VT13-13	01	Crosby Brook, Mouth to rm 0.7	AB	SEDIMENTATION/ SILTATION	Habitat alterations due to sedimentation, channelization, and buffer loss	Medium
VT13-16	01	Newton Brook, Mouth to rm 2.0	AB	SEDIMENTATION/ SILTATION	Agricultural activity	Medium
VT14-02	02	Copperas Brook (1 Mile)	AB, AES, CR, FC, RB	METALS	High metals in drainage from abandoned Elizabeth mine & tailings piles	Low

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
	04	Lords Brook, Headwater Tributary #2 and Trib 2-Trib 1	AB	METALS	Abandoned mine drainage below South Cut and South Mine	Low
VT14-03	03	Schoolhouse Brook and Tributary	AB, AES	METALS	High metal concentrations in drainage from abandoned Ely Mine	Medium
VT14-05	01	Pike Hill Brook, from Mouth to 4 Miles Upstream	AB, AES	METALS	High metal concentrations in drainage from abandoned Pike Hill Mine & Tailings	Medium
	02	Tabor Branch Tributary #6, Mouth to rm 0.1	AB	CAUSE UNKNOWN	Agricultural runoff	Low
VT14-06	01	Cookville Trib #4, rm 1.0 to 1.7	AB	METALS	Acid mine drainage associated with Pike Hill mine	Low
VT15-01	01	Passumpsic River, Tremont Street Downstream 5 Miles Through St J.	CR	ESCHERICHIA COLI (E. coli)	St. Johnsbury WWTF collection system passes combined sewer overflows	Low
VT15-04	01	Lower Sleepers River in St. Johnsbury	CR	ESCHERICHIA COLI (E. coli)	St. Johnsbury WWTF collection system passes combined sewer overflows	Low
VT16-13	L04	Unknown (Ferdnd)	AH	pH, LOW	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	Medium
VT16-20	L01	Lake Morey (Fairlee)**	AES	TOTAL PHOSPHORUS	Phosphorus elevated due to internal loading from sediment.	Low
VT17-02	01	Stearns Brook Tributary (Holland)	AB	NUTRIENTS	Agricultural runoff	High
VT17-08	01	Roaring Brook, from Lake Parker down to rm 2.4	AB	NUTRIENTS	Agricultural runoff impacts macroinvertebrates	Low
VT17-09	L01	Walker (Covnty)	AES	TOTAL PHOSPHORUS	Extremely elevated TP concentrations; agricultural influences	Low
VT17-10	L02	Mud (Crafby)	AES	TOTAL PHOSPHORUS	Extremely elevated TP concentrations; agricultural influences	Low

STATE OF VERMONT

2024

LIST OF PRIORITY SURFACE WATERS

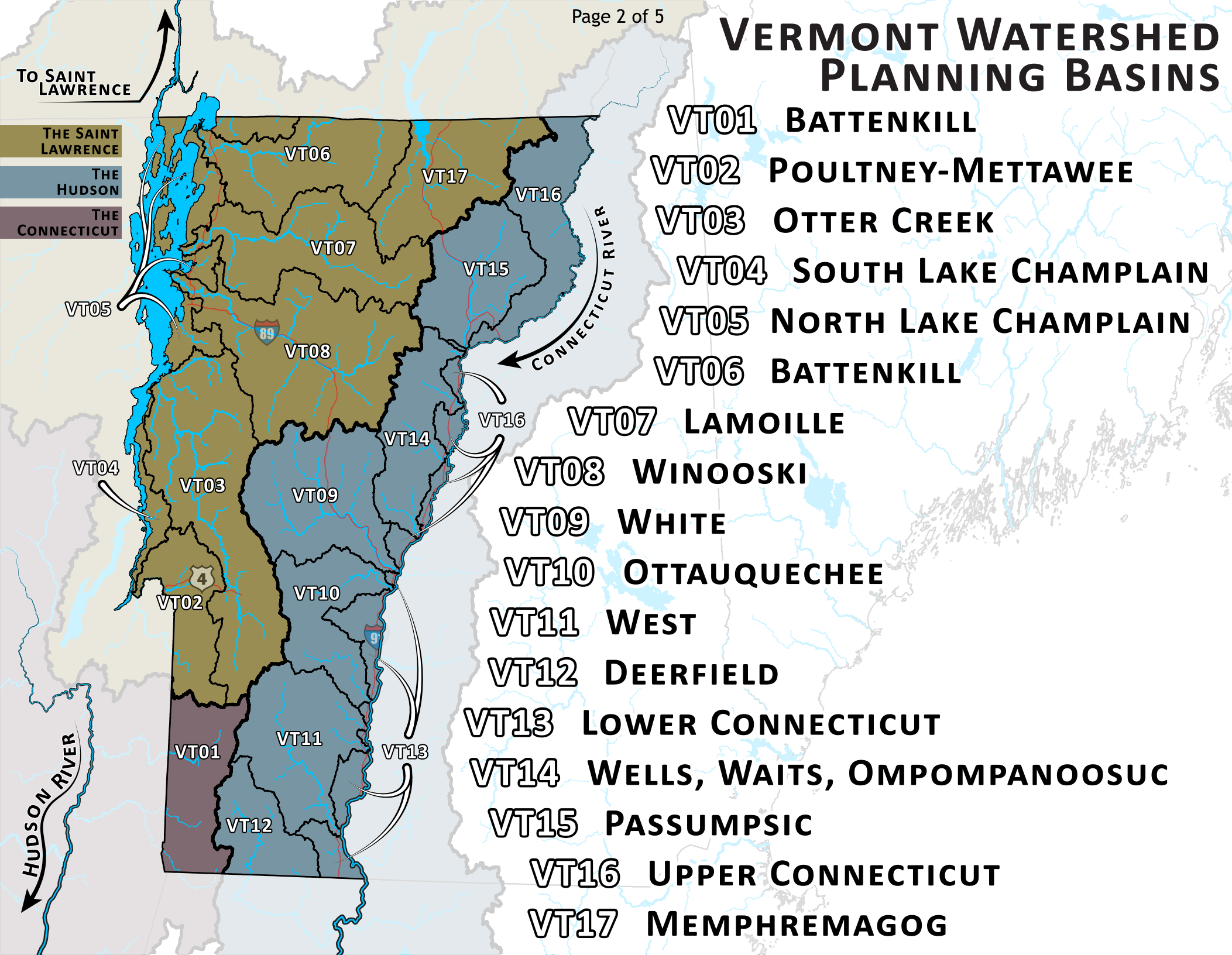
**PART B. IMPAIRED WATERS - NO TOTAL MAXIMUM DAILY
LOAD DETERMINATION REQUIRED**

January 24, 2024

Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522

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VERMONT WATERSHED PLANNING BASINS



Waters appearing below have documentation and data indicating impairment and do not meet VT Water Quality Standards. However, according to US EPA Listing Guidance, these waters do not require a TMDL because other pollution control requirements by local, state, or federal authority are stringent enough to implement any water quality standard (WQS) applicable to such waters.

- Waterbody ID - The two digits following VT identifies the MAJOR VERMONT RIVER BASIN illustrated above and the two digits following - identifies the sub basin or mainstem within the major basin.
- Code - If the code contains an L the listing is a Lake within the sub basin and if the code is two digits the listing is a river reach within the sub basin or mainstem.
- Altered Use(s) - (AB) Aquatic biota and wildlife that may utilize or are present in the waters; (AH) Aquatic habitat to support aquatic biota, wildlife, or plant life; (CR) The use of waters for swimming and other primary contact recreation; (RF) The use of waters for fishing and related recreational uses; (RB) The use of waters for boating and related recreational uses; (AES) The use of waters for the enjoyment of aesthetic conditions

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT05-10	L01	Burlington Bay Barge Canal - Lake Champlain (Burlington)	AH, ALS, CR, RB	TOLUENE, XYLENE	Contamination from coal tar in sediments of Pine Street Barge Canal (SITE #770042)

No TMDL is necessary for this impairment as authority and legal means are available and in place to address the source of impairment. The authority and legal means that are available to DEC and the US EPA are considered sufficient to attain Water Quality Standards in the future. DEC authority is under 10 VSA 6603 and 6610a. US EPA authority is CERCLA (42 USC section 9601 - 9675).

The Pine Street Barge Canal Coordinating Council (PSBC Council) is overseeing implementation of the May 1998 Cleanup Plan. Cleanup Plan was reviewed and approved by EPA. Personnel from DEC's Hazardous Materials Division participate with and serve on the Council.

This is an EPA Superfund site designated under CERCLA. There are legal requirements in place that apply to the source of the pollutants contributing to the impairment. The performance standards identified in the Statement of Work are sufficient to remediate the problem and are consistent with VT Water Quality Standards when implementation of the remediation/clean-up plan is complete.

The required "Five Year Review Report for the Pine Street Canal Superfund Site Burlington Vermont" (FYR) was produced and published by USEPA December 21, 2021 that describes the past and current conditions of various indicators of interest as related to this impairment listing. The FYR indicates: "EPA has determined, as part of the third five-year review, that the remedy at the Pine Street Canal Superfund Site is protective of human health and the environment. All construction activities specified in the 1998 ROD (Record of Decision), 2009 ESD (Explanation of Significant Differences) and 2011 ESD are complete and operating as intended. Ecological, human health and management of migration RAOs (Remedial Action Objectives) are being met. The Performing Defendants continue to perform compliance monitoring and O&M (Operation and Maintenance) and report the results to EPA and VTDEC twice a year."

DEC considers this substantial progress towards WQS compliance. However, the Department needs more time for a complete assessment of water quality before any move to delist is initiated. Furthermore, to allow complete transparency for any listing action to occur, DEC prefers that a complete public notice and comment period occur prior to action.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT06-08	07	South Mountain Branch, Tributary #3 (Mouth To Rm 0.5)	ALS	SEDIMENTATION/SILTATION	Erosion from parking areas and on-mountain activities.

No TMDL is necessary as DEC has the authority and legal means available to eliminate the sources causing this impairment. The authority and legal means that are available to DEC are sufficient to attain WQS and enable DEC to utilize enforcement authority as it exists under 10 VSA 1272.

The South Mountain Branch is a tributary Jay Branch and is in the town of Jay. The streams within the watershed are managed as Class B waters, with cold water fishery. South Mountain Branch, Tributary #3 enters the South Mountain Branch at about RM 2.3 and drains the south side of Jay Peak Mountain and portions of the Stateside lodge and parking area.

Based on biomonitoring conducted by Jay Peak Resort (JPR) and VTDEC that was initiated in 2011, Tributary #3 to South Mountain Branch shows noncompliance with VTWQS biocriteria. Indications from habitat assessments and water quality monitoring, impacts due to sediment appear to be the primary stressor. As reported in the 2012 update of the water quality remediation plan prepared for JPR, multiple problematic sediment sources have been identified as potential sites for remedial measures.

VTDEC issued a follow-up §1272 Order in 2014 to have JPR revisit the original WQRP and identify, prioritize, and implement an additional suite of remedial actions to be completed in two years. Additionally, because of private party appeals of several stormwater permits in 2014, JPR entered into a settlement agreement that establishes WQS compliance dates with interim targets, a mechanism by which additional BMPs are implemented and a monitoring plan.

Watershed BMP implementation has continued in this watershed over the past several years, but the biomonitoring conducted in 2016-2019 failed to show compliance with the VTWQS. However, in 2020, results for all eight biocriteria metrics were within the established thresholds for meeting Class B(2) criteria, indicating the first year the station has reached attainment for all metrics since sampling began in 2012. However, biomonitoring in 2021 and 2022 showed noncompliance and indeterminate results respectively. There remains a reasonable degree of biological variability at this station from year to year falling short of consistent compliance.

Progressively larger BMPs have been installed in this watershed over the past several years, including a large sediment trap that collects sediment from a large dirt parking lot adjacent to the stream. A new, large-scale BMP in the South Mountain Branch Tributary 3 Watershed is anticipated to consist of an upgraded stormwater management practice for the 242 Parking Lot that would be compliant with DEC General Permit 3-9050. Jay Peak is currently developing plans and supporting documentation for the 3-9050 Final NOI that is required to be submitted by January 31, 2024. Once approved, the 3-9050 permit will require JPR to construct any associated stormwater treatment practices within five years.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT07-01	01	Lamoille River, Route 2 To Arrowhead Mountain Lake	ALS	DISSOLVED OXYGEN	Three dams (Clarks, Milton, Peterson) create dissolved oxygen problems downstream.

No TMDL is necessary for this impaired segment as DEC has the authority and legal means available to address the dissolved oxygen (D.O.) problem found below the Clarks Falls hydroelectric facility. The authority and legal means that are available to DEC are sufficient to attain Water Quality Standards soon.

A new federal license for the Lamoille River Hydroelectric Project was issued in June 2005. Articles 407 and 408 address post-licensing water quality monitoring and D.O. enhancement, respectively. The new license provides for conservation flows that improve the D.O. regime sufficiently to obviate the need for specific mechanical enhancements, such as turbine aspiration. FERC approved the licensee's water quality monitoring and dissolved oxygen enhancement plan on December 5, 2006, although the licensee elected to initiate sampling in Summer 2006. Because of higher than normal flows in 2006, sampling continued in 2007. Conditions were again somewhat atypical in 2007 because the Milton Station was offline, resulting in highly reoxygenated flows entering Peterson impoundment. Consequently, the Department asked CVPS to continue sampling in summer 2008 before it determines whether there is sufficient data to conclude that the post-licensing operational changes have achieved compliance with the Water Quality Standards. If the data indicates that standards are not being met, the licensee must propose and implement enhancement measures, however the data was not collected. In 2022, VTDEC attempted to conduct dissolved oxygen monitoring, but efforts were stymied by a lack of equipment and staffing resources. VTDEC will continue to evaluate future monitoring approaches.

STATE OF VERMONT

2024

LIST OF PRIORITY SURFACE WATERS

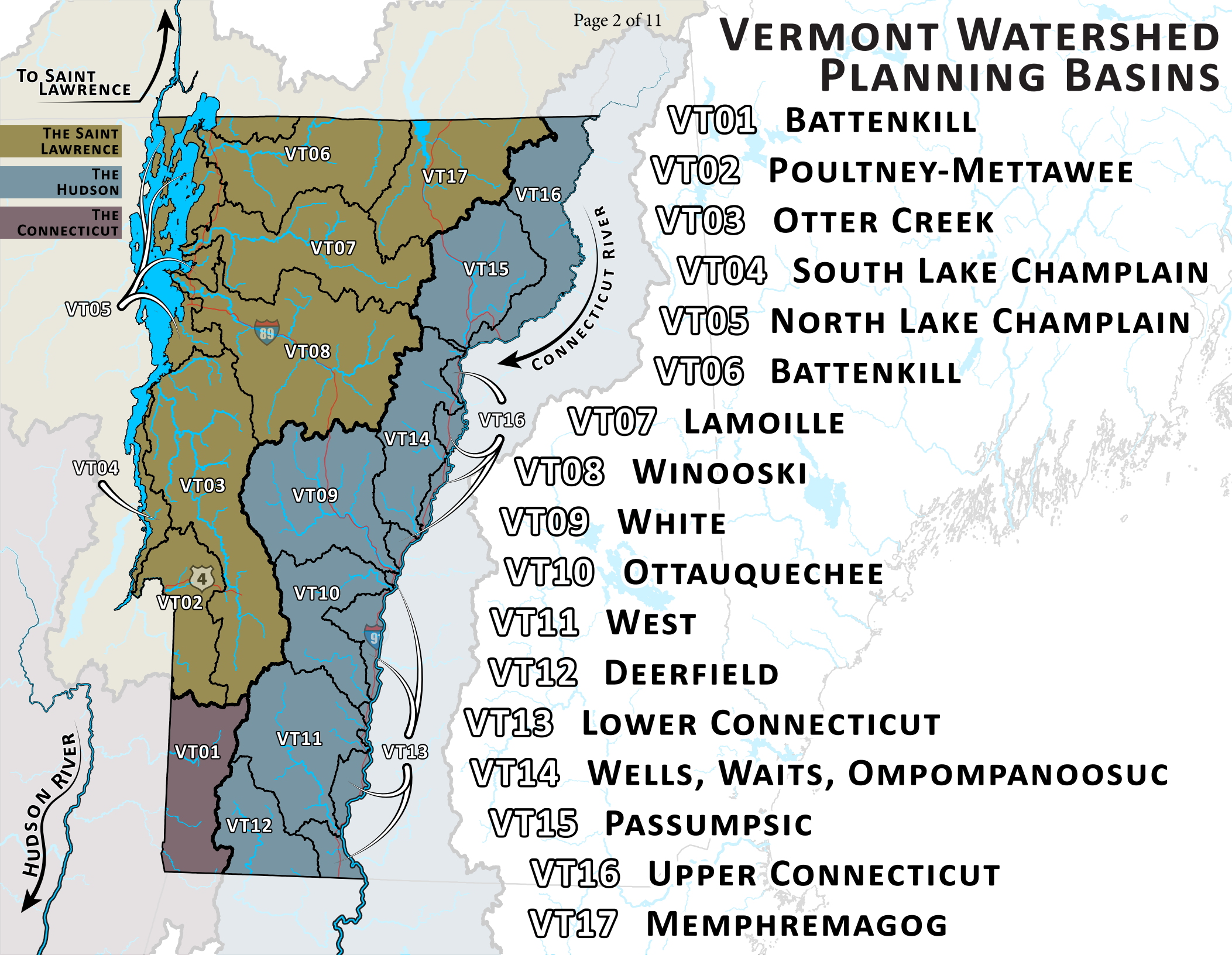
PART D. IMPAIRED SURFACE WATERS WITH A TMDL

July 29, 2024

Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522

www.watershedmanagement.vt.gov

VERMONT WATERSHED PLANNING BASINS



All waters identified on Part D are assessed as impaired and have completed and approved TMDLs in place. If future assessments show the impairment has been eliminated, the water will no longer be tracked on Part D. These waters correspond to Category 4a of EPA’s Consolidated Assessment Listing Methodology.

Waterbody ID - The two digits following VT identifies the MAJOR VERMONT RIVER BASIN illustrated above and the two digits following - identifies the sub basin or mainstem within the major basin.

Code - If the code contains an L the listing is a Lake within the sub basin and if the code is two digits the listing is a river reach within the sub basin or mainstem.

Altered Use(s) - (AB) Aquatic biota and wildlife that may utilize or are present in the waters; (AH) Aquatic habitat to support aquatic biota, wildlife, or plant life; (CR) The use of waters for swimming and other primary contact recreation; (RF) The use of waters for fishing and related recreational uses; (RB) The use of waters for boating and related recreational uses; (AES) The use of waters for the enjoyment of aesthetic conditions

** - New listing or new parameter

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
VT01-05	L01	Bourn Pond (Sunderland)	AH	ALUMINUM, TOTAL, PH	Observed AI always exceeds Acute criteria, Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
	L10	Little Mud (Winhall)	AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 20, 2004
VT01-06	L01	Branch Pond (Sunderland)	AH	ALUMINUM, TOTAL, PH	Observed AI always exceeds Acute criteria, Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003
	L02	Beebe Pond (Sunderland)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 20, 2004
VT02-01	01	Poultney River, Mouth Upstream To Hubbardton River	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
	02	Poultney River, from Hubbardton River to Carvers Falls	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT02-05	03	Flower Brook, Mouth to rm 0.5	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli monitoring results	EPA approved TMDL September 30, 2011
VT03-01	01	Otter Creek, Mouth of Middlebury River to Pulp Mill Bridge (4.0 miles)	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff, possible failed septic systems, Middlebury CSOs	EPA approved TMDL September 30, 2011
	02	Lower Otter Creek, Mouth Upstream to Vergennes Dam (Approx 7.6 Miles)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
VT03-06	01	Moon Brook, Mouth to 1.8	AB	POLLUTANTS IN URBAN STORMWATER	Elevated instream temperatures; impoundments and lack of shading	thermal TMDL completed by VTDEC and approved by EPA region 1, May 2018
	04	Moon Brook, rm 1.8 to rm 2.9	AB	TEMPERATURE, POLLUTANTS IN URBAN STORMWATER	Elevated instream temperatures; impoundments and lack of shading	thermal TMDL completed by VTDEC and approved by EPA region 1, May 2018
	02	Mussey Brook, Mouth to rm 0.1	AB	POLLUTANTS IN URBAN STORMWATER	Elevated instream temperatures; trout avoidance of stream reaches	thermal TMDL completed by VTDEC and approved by EPA region 1, May 2018
	06	Mussey Brook, rm 0.1 to rm 0.5	AB	POLLUTANTS IN URBAN STORMWATER, TEMPERATURE	Elevated instream temperatures; trout avoidance of stream reaches	thermal TMDL completed by VTDEC and approved by EPA region 1, May 2018
	05	Mussey Brook, rm 0.5 to rm 1.2	AB	POLLUTANTS IN URBAN STORMWATER, TEMPERATURE	Elevated instream temperatures; trout avoidance of stream reaches	thermal TMDL completed by VTDEC and approved by EPA region 1, May 2018
VT03-07	01	Little Otter Creek, Mouth to rm 1.0	CR, FC	ESCHERICHIA COLI (E. COLI), MERCURY IN FISH TISSUE	Elevated E. coli monitoring results; Elevated levels of Hg in walleye; fish present only seasonally; extremely low numbers	EPA approved TMDL September 30, 2011; EPA approved regional mercury TMDL on December 20, 2007
	03	Little Otter Creek, rm 1.0 to rm 4.2	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli monitoring results	EPA approved TMDL September 30, 2011
	02	Little Otter Creek, rm 15.4 to rm 16.4	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff	EPA approved TMDL September 30, 2011
VT03-08	01	Lewis Creek, Parsonage Bridge Rd (Lcr19.5) to Covered Bridge (Lcr7.3)	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff	EPA approved TMDL September 30, 2011
	02	Pond Brook, from Lewis Creek Confluence Upstream (1.5 Miles)	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff	EPA approved TMDL September 30, 2011
VT03-09	01	Lower Dead Creek, from Mouth Upstream (Approx 3 Miles)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT03-11	L01	North Pond (Bristol)	AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
	L02	Gilmore Pond (Bristol)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT03-12	01	Middlebury River, from Mouth Upstream 2 Miles	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff, livestock, possible failed septic systems	EPA approved TMDL September 30, 2011
VT03-14	L03	Chittenden Reservoir (Chittenden)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT03-18	L02	Griffith Lake (Peru)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
	L03	Big Mud Pond (Mt. Tabor)	AH	ALUMINUM, TOTAL, PH	Observed AI always exceeds Acute criteria, Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
	L06	Long Hole (Mt. Tabor)	AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003
	L07	Little Mud (Mt. Tabor)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT04-01	L01	Otter Creek Section - Lake Champlain (Ferrisburg)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
	L02	Port Henry Section - Lake Champlain (Ferrisburg)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT04-02	L01	Southern Section - Lake Champlain (Bridport)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT04-04	L05	Southern Section (B) - Lake Champlain (Bridport)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
VT05-01	L01	Missisquoi Bay - Lake Champlain (Alburg)	AES, CR, FC	MERCURY IN FISH TISSUE, PHOSPHORUS	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT05-02	L01	Lake Carmi (Franklin)	AES, AH, CR, RB	PHOSPHORUS	Algae blooms	EPA approved TMDL April 13, 2009
VT05-04	L01	Northeast Arm - Lake Champlain (Swanton)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
	L02	Isle La Motte - Lake Champlain (Alburg)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
VT05-07	02	Rugg Brook, rm 3.1 to rm 5.3	AB, AES	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff	EPA approved TMDL February 19, 2009
	07	Stevens Brook, rm 6.5 (Pearl St) to rm 9.3	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, erosion/ sedimentation, morphological instability	EPA approved TMDL February 19, 2009
	L01	St. Albans Bay - Lake Champlain (St. Albans)	AES, CR, FC	PHOSPHORUS, MERCURY IN FISH TISSUE	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
VT05-09	01	Indian Brook, rm 5.8 (Suzie Wilson Rd) to rm 9.8	AB, AES	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development, erosion	EPA approved TMDL August 21, 2008
	02	Direct Smaller Drainages to Inner Malletts Bay	CR	ESCHERICHIA COLI (E. COLI)	Urban runoff, potential failed/failing septic systems; includes Smith Hollow Brook & Crooked Creek	EPA approved TMDL September 30, 2011
	L01	Malletts Bay - Lake Champlain (Colchester)	AES, CR, FC	MERCURY IN FISH TISSUE, PHOSPHORUS	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT05-10	01	Englesby Brook, Mouth to rm 1.3	AB, AES, CR, RB	POLLUTANTS IN URBAN STORMWATER, ESCHERICHIA COLI (E. COLI)	Stormwater runoff, blanchard beach closure	EPA approved TMDL September 30, 2007, PROBLEM: Elevated E. coli levels
	L01	Burlington Bay - Lake Champlain (Burlington)	AES, CR, FC	MERCURY IN FISH TISSUE, PHOSPHORUS	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
	L02	Main Section - Lake Champlain (South Hero)	AES, CR, FC	MERCURY IN FISH TISSUE, PHOSPHORUS	Phosphorus enrichment	EPA approved Lake Champlain phosphorus TMDL June 2016
VT05-11	03	Potash Brook, Mouth Upstream 1 Mile	AB, CR	POLLUTANTS IN URBAN STORMWATER, ESCHERICHIA COLI (E. COLI)	Stormwater runoff, land development, erosion	EPA approved TMDL December 19, 2006
	07	Potash Brook, I189 River Upstream 4.2 Miles	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development, erosion	EPA approved TMDL December 19, 2006
	04	Laplatte River, at Mouth	CR, FC	MERCURY IN FISH TISSUE, ESCHERICHIA COLI (E. COLI)	Agricultural runoff	EPA approved TMDL September 30, 2011
	08	Laplatte River from Hinesburg to rm 0.2	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff	EPA approved TMDL September 30, 2011

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
	01	Munroe Brook, Mouth to rm 2.8 (Including North Trib.)	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, erosion, land development	EPA approved TMDL August 21, 2008
	02	Bartlett Brook, Mouth to rm 0.7	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development, erosion	EPA approved TMDL September 30, 2007
	05	Mud Hollow Brook, mouth upstream 3 miles	CR	ESCHERICHIA COLI (E. COLI)	Agricultural runoff, streambank erosion	EPA approved TMDL September 30, 2011
	L01	Shelburne Bay - Lake Champlain (Shelburne)	AES, CR, FC	MERCURY IN FISH TISSUE, PHOSPHORUS	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT06-01	01	Missisquoi River, Mouth to Swanton Dam	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT06-04	01	Berry Brook, Mouth Up to and Including N. Trib (Approx. 1 Mile)	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli levels	EPA approved TMDL September 30, 2011
	02	Godin Brook	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli levels	EPA approved TMDL September 30, 2011
	03	Samsonville Brook	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli levels	EPA approved TMDL September 30, 2011
VT06-06	L01	Kings Hill Pond (Bakersfield)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT07-01	02	Lamoille River, Mouth to Route 2	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
	01	Lamoille River, Route 2 to Arrowhead Mountain Lake	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT07-03	L03	Arrowhead Mountain Lake (Milton)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT07-13	L02	Lake-Of-The-Clouds (Cambridge)	AB, AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003
VT08-01	01	Winooski River, Mouth to Winooski Dam	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007
VT08-02	01	Allen Brook, rm 2.4 to rm 5.0 (Talcott Rd)	AB, CR	ESCHERICHIA COLI (E. COLI), POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development; erosion	EPA approved TMDL August 21, 2008

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
	04	Sunderland Brook, rm 3.5 (Rt. 7) to rm 5.3	AB, AES	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development; erosion	EPA approved TMDL August 21, 2008
	05	Centennial Brook, Mouth to rm 1.2	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, land development; erosion	EPA approved TMDL September 30, 2007
	06	Morehouse Brook, Mouth to rm 0.6	AB	POLLUTANTS IN URBAN STORMWATER	Stormwater runoff, erosion	EPA approved TMDL September 30, 2007
	08	Sunnyside Brook (Trib #8 to Sunderland Brook) (1.2 Mi.)	AB	CHLORIDE	Elevated chloride levels due to road salt	EPA approved TMDL June 17, 2024
VT08-10	01	Huntington River, Vicinity of Bridge Street in Huntington	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli levels detected at several sampling stations	EPA approved TMDL September 30, 2011
VT08-18	01	Mad River, Mouth to Moretown (6.2 Miles)	CR	ESCHERICHIA COLI (E. COLI)	Possible failing septic systems and other unknown sources; elevated E. coli levels	EPA approved TMDL September 30, 2011
VT09-07	L01	Skylight Pond (Ripton)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 20, 2004
VT11-08	L01	Sunset Lake (Marlboro)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT11-15	02	Styles Brook (2 Miles)	AB, AES	SEDIMENT	Land development, hydrologic modification	EPA approved TMDL June21, 2002
	L01	Forester Pond (Jamaica)	AH	PH, ALUMINUM, TOTAL	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003, Observed AI always exceeds Acute criteria
	L02	Little Pond (Winhall)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 20, 2004
VT11-16	L01	Stratton Pond (Stratton)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT11-17	01	West River, Approx 1 Mile Below to 0.5 Mile Above South Londonderry	CR	ESCHERICHIA COLI (E. COLI)	Possible septic system discharges	EPA approved TMDL September 30, 2011
VT11-18	L06	Moses (Weston)	AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003
VT12-01	L01	Harriman Reservoir (Whitingham)	FC	MERCURY IN FISH TISSUE	Elevated level of mercury in all fish except brown bullhead	EPA approved regional mercury TMDL on December 20, 2007

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
	L04	Sherman Reservoir (Whitingham)	FC	MERCURY IN FISH TISSUE	Elevated level of mercury in all fish except brown bullhead	EPA approved regional mercury TMDL on December 20, 2007
VT12-02	L02	Howe Pond (Readsboro)	AH	ALUMINUM, TOTAL, PH	Observed AI consistently exceeds Acute criteria, Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
	L03	Stamford Pond (Stamford)	AH	PH, ALUMINUM, TOTAL	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003, Observed AI consistently exceeds Acute criteria
VT12-03	01	East Branch Deerfield River, Below Somerset Dam	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in all fish	EPA approved regional mercury TMDL on December 20, 2007
	L01	Grout Pond (Stratton)	AH, FC	PH, MERCURY IN FISH TISSUE, ALUMINUM, TOTAL	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003, Observed AI consistently exceeds Acute criteria
	L02	Somerset Reservoir (Somerset)	AH, FC	MERCURY IN FISH TISSUE, PH	Elevated level of mercury in all fish except brown bullhead	EPA approved regional mercury TMDL on December 20, 2007
VT12-04	01	Upper Deerfield River, Below Searsburg Dam	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in all fish	EPA approved regional mercury TMDL on December 20, 2007
	L01	Adams Reservoir (Woodford)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
	L04	Little Pond (Woodford)	AH	PH, ALUMINUM, TOTAL	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003, Observed AI consistently exceeds Acute criteria
	L05	Searsburg Reservoir (Searsburg)	FC	MERCURY IN FISH TISSUE	Elevated level of mercury in all fish except brown bullhead	EPA approved regional mercury TMDL on December 20, 2007
VT12-05	02	No. Branch, Deerfield River, Vicinity of West Dover	CR	ESCHERICHIA COLI (E. COLI)	High E. coli levels; cause(s) & source(s) unknown; needs assessment	EPA approved TMDL September 30, 2011
	L01	Haystack Pond (Wilmington)	AH	ALUMINUM, TOTAL, PH	Observed AI always exceeds Acute criteria, Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	Status
VT12-07	L01	South Pond (Marlboro)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT13-14	01	Whetstone Brook, Bend Northwest of Living Memorial Park Downstream	CR	ESCHERICHIA COLI (E. COLI)	Sources unknown, potentially faulty sewer line/septic system	EPA approved TMDL September 30, 2011
VT14-03	01	Ompompanoosuc River, Usacoe Beach Area to Brimstone Corner (9.8 Mi)	CR	ESCHERICHIA COLI (E. COLI)	Elevated E. coli levels	EPA approved TMDL September 30, 2011
VT14-07	L01	Levi Pond (Groton)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 20, 2004
VT16-04	L01	Moore Reservoir (Waterford)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in all fish	EPA approved regional mercury TMDL on December 20, 2007
VT16-05	L01	Comerford Reservoir (Barnet)	FC	MERCURY IN FISH TISSUE	Elevated levels of mercury in all fish	EPA approved regional mercury TMDL on December 20, 2007
VT16-11	L01	Unknown Pond (Averys Gore)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT17-01	L01	Lake Memphremagog	AES, CR	PHOSPHORUS	Excessive algae growth, nutrient enrichment	EPA approved TMDL September 28, 2017
VT17-02	L06	Duck Pond (Holland)	AH	PH	Atmospheric deposition: extremely sensitive to acidification; episodic acidification	EPA approved TMDL September 30, 2003
VT17-03	L03	Halfway Pond (Norton)	AH	PH	Atmospheric deposition: critically acidified; chronic acidification	EPA approved TMDL September 30, 2003
VT17-04	L04	Lake Salem (Derby)	FH	MERCURY IN FISH TISSUE	Elevated levels of mercury in walleye	EPA approved regional mercury TMDL on December 20, 2007



STATE OF VERMONT

2024

LIST OF PRIORITY SURFACE WATERS

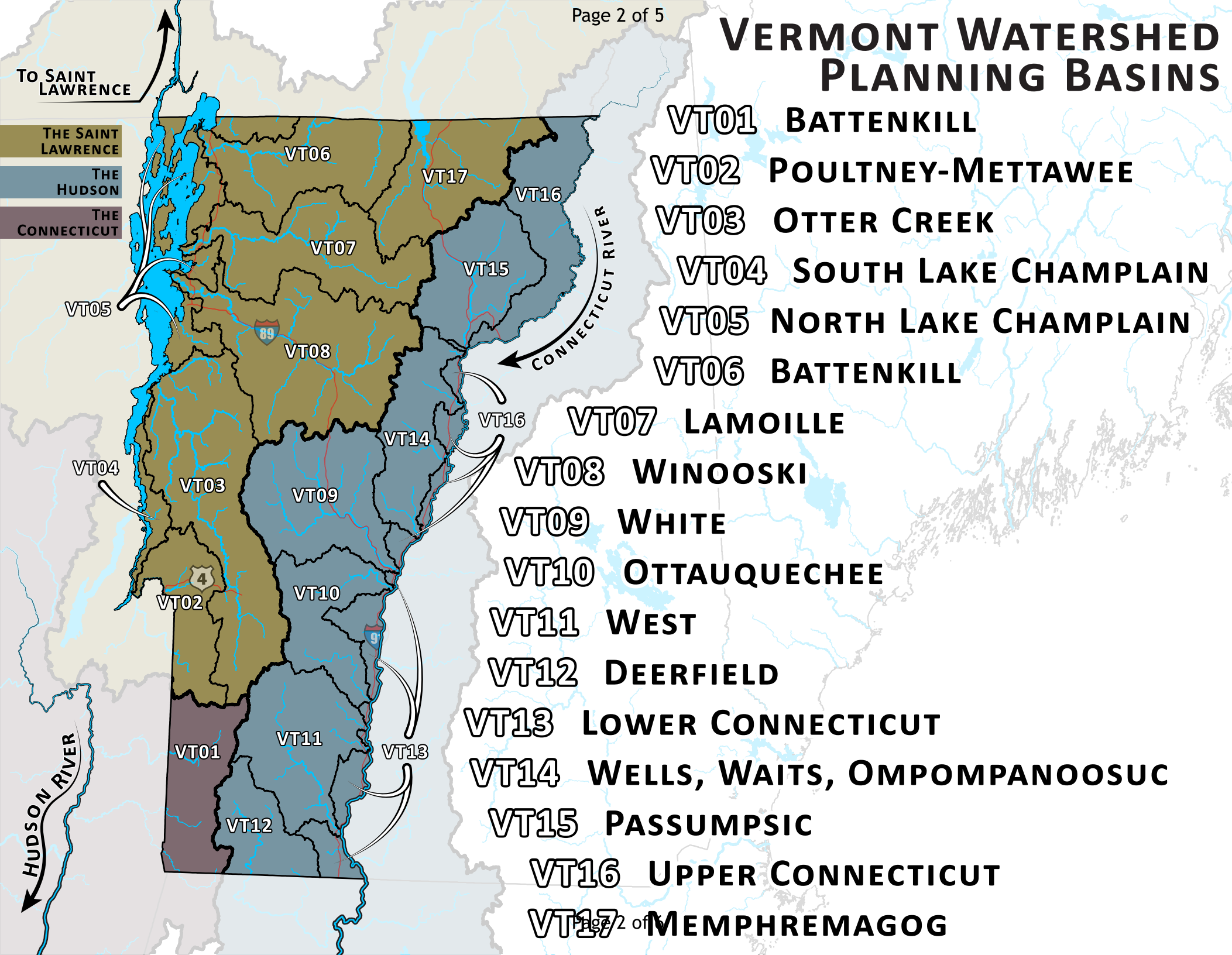
**PART E. SURFACE WATERS ALTERED BY
AQUATIC INVASIVE SPECIES**

January 24, 2024

Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522

www.watershedmanagement.vt.gov

VERMONT WATERSHED PLANNING BASINS



Waters appearing in Part E are assessed as “altered.” They represent situations to be given priority for management where aquatic habitat and/or other designated uses are not supported due to the presence of invasive aquatic species. These waters correspond to Category 4c of EPA’s Consolidated Assessment Listing Methodology. **

Identify new listings.

Waterbody ID -	The two digits following VT identifies the MAJOR VERMONT RIVER BASIN illustrated above and the two digits following - identifies the sub basin or mainstem within the major basin.
Code -	If the code contains an L the listing is a Lake within the sub basin and if the code is two digits the listing is a river reach within the sub basin or mainstem.
Altered Use(s) -	(AB) Aquatic biota and wildlife that may utilize or are present in the waters; (AH) Aquatic habitat to support aquatic biota, wildlife, or plant life; (CR) The use of waters for swimming and other primary contact recreation; (RF) The use of waters for fishing and related recreational uses; (RB) The use of waters for boating and related recreational uses; (AES) The use of waters for the enjoyment of aesthetic conditions
Invasives -	WC - Water chestnut <i>Trapa natans</i> EWM - Eurasian watermilfoil <i>Myriophyllum spicatum</i> VLM - Variable leaf milfoil <i>Myriophyllum heterophyllum</i> ZM - Zebra mussel <i>Dreissena polymorpha</i> SS - Starry stonewort <i>Nitellopsis obtusa</i>

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status
VT01-03	L05	Paran	AES, AH, CR, RB	Moderate EWM growth.	Planning to implement mechanical harvesting for invasive plants
VT02-01	02	Poultney River, from Hubbardton River to Carvers Falls	AES, CR, RB	Locally abundant WC growth.	Active hand-pulling efforts for water chestnut
	L01	Coggman	AES, CR, RB	Locally abundant EWM and WC growth.	Active hand-pulling efforts for water chestnut
VT02-02	L02	Sunrise	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2020
	L04	Burr (Sudbry)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor in 2019
	L05	Hortonia	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor yearly 2019-2023
	L06	Black (Hubdtn)	AES, AH, CR, RB	Locally abundant EWM growth.	No active management
VT02-03	L01	Echo (Hubdtn)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
	L02	Beebe (Hubdtn)	AES, AH, CR, RB	Abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor in 2020, 2021, and 2022

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status
	L05	Bomoseen	AES, AH, CR, RB	Locally abundant EWM growthZM and AC also present.	Ongoing management plan that includes mechanical harvesting efforts, Herbicide treatment under draft denial in 2023
VT02-05	L01	Lily (Poultly)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2019, 2020
	L02	Little (Wells)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes mechanical harvesting, Treated with Procellacor in 2021, 2022
	L03	St. Catherine	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2019-2022
VT03-04	L04	Fern	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes mechanical harvesting, DOSH, benthic barriers, and hand-pulling
	L05	Lake Dunmore (Salisbury)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes mechanical harvesting, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor in 2020
VT03-06	L01	Beaver (Proctr)	AES, AH, CR, RB	Abundant EWM growth.	No active management
VT03-07	L01	Vergennes Watershed	AES, AH, CR, RB	Abundant EWM growth.	No active management
VT03-08	L02	Cedar	AES, AH, CR, RB	Abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling,
VT03-10	L01	Richville	AES, AH, CR, RB	Abundant EWM growth.	No active management
VT03-15	L01	Chipman	AES, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
VT03-17	L01	Star	AES, AH, CR, RB	Locally abundant EWM growth.	No active management
VT04-01	L01	Otter Creek Section - Lake Champlain (Ferrisburg)	AES, AH, CR, RB	EWMZMand WC infestation.	Active hand-pulling efforts for water chestnut, ZM are ubiquitous
	L02	Port Henry Section - Lake Champlain (Ferrisburg)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	No active management, ZM are ubiquitous
VT04-02	01	Lower Whitney Creek	AES, CR, RB	Locally abundant EWM and WC growth.	Active hand-pulling efforts for water chestnut
	L01	Southern Section - Lake Champlain (Bridport)	AH, CR	EWMZMand WC infestation.	Active mechanical harvesting and hand-pulling efforts for water chestnut, ZM are ubiquitous
VT04-03	01	East Creek Segment, Orwell	AES, CR, RB	Locally abundant WC growth.	Active hand-pulling efforts for water chestnut
	02	South Fork East Creek	AES, CR, RB	Locally abundant WC growth.	Active hand-pulling efforts for water chestnut

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status
VT04-04	L05	Southern Section (B) - Lake Champlain (Bridport)	AH, CR		
VT05-01	L01	Missisquoi Bay - Lake Champlain (Alburg)	AES, AH, CR, DWS, RB	EWMVLMZMand WC infestation.	Active hand-pulling efforts for water chestnut, ZM are ubiquitous
VT05-02	L01	Lake Carmi (Franklin)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes mechanical harvesting efforts
VT05-04	L01	Northeast Arm - Lake Champlain (Swanton)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	No active management, ZM are ubiquitous
	L02	Isle La Motte - Lake Champlain (Alburg)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	Some mechanical harvesting of all nuisance vegetation, ZM are ubiquitous
VT05-07	L01	St. Albans Bay - Lake Champlain (St. Albans)	AES, AH, CR, RB	EWM and ZM infestation.	Some mechanical harvesting of all nuisance vegetation, ZM are ubiquitous
VT05-09	L01	Malletts Bay - Lake Champlain (Colchester)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	No active management, ZM are ubiquitous
	L02	Indian Brook (Essex)	AES, AH, CR, RB	Locally abundant EWM growth.	Herbicides previously used to control EWM
VT05-10	L01	Burlington Bay - Lake Champlain (Burlington)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	No active management, ZM are ubiquitous
	L02	Main Section - Lake Champlain (South Hero)	AES, AH, CR, DWS, RB	EWM and ZM infestation.	No active management, ZM are ubiquitous
VT05-11	L01	Shelburne Bay - Lake Champlain (Shelburne)	AES, AH, CR, DWS, RB		
	L02	Iroquois	AES, AH, CR, RB	Abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2021
VT06-05	L01	Metcalf	AES, AH, CR, RB	Locally abundant EWM growth.	No active management
	L02	Fairfield Swamp	AES, AH, CR, RB	Locally abundant EWM growth.	No active management
	L03	Fairfield	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
VT07-03	L03	Arrowhead Mountain Lake (Milton)	AES, AH, CR, RB	Locally abundant EWM growth.	Locally abundant growth, No active management
VT07-08	L02	Lake Elmore (Elmore)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
VT08-02	L01	Shelburne Pond	AES, AH, CR	Locally abundant EWM growth.	No active management
VT10-01	L01	Deweys Mill	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes benthic barriers and hand-pulling
VT10-02	L03	Pinneo	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, Treated with Procellacor 2020, 2021
VT12-01	L02	Sadawga	AES, AH, CR, RB	Locally abundant EWM growth.	No active management

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status
VT13-02	03	CT River, Hoyts Landing	AB, AES	Locally abundant EWM growth.	No active management
	01	Connecticut River Above Bellow Falls Dam in Springfield	AB, AES	Locally abundant EWM growth.	No active management
VT13-08	L01	Mill (Windsr)	AES, AH, CR, RB	Locally abundant EWM growth.	No active management
VT14-03	L01	Fairlee	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2022
VT16-07	01	Connecticut River, Wilder Dam upstream 1 mile	AB, AES, CR, RB	Locally abundant EWM growth.	No active management
VT16-20	L01	Lake Morey (Fairlee)	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes herbicides, DOSH, benthic barriers, and hand-pulling, Treated with Procellacor 2019 & 2021
VT17-04	L05	Derby	AES, AH, CR, RB	Locally abundant EWM & SS growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
VT17-06	L02	Willoughby	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling
VT17-10	L01	Elligo	AES, AH, CR, RB	Locally abundant EWM growth.	Ongoing management plan that includes DOSH, benthic barriers, and hand-pulling

STATE OF VERMONT

2024

LIST OF PRIORITY SURFACE WATERS

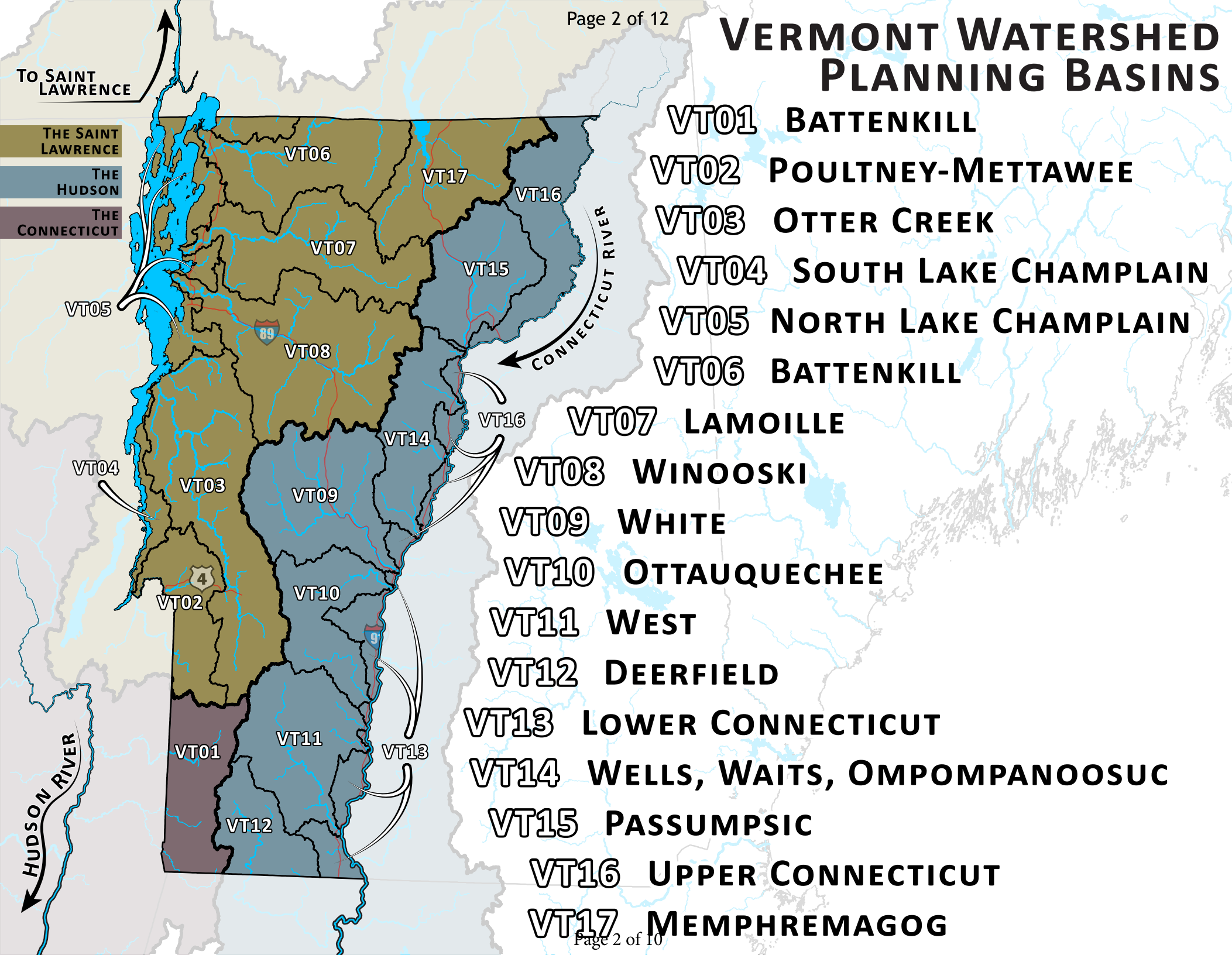
PART F. SURFACE WATERS ALTERED BY FLOW REGULATION

July 29, 2024

Vermont Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Davis 3
Montpelier, VT 05620-3522

www.watershedmanagement.vt.gov

VERMONT WATERSHED PLANNING BASINS



Waters appearing in Part F of the Vermont Priority Waters List are assessed as “altered.” Alterations arise from flow fluctuation, obstructions, or other manipulations of water levels that originate from hydroelectric facilities, dam operations or water withdrawals for industrial or municipal water supply or snowmaking purposes. These waters correspond to Category 4c of EPA’s Consolidated Assessment Listing Methodology. ** Identify new listings.

- Waterbody ID - The two digits following VT identifies the MAJOR VERMONT RIVER BASIN illustrated above and the two digits following - identifies the sub basin or mainstem within the major basin.
- Code - If the code contains an L the listing is a Lake within the sub basin and if the code is two digits the listing is a river reach within the sub basin or mainstem.
- Altered Use(s) - (AB) Aquatic biota and wildlife that may utilize or are present in the waters; (AH) Aquatic habitat to support aquatic biota, wildlife, or plant life; (CR) The use of waters for swimming and other primary contact recreation; (RF) The use of waters for fishing and related recreational uses; (RB) The use of waters for boating and related recreational uses; (AES) The use of waters for the enjoyment of aesthetic conditions

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT01-03	02	Basin Brook	AB	Possible lack of minimum flow below water supply withdrawal point	WSID #5017 - North Bennington Water Department; serves as back up supply source to gravel well field, permit down to 3.0 mgd from 4.0 mgd	
	03	Bolles Brook/Roaring Branch, Intake to City Stream Confluence	AB	Possible lack of minimum flow below water supply withdrawal point	WSID #5016 - Bennington Water Department; assessment of water withdrawal impact difficult given low productivity & low pH effect	
	10	South Stream, mouth upstream to Coleville Road**	AB	Insufficient conservation flow downstream of Bennington fish hatchery withdrawal	Listing based on data submitted as part of Act 135 Surface Water Withdrawal Program	
VT01-05	02	Hopper Brook	AB	Artificial flow regime and condition by hydroelectric operations may alter aquatic habitat	Unlicensed hydroelectric project	2030
	L02	Lake Madeleine	AB, AH	Water level fluctuation alters aquatic habitat	Unlicensed hydroelectric project	2030
VT02-03	02	Lake Bomoseen Outlet Stream (0.4 Mi)	AB	Flow fluctuation and no minimum flow below the Lake Bomoseen dam used to manage water level	Engage DEC dam safety program on the management on downstream flows from the dam	

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT03-04	01	Leicester River, from Lake Dunmore Dam to 6 miles downstream, including Salisbury Dam	ALL USES	Artificial flow regulation & condition by hydroelectric dam	GMP needs 404 ACOE to complete work on the dam; DEC trigger section 401 to address flow and water level issue; Project currently delayed	2026
	L05	Lake Dunmore (Salisbury)	AB, AH	Water level management by hydro alters aquatic biota	GMP needs 404 ACOE to complete work on the dam; DEC trigger section 401 to address flow and water level issue; Project currently delayed	2026
VT03-12	03	South Branch, Middlebury River (1.4 Miles)	AB	Artificial flow condition, insufficient flow below Snow Bowl snowmaking water withdrawal	Partial support 1.4 mi (6.0 mi total length)	
VT03-14	06	East Creek Below Patch Dam	ALL USES	Artificial flow regulation & condition by hydro; possible downstream fish passage problem at dam (threat)	Unlicensed facility	2030
	05	East Creek Below Glen Dam	ALL USES	Artificial flow regulation & condition by dam; only local drainage below; possible fish passage problem at dam (threat)	Unlicensed facility	2030
	02	East Creek Below Chittenden Reservoir	ALL USES	Artificial flow regulation & condition by dam; only local drainage below; possible fish passage problem at dam (threat)	Unlicensed facility	2030
	07	East Creek Hydro Bypass Tributary	AB	Low dissolved oxygen downstream of hydro facility	Unlicensed facility	2030
	L03	Chittenden Reservoir (Chittenden)	AB, AH	Water level fluctuation by hydro alters biological community & wetlands	Unlicensed facility	2030
	L05	Patch Pond (Rutland)	AB, AH, RB	Water level fluctuations alter biological community	Unlicensed facility	2030
VT06-01	01	Missisquoi River, Mouth to Swanton Dam	AB, RB	Artificial flow fluctuating and condition by hydropower production	FERC license expires 2024	2024

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT06-02	02	Missisquoi River Between Swanton Dam and Highgate Falls	AB, RB	Artificial flow fluctuating and condition by hydropower production	FERC license expires 2024	2024
	03	Missisquoi River Between Sheldon Springs and Highgate Falls	AB, RB	Artificial flow fluctuating and condition by hydropower production	FERC license expires 2024; Owner has proposed to operate in a run-of-river mode under a new license	2024
	01	Missisquoi River, Below Enosburg Falls Dam (0.1 Mile)	AB	Artificial flow fluctuating and condition by hydropower production	FERC license expires 2023; Owner in in the process or going through the FERC relicensing process	2024
VT06-04	05	Stanhope Brook	AB	Possible lack of minimum flow below water supply withdrawal point	Richford water supply	
VT06-08	08	Jay Branch, rm. 7.3 to rm 4.6	AB	Artificial & insufficient flow below Jay Peak snowmaking water withdrawal	Partial support 4.7 mi (8.7 mi total length); Jay Peak evaluating expansion/alternatives	
	01	Jay Branch, rm. 9.1 to rm 7.3	AB	Artificial & insufficient flow below Jay Peak snowmaking water withdrawal		
	13	Jay Branch, rm. 9.3 to rm 9.1	AB	Artificial & insufficient flow below Jay Peak snowmaking water withdrawal	Partial support 4.7 mi (8.7 mi total length); Jay Peak evaluating expansion/alternatives	
VT07-04	01	Mid-Lamoille River, Immed. Below Cadys Falls Dam (0.3 Miles)	AB, AES	Artificial dewatering of falls by hydroelectric facility	Environmental court reinstated ANRs 401 conditions; FERC license still pending	2025
VT07-07	01	Upper Lamoille River Below Morrisville Lake Dam	AB, AES, RB	Below Morrisville dam: no flow in bypass impairs aesthetics, recreation, habitat	Environmental court reinstated ANRs 401 conditions; FERC license still pending	2025
	02	Upper Lamoille River Below Wolcott Dam	AB, AES, RB	Wolcott Dam: artificial & poor flow regime downstream (threat)	Unlicensed facility	2030
	03	Upper Lamoille River Below Hardwick Lake Dam	AB, AES, RB	Hardwick Lake Dam: artificial flow regime downriver	Supreme court remanded issues back to environmental court; FERC license still pending	2026
	L01	Lake Lamoille (Morristown)	AB, AH	Water level fluctuation by hydroelectric facility may alter aquatic habitat	Environmental court reinstated ANRs 401 conditions; FERC license still pending	2025
VT07-08	02	Elmore Pond Brook-From Dam to 2.2 Miles Downstream	ALL USES	Artificial flow regulation & condition by dam	Environmental court reinstated ANRs 401 conditions; FERC license still pending	2025

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
	L02	Lake Elmore (Elmore)	AH	Water level fluctuation by hydroelectric facility may alter aquatic habitat	Environmental court reinstated ANRs 401 conditions; FERC license still pending	2025
VT07-13	02	Unnamed Brook, Trib to Brewster River (1 Mile)	AB	Artificial flow regime, insufficient flow below Morse Reservoir, used for domestic water	Non-support 1.0 mi (2.7 mi total length); domestic water use; Removal of the dam is being considered	
VT07-18	01	Green River, Downstream from Reservoir 4.7 Miles	AB	Artificial flow regime and condition by hydroelectric operations alters aquatic biota	Environmental court reinstated ANRs 401 conditions; MWL is exploring the option of decommissioning the project; FERC process still pending	2025
	L03	Green River Reservoir	AB, AH	Water level fluctuation and winter drawdown alters aquatic habitat	Environmental court reinstated ANRs 401 conditions; MWL is exploring the option of decommissioning the project; FERC process still pending	2025
VT07-21	L05	Hardwick Lake (Hardwick)	AB, AES, AH	Water level fluctuation by hydroelectric facility alters aquatic habitat & wetlands	No longer managed for hydroelectric production; lake drained during fall/winter for ice control	2026
VT08-01	05	Winooski River, from No 19 Dam down 0.1 miles	AB, AES	Artificial & inadequate flow in bypass reach	FERC licences expires in 2025	
VT08-04	01	Joiner Brook (2.9 Miles)	AB	Artificial & insufficient flow below Bolton Valley snowmaking water withdrawal	Non-support 2.9 mi (5.7 mi total length)	
VT08-06	01	Tyler Brk (0.1 Mi) & Merriam Brk (0.1 Mi), Thatcher Brook Tribs	ALL USES	Artificial & inadequate flow condition below Waterbury Village public water supply withdrawal point	WSID #5284 - Waterbury Village Water	
VT08-11	01	Lower Little River Below Hydro Dam (2.6 Miles)	ALL USES	Artificial flow regime in the winter	New turbine runner and bypass flow valve will be operational in may 2018; winter drawdown will continue until tanner gates are replaced; DEC Dam Safety in consultation with USACE	2028

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
	L02	Waterbury Reservoir (Waterbury)	ALL USES	Winter drawdown alters all uses	New turbine runner and bypass flow valve will be operational in may 2018; winter drawdown will continue until tanner gates are replaced; DEC Dam Safety in consultation with USACE	2028
VT08-16	03	Benjamin Falls Brook (Pond Brook) from Berlin Pond to Mouth	AB, AES	Artificial dewatering of brook by Montpelier & Berlin water supply withdrawals	WSID #5272	
VT08-20	02	Mill Brook (2.1 Miles)	AB	Artificial & insufficient flow below Mad River Glen snowmaking water withdrawal	Partial support 2.1 mi (5.9 mi total length)	
	03	Slide Brook (0.8 Mile)	AB	Artificial & insufficient flow below Mt. Ellen snowmaking water withdrawal	Non-support 0.8 mi (3.4 mi total length)	
VT10-01	02	Lower Ottauquechee River, Below Ottauquechee Woolen Mill Dam (0.1 Mi)	AES	Artificial flow condition, dewatering of falls by hydroelectric facility		2032
	01	Lower Ottauquechee River, Below No. Hartland Dam (0.9 Mile)	AB, AES, RB	Artificial flow regulation & condition	USACE dam; no conservation flow based on any biological/wq criteria; 401 WQC issued for operation of the hydroelectric project in Oct. 2021; FERC license still pending	
VT10-02	L01	North Hartland Reservoir (Hartland)	AB, AH, RB	Annual water level fluctuations alter aquatic habitat	USACE dam; no conservation flow based on any biological/wq criteria; 401 WQC issued for operation of the hydroelectric project in Oct. 2021; FERC license still pending	
VT10-11	02	Lower Black River	AB	Artificial flow regulation & condition by dam	USACE dam; no conservation flow based on any biological/wq criteria	
VT10-13	L02	North Springfield Reservoir (Springfield)	AB, AH	Water level fluctuation alters aquatic habitat	USACE dam; no conservation flow based on any biological/wq criteria	
VT10-16	L03	Stoughton Pond (Weathersfield)	AB, AH	Water level fluctuation alters aquatic habitat	USACE dam; no conservation flow based on any biological/wq criteria	
VT11-07		West River, Mouth to Grassy Brook	AH, RB	Wide shallow channel, loss of riparian vegetation, USACOE dam operation	Wide shallow channel, loss of riparian vegetation, USACOE dam operation	

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT11-08	01	Retreat Meadows	AH, RB	Unique habitat impacted by Vernon Dam water level fluctuations	Agreement on operation of Vernon Dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2024
	01	Stickney Brook Mouth upstream to Langlie Brook (1.4 miles)	AB, RB	Artificial flow condition, seasonally devoid of flow below diversion dam; dredging	WSID # 5290 - Brattleboro Water Department; water supply reservoir above dam	
	02	Stickney Brook, confluence with Langlie Brook upstream 1.1 miles	AB, RB	Artificial flow condition, seasonally devoid of flow below diversion dam; dredging	WSID # 5290 - Brattleboro Water Department; water supply reservoir above dam	
VT11-10	02	West River, Townshend Dam to Grassy Brook	AH, RF	USACOE dam operation, impounded waters release results in elevated temperatures downstream		
	01	West River, Below Ball Mountain Dam to Townshend Dam (9 Miles)	AB, AH, CR	Artificial flow regime at dam	No minimum flow by USACE based on any biological/wq criteria. structural study complete, no action planned	
	L02	Townshend Reservoir (Townshend)	AB, AH	Water level fluctuation alters aquatic habitat	USACE dam; no conservation flow based on any biological/wq criteria	
VT11-16	02	Mill Brook (1.6 Miles)	AB	Artificial & insufficient flow below Bromley Snowmaking water withdrawal	Partial support 1.6 mi (8 mi total length)	
	03	Trib to Mill Brook (2.2 Miles)	AB	Artificial & insufficient flow below Bromley Snowmaking water withdrawal	Non-support 0.7 mi, partial support 1.5 mi (2.5 mi total length).	
VT11-18	L01	Hapgood Pond (Peru)	AB, AH	Annual drawdowns alter aquatic habitat		
VT12-01	01	Lower Deerfield River Below Harriman Reservoir (3.5 Miles)	AB	Low temperature hypolimnetic water release from reservoir affect fishery	401 certification issued (1/95); FERC license issued (4/97); DFW evaluating the effects of release.	
VT13-01		CT River, Wilder Dam to Ascutney Village	AB	Artificial flow condition, fluctuating flows associated with hydropower production	Agreement on operation of Wilder dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT13-02	03	CT River, Hoyts Landing	AB	Water level fluctuation at dam; dewatered shorelines/wetlands	Agreement on operation of Bellows Falls dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
	01	Connecticut River Above Bellow Falls Dam in Springfield	AB, AES	Water level fluctuation at dam; dewatered shorelines/wetlands; unstable/eroding streambanks	Agreement on operation of Bellows Falls dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
	02	Connecticut River Above Bellow Falls Dam to Hoyts Landing Area, Rockingham	AB	Water level fluctuation at dam; dewatered shorelines/wetlands	Agreement on operations of Bellows Falls dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
VT13-03		CT River, Below Bellows Falls Dam	AB	Artificial flow condition, fluctuating flows by hydropower production	Agreement on operation of Bellows Falls dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2023
VT13-04		Vernon Impoundment	AB	Water level fluctuation at dam; dewatered shoreline/wetlands	Agreement on operation of Vernon dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
VT13-05		Lower Connecticut River, Below Vernon Dam	AB	Artificial flow condition, fluctuating flows by hydropower production	Agreement on operation of Vernon dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
VT13-10	02	Ellis Brook, Farr (?) Brook Below Minards Pond	AB	Possible lack of minimum flow below water supply withdrawal point (threat)	WSID #5298 - Bellows Falls Water Department	
VT14-04	01	Waits River, Below Bradford Dam (0.3 Mile)	AB, AES	Artificial flow condition, poor flow regime in dam's bypass segment	FERC exemption	2026
VT14-07	01	Wells River, Below Dam at Boltonville (0.4 Mi)	AB, AES, RB	Artificial flow condition, poor flow and physical alterations in hydroelectric dam bypass segment	FERC exemption	2028

Waterbody ID	Code	Waterbody Name	Altered Use(s)	Problem	Status	Compliance Year
VT14-09	01	South Peacham Brook and Stevens River below Harveys Lake	AB	Dam management alters aquatic biota	Town is working with NGO and consultants on feasibility analysis of dam removal	
	L05	Harveys Lake (Barnet)	AB, AH	Water level management may alter aquatic habitat	Town is working towards dam removal and placement of weir to stabilize water level	
VT15-08	03	Bean Brook, from the Bald Hill Fish Culture Station water withdrawal downstream 1 mile**	AB	Insufficient conservation flow downstream of Bald Hill fish hatchery withdrawal	Listing based on data submitted as part of Act 135 Surface Water Withdrawal Program	
	04	Kelsey Brook, from the Bald Hill Fish Culture Station water withdrawal downstream to mouth**	AB	Insufficient conservation flow downstream of Bald Hill fish hatchery withdrawal	Listing based on data submitted as part of Act 135 Surface Water Withdrawal Program	
VT16-07	01	Connecticut River, Wilder Dam upstream 1 mile	AB	Reservoir water level fluctuation at dam; unstable/eroding streambanks upstream	Agreement on operations of Wilder dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
	02	Connecticut River, 1 mile upstream of Wilder Dam to Bradford (Waits River)	AB	Reservoir water level fluctuation at dam; unstable/eroding streambanks upstream	Agreement on operation of Wilder dam was reached in 2020 that will meet VWQS; FERC license and 401 WQC still pending	2025
VT17-01	L01	Lake Memphremagog	AB, AH	Water level fluctuation by hydroelectric facility may alter aquatic habitat and dewater wetlands and shoreline	DEC is a party to regular meetings which includes international joint commission, Canadian environmental regulatory authorities and municipalities to discuss ways to improve the water quality of the lake	
VT17-05	01	Brook #2 below Brighton water supply withdrawal	AB	Possible lack of minimum flow below water supply withdrawal point	WSID #5105; Brighton	
	03	Brook #1 below Brighton water supply withdrawal	AB	Possible lack of minimum flow below water supply withdrawal point	WSID #5105; Brighton	
VT17-08	L03	Shadow Lake (Glover)	AB, AES, AH	Water level fluctuation (seasonal drawdown) may alter aquatic habitat and aesthetics		2025

Vermont 2024 303(d) List: Comment Response Summary

On April 12, 2024, the Vermont Department of Environmental Conservation (VTDEC) released the final draft of the 2024 303(d) List of Impaired Waters for public comment. The public comment period ended on May 17, 2024. The public was informed of the comment period both via the “public notice” portion of the Watershed Management Division website, and through direct email contact with interested parties. During the comment period, comments were received from the following parties:

- **Town of Georgia, Vermont**
- **Spruce Peak Realty, Stowe, Vermont**
- **US Environmental Protection Agency, Region 1**

The VTDEC prepared this responsiveness summary to address specific comments and questions and to indicate how the final 2024 303(d) List has been modified. Comments are presented below.

1. **Mr. Minck, Town of Georgia Conservation Commission**

I strongly object to "lowering" VT05-07-04 Mill River to medium. Rugg Brook is still listed as High and Mill River should retain this status. Rugg brook feeds Mill River and both streams should retain the High rating.

Additionally Vermont owns Mill River Falls, a 42 acre floodplain forest at the river's mouth. All efforts should be to improve the water quality of this stream.

Response: Currently, VTDEC has yet to develop a TMDL methodology for this type of impairment where both sediment and nutrients are impacting aquatic biota, and where there exists an upstream stormwater impairment, so the TMDL priority is proposed to be changed from high to medium to present a more realistic timeline for TMDL development for both Mill and the lower section of Rugg Brooks. Pollutant sources come from multiple nonpoint sectors, primarily agricultural and developed lands which adds an additional layer of complexity to formulate allocations. Also, because of the stormwater implementation efforts completed in the upstream areas of Rugg Brook, which also feeds Mill River, pollutant loading has likely declined in the impaired segments and thus complicates trying to replicate it through existing modeling. New models would likely need to be developed in this situation which is very resource intensive. Although more obviously needs to be done in all sectors to reduce pollutant stressors, VTDEC will continue to investigate a TMDL methodology for Mill River and other similarly impaired stream segments.

However, the TMDL priority of medium should not impact the high priority for the implementation of pollutant reduction strategies. Ultimately, it's the application of BMPs that will restore the streams to compliance, whether a TMDL loading estimate has been developed or not.

2. Spruce Peak Realty

We are in agreement with the Vermont DEC about the iron seeps causing an impairment in Big Spruce Brook, but recognize these historic seeps are not feasible to remediate. As a result of this, the development of a TMDL is likely not practical. The narrative in the 2016 - 303(d) Part B listing of Big Spruce Brook, prepared by the Vermont Department of Environmental Conservation (VTDEC), accurately describes SPR's sentiments on iron seep remediation in the Big Spruce Brook watershed. "Due to the steep, forested terrain, attempts to install BMPs would likely cause more harm to the stream channel than any perceived benefits."

Response: The assessment process supporting the 303(d) List development is fundamentally about identifying impairments and not about evaluating the practicability of TMDL development or remediation measures. The decisions of TMDL development and remediation practicability are decision points that will follow impairment assessments and are not in question here. While the above statement regarding remediation challenges may be true, no further diagnostic or remediation feasibility analyses have been conducted to confirm potential remediation impacts. The need for additional data and analysis to assess the potential for TMDL development or remediation are questions that normally follow the 303(d)-listing process.

3. Spruce Peak Realty

We appreciated the opportunity to meet with you and other Vermont Department of Environmental Conservation (VTDEC) staff on May 2, 2024 to discuss the iron seeps. We understand from this recent meeting that the VTDEC lists impaired waters, regardless of whether successful remediation efforts are possible. SPR believes the remediation of the major iron seeps on Big Spruce Brook is not practical or feasible.

The spatial extent of the iron seeps and the effects on the aquatic biota within the Big Spruce Brook watershed is well documented in the January 30, 2024 memorandum to Tim Clear from the Biomonitoring and Aquatic Studies Section of the Vermont DEC. However, it seems unlikely a TMDL could be developed, which would successfully remediate those seeps and result in the Big Spruce Brook attaining Class B(2) biometrics.

The 2022 monitoring season, which was very dry, demonstrated that a significant amount of groundwater enters between Big Spruce Brook at river mile 0.9 and Big Spruce Brook at river mile 0.8. These two stations are separated by a short distance, one above the Spruce Access Road and the other below. According to the DEC Biomonitoring and Aquatic Studies Section, there was not sufficient water flow at the upstream station to conduct the kick net sampling; however, flow was sufficient at river mile 0.8, located at the major iron seep. Upper Pinnacle Brook was used as a reference/control station for the Biomonitoring and Aquatic Studies Section to provide a comparison to the Big Spruce Brook watershed, in terms of benthic macroinvertebrates, geology, iron precipitate and other habitat parameters. While both the Big Spruce Brook and Pinnacle Brook watersheds may have similar geology, the two watersheds may differ in hydrology and groundwater inflow. A runoff study conducted by Jamie Shanley of the USGS found the West Branch to have higher annual runoff and higher sustained base flow levels than Ranch Brook, a nearby reference

stream (Shanley, 20204). Higher groundwater inflows make a watershed more susceptible to iron seeps.

Response: In 2022, VT DEC biologists determined that flows at the 0.9 site were not sufficient to collect a representative biological sample, however there was water flowing in the stream when staff visited this site and water quality samples were collected. Furthermore, while we are not aware of how differences in annual runoff and base flow levels vary between the Big Spruce, Pinnacle, and Ranch Brook watersheds, it is unlikely that these differences would cause iron precipitate to be seen at the levels observed in Big Spruce. All streams in the VT DEC monitoring and assessment database with a similar level of iron precipitate represent areas that have been highly disturbed by anthropogenic influences. Big Spruce Brook is no exception.

4. Spruce Peak Realty

Spruce Peak Realty is requesting that “Pollutants in Urban Stormwater” be removed from 303(d) listing as a reason for impairment. First, chloride concentrations in Big Spruce Brook do not exceed the criterion in the current (2022) Vermont Water Quality Standards. Secondly, there is no evidence that the urban stormwater from Little Spruce Brook is a primary stressor to lower Big Spruce Brook. Most of the stormwater from the Little Spruce Brook watershed flows into the storm drain system and is retained in a sediment basin prior to discharging to the West Branch of the Little River.

Chloride concentrations at Big Spruce Brook at river mile 0.2 are elevated above background, but are well below the Vermont Water Quality Standard’s chronic criterion of 230 mg/L (Figure 1). Predicted chloride concentrations from the DEC’s deployment of conductivity loggers at Big Spruce Brook river mile 0.2 in 2022 also suggests chloride did not exceed the chronic limit in the VWQS (January 30, 2024 memorandum to Tim Clear from Biomonitoring and Aquatics Section). The chloride values at Big Spruce RM 0.2 are slightly higher than RM 0.3 and represent approximately 20 to 25 % contribution from Little Spruce Brook and 75 to 80% contribution from Big Spruce Brook. Therefore, the influence from Little Spruce Brook chloride values on Big Spruce Brook is fairly minor, and should not be listed as a primary stressor.

Response:

It is not necessary for chloride concentrations to exceed 2022 VT WQS chloride criteria to list a stream as impaired for “Pollutants in Urban Stormwater”. While the levels found in Big Spruce Brook do not exceed chloride criteria, those found in Little Spruce Brook do. As described in the 2024 Listing Memo: *“recent research on road salt impacts to surface water suggests aquatic communities are harmed at concentrations lower than the current EPA criteria (Hintz et al. 2021); for example, Canada’s chronic and acute thresholds for chloride are 120 mg/l and 640 mg/l respectively (CCME 2011). Additionally, analyses conducted by VTDEC (Graziosi 2022) comparing chloride and macroinvertebrate data collected between 2003 and 2020 at 1,300 sample sites in small Vermont streams indicated sensitive aquatic species are adversely impacted by chloride at levels as low as 50 mg/l in combination with other co-occurring stressors. During the deployment of the conductivity loggers, chloride concentrations in Little Spruce Brook exceeded 50 mg/l 100% of the time and exceeded 50 mg/l in Big Spruce Brook 95% of the time, representing levels likely to*

degrade the macroinvertebrate community, below VWQS chloride criteria.” The decreased number of intolerant macroinvertebrates in Big Spruce Brook downstream of the confluence with Little Spruce Brook is due to a combination of factors, including elevated chloride levels.

5. Spruce Peak Realty

Placing a stream on the Part A list means a TMDL is needed. It would seem unreasonable to set a target concentration less than the criteria listed in the VWQS for a target in a TMDL. Based on grab sampling conducted at Big Spruce RM 0.2 over the past decade, chloride concentrations in summer baseflow samples have been less than half of the chronic criterion. Therefore, listing the lower reach of Big Spruce Brook for chloride, at this point, does not align with the current water quality standards. At some point when the VWQS are revised to a lower limit, it may make sense to revisit this potential listing.

Response: The phrase “pollutants in urban stormwater” is a collective term to describe likely pollutants where no specific pollutant is identified for TMDL development; similar to “unknown” as is sometimes used. However, the listing does identify chloride and sediment as likely contributing pollutants, but the relative proportion of impact is unknown at this time. Prior to TMDL development, further investigation will need to be conducted to discern a TMDL target pollutant. As part of the further investigation prior to TMDL development, a suitable concentration target would need to be developed, either as a revision to the WQS or as a site-specific target.

6. Spruce Peak Realty

In response to the 2022 listing of Little Spruce Brook for chloride, SPR is working towards reducing concentrations of chloride in Little Spruce Brook through implementing best management practices (BMPs) for plowing and snow storage. SPR has committed to stop storing snow in the area adjacent to the Arts Center and the large basin in front of the Golf Cottage. In addition, the construction of the final project in the Marsh Lot will eliminate the parking lot, which is currently salted and plowed. The reconfiguration of the road to accept this building will create a new stormwater management system; thereby, reducing the amount of contaminated snow that will reach Little Spruce Brook. These BMPs and the elimination of the parking lot at the Marsh are also expected to reduce chloride concentrations in Big Spruce Brook.

Response: These proposed management strategies in the Little Spruce watershed appear helpful in reducing chloride impacts associated with road salt and thus to reduce impacts to aquatic biota. When these actions have occurred, chloride monitoring, and perhaps biomonitoring, will be useful to assess the improved conditions.

7. Spruce Peak Realty

We are in agreement with the DEC’s conclusion in the 2018 Water Quality Integrated Assessment Report that that iron pollution is disrupting the trophic structure of the macroinvertebrate

community of Big Spruce Brook. The combination of the soils that are rich in iron in the watershed and the saturated soils make an environment prone to iron seeps. The most recent memorandum from the Vermont DEC biomonitoring section dated January 30, 2024, attribute the Big Spruce stations' failure to meet Class B(2) thresholds to "a stream heavily degraded due to iron precipitate". Although the biologists speculate that sediment deposition is occurring within the reach due to a higher than expected amount of fine gravel, they conclude the abundance of aquatic worms (Oligochaeta) at Big Spruce river mile 0.2 is "likely a residual effect from the substantial source populations created by iron precipitate/bacteria in the upstream reach of BSB" (Big Spruce Brook).

We are requesting the VTDEC remain consistent with their action in 2018 to leave Big Spruce Brook off the 303d list due to the following reasons:

1) The lack of evidence that sedimentation from the Little Spruce Brook watershed is a major stressor to the aquatic biota of Big Spruce Brook,

Response: While Big Spruce Brook appears to be most heavily impacted from chloride and iron, the presence of Oligochaetes at Big Spruce Brook 0.2 is indicative of sedimentation issues. Sedimentation, combined with an abundant source population of Oligo from the upstream iron precipitate, are contributing stressors to the aquatic biota of Big Spruce Brook, among other stressors present in urban stormwater runoff. Big Spruce Brook is being listed because multiple monitoring locations indicate that the site fails to meet Vermont Water Quality Standards for Aquatic Biota. Substantial additional monitoring and assessment conducted since 2018 support the listing.

2) Chloride values on lower Big Spruce Brook are below the criteria set in the water quality standards, and

Response: As stated above, recent scientific literature and studies conducted by VTDEC indicate that aquatic biological communities are adversely impacted by chloride at values lower than the current standards. Though elevated chloride levels and other impacts from urban stormwater are contributing to the degraded biological condition in Big Spruce Brook, this site is being listed for impairment due to aquatic biota not meeting current water quality standards, not for exceedances of the chloride criteria.

3) Iron pollution is infeasible to remediate, and the cause is unknown.

Response: As stated above, all other streams in the VTDEC monitoring and assessment database with this high level of iron precipitate are related to significant watershed disturbance. The 303(d)-listing process evaluates whether the waterbody is meeting Vermont Water Quality Standards for aquatic biota. The feasibility of remediation is not considered in the listing process.

8. USEPA Region 1

There are nine new listings identified on Vermont's Draft 2024 303(d) List, Vermont Part A Priority Waters (Category 5). Vermont should provide the data associated with these new listings for the public's awareness and define the period of record for data considered for assessment purposes,

particularly which years of data collection were utilized for this listing cycle and whether data from all basins were considered.

Response: VTDEC has sent to EPA all supporting documentation related to new impairment listings.

9. USEPA Region 1

In reviewing the draft 303(d) list, EPA consulted water quality data available on VTDEC IWIS. IWIS appears to contain water quality monitoring data indicating water quality impairments in VT waterbodies that are not included on this draft 303(d) list. For instance, data collected in Otter Creek, Dead Creek, Dead Creek West Branch, Dead Creek East Branch and Dead Creek Middle Branch contain data indicating phosphorus concentrations above water quality criteria, however, these waterbodies do not appear on the draft 303(d) list. A comprehensive evaluation of all data on VTDEC IWIS is necessary to ensure VTDEC is using all publicly available water quality data to inform impaired waters determinations and inclusion on the 303(d) list.

Response: VTDEC completes a comprehensive data assessment in the development of its 303(d) List with a focus on newly collected data since the previous biennial list. Data is evaluated from across the entire state, however, since many of the monitoring programs operate using rotational watershed approach (each major basin monitored every 5 years), many of the new data are concentrated in specific areas of the state monitored since the previous 303(d) List was approved.

Regarding the waterbodies noted as phosphorus impaired in the comment, and subsequently in an emailed spreadsheet noting phosphorus concentrations (Jerome Pond, Otter Creek, Dead Creek, Dead Creek West Branch), VTDEC reviewed existing data. After reviewing all existing data, and assessing it against the Assessment and Listing Methodology and the VT Water Quality Standards, the following conclusions were reached:

1. Jerome Pond is currently listed as impaired and was initially listed on the 2022 303(d) List.
2. Otter Creek (site 0.1E Dead Creek) is not a wadable stream type included in the combined nutrient criteria, so none of those criteria apply to this stream.
3. Otter Creek (site 0.1W Dead Creek) is not a wadable stream type included in the combined nutrient criteria, so none of those criteria apply to this stream.
4. Dead Creek (sites Basin Harbor Rd at mouth) is not a wadable stream type included in the combined nutrient criteria, so none of those criteria apply to this stream.
5. Dead Creek (site at Brileya access) is not a wadable stream type included in the combined nutrient criteria, so none of those criteria apply to this stream.
6. West Branch Dead Creek (site at Middle Rd) is not a wadable stream type included in the combined nutrient criteria, so none of those criteria apply to this stream.

Since the numeric combined nutrient criteria are not applicable to these waters, the narrative nutrient criteria would be applied for assessment purposes.

Dead Creek is a unique waterbody in the Vermont landscape and its nature is not consistent with the typical, larger flowing rivers in the state and thus provides a unique assessment challenge. Due to

multiple dams along its course creating impoundments and a low gradient, water flow is greatly diminished, and Dead Creek tends to behave more like an emergent marsh rather than the larger, more rapidly flowing rivers typically found in the state. Additionally, soils in the watershed are mostly fine clays and contribute to consistently elevated turbidity during both dry and wet weather. There have been occasional elevated total phosphorus results in portions of the Dead Creek watershed over the last several decades, however, it's believed that this consistent high turbidity inhibits light penetration and diminishes the expression of elevated phosphorus as excessive algal growth.

VTDEC is planning to develop a better assessment methodology in the near future applicable to waters not covered by the combined nutrient criteria. Most notably, these include larger, non-wadable rivers and streams and would include Dead Creek. The application of this improved assessment methodology will provide a better framework and provide reassurance that these waters are properly assessed against the narrative Vermont Water Quality Standards.

Although not directly applicable to the assessment process, it should be noted that even though Dead Creek has not been assessed as nutrient impaired, extensive phosphorus reduction work has been accomplished in the watershed. The Lake Champlain phosphorus TMDL implementation plan directs significant phosphorus reduction resources to the area.

10. USEPA Region 1

The below impaired segment has been proposed for delisting on Vermont's Draft 2024 303(d) List (Category 5), as identified in the state's "Summary of changes in the 2024 listing cycle" document.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem	TMDL Priority
VT13-10	01	Commissary Brook Trib, Mouth to rm 0.2	AES, ALS	SEDIMENTATION /SILTATION	Bank failure and erosion due to past clay mining	Low

VT DEC proposes to delist impaired segment VT13-10.01 from Category 5 (VT Part A) and retire the segment from all IR categories based on its claims that the flow regime of the segment is intermittent. EPA requests that Vermont demonstrate good cause {40 CFR 130.7(b)(6)(iv)} for not including assessment unit VT13-10.01 on its 2024 draft 303(d) list. In addition, please note that an intermittent stream that meets the relatively permanent standard is a "water of the United States" and as such would be subject to the requirements of CWA Section 303(d).

Response: Based on further investigation of assessment information, VTDEC will not be proposing to delist this segment. This decision is described below.

First, VTDEC never intended to "retire" the segment as not being a water of the United States, only to reassess it as "unassessed" for aquatic biota. Second, based on communications with EPA, VTDEC looked at the assessment history of this segment and uncovered some discrepancies as to what use was impaired.

The stream was initially listed in 2010, a time when aquatic biota and aquatic habitat were identified as a single combined use, referred to as "aquatic life use" in assessments and the 303(d) List. The supporting information for this stream describes extensive sedimentation due to bank failures caused by clay mining impacting stream habitat. Aquatic Biota and Aquatic Habitat were separated as uses in the WQS in 2016, however on subsequent lists this listing was never changed to "aquatic habitat" being the impaired use, rather aquatic biota was still identified as the impaired use. Therefore, when the biologists were looking at the stream again in 2022 from an "aquatic biota" perspective, they determined it couldn't be assessed for the reasons identified (intermittent, small watershed) because there was no biological stream assessment methodology for such a water. However, when assessed solely from an Aquatic Habitat use perspective, it should remain listed as impaired based on the initial assessment information regardless of its suitability for aquatic biota assessment.

11. USEPA Region 1

One impaired segment has been proposed for removal from Vermont's Draft 2024 List of Priority Waters - Part D (Category 4a), identified below.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT13-16	L01	Lily Pond (Vernon)	AH, ALS	pH, LOW	Atmospheric deposition; extremely sensitive to acidification; episodic acidification

The justification for removal from Category 4a was that gran alkalinity has consistently been meeting criteria (2.5 mg/l CaCO₃), however EPA requests supporting data be provided. Vermont should clarify if this listing will be moved to Category 1 or 2 and provide supporting data associated with which applicable uses are being met.

Response: VTDEC has submitted to EPA the data report used to make this assessment. Upon delisting, Lily Pond will be considered Category 2.

12. USEPA Region 1

One impaired segment was proposed for removal Vermont's Draft 2024 List of Priority Waters - Part B, (Category 4b), identified below.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT11-15	06	No. Branch, Ball Mtn Brook, Stratton Lake to Kidder Brook	AES	MANGANESE	Contributions/releases of reduced manganese from reservoir sediment coats stream substrate.

The justification for removal of this impaired segment from Category 4b (VT Part B) was that restoration activities at Stratton Mountain Resort have reduced manganese in discharges which have significantly reduced staining of stream substrate. However, data supporting the claim of attainment of the applicable water quality standard should be provided.

Response: Photo documentation has been provided to EPA that demonstrates the Aesthetics Use in the stream channel is supported. The rocks are not discolored to a degree that supports an impairment assessment.

13. USEPA Region 1

One Category 4b (VT Part B) impaired segment was identified as in need of either an updated justification for its continued presence in Category 4b (VT Part B), or move to Category 5 (VT Part A), listed below.

Waterbody ID	Code	Waterbody Name	Impaired Use(s)	Pollutant	Problem
VT07-01	01	Lamoille River, Route 2 to Arrowhead Mountain Lake	ALS	DISSOLVED OXYGEN	Three dams (Clarks, Milton, Peterson) create dissolved oxygen problems downstream.

The relicensing of this project occurred in 2005, providing for conservation flows that improve the D.O. regime sufficiently to obviate the need for specific mechanical enhancements. However, data was never collected as neither the licensee nor the state ever initiated sampling. It is explained in the Vermont Draft 2024 List of Priority Surface Waters – Part B (Category 4b) impairment description that if the data indicates that standards are not being met, the licensee must propose and implement enhancement measures. It is unclear whether the controls identified in the original Category 4b justification are adequate to attain applicable water quality standards. EPA requests an updated justification for this impaired segment to remain in Category 4b (VT Part B).

Response: VTDEC strongly believes that the corrective actions initiated as part of the project relicensing alleviated the low dissolved oxygen impairment, however, data to affirm that belief has not yet been collected. In 2022, attempts were made to conduct comprehensive dissolved oxygen measurements, however, resources on hand were insufficient to properly assess the instream condition. VTDEC intends to continue to investigate ways to collect the necessary information to conduct a proper assessment. VTDEC proposes that the segment remains on Part B. Even if impairment were detected with follow-up monitoring, it's highly unlikely that a TMDL would be developed; rather, the project's operations would be adjusted to alleviate the impairment.

14. USEPA Region 1

Vermont should reference the current listing and assessment methodology used for their Draft 2024 Priority Waters List.

Response: The current Assessment and Listing Methodology used for this assessment cycle is found at:

https://dec.vermont.gov/sites/dec/files/documents/2024%20A%26LM_update%20final.pdf