

Martinsville Hydro Corporation
Jay Boeri, PE
257 Weed Rd.
Hartland, Vermont 05048
802-356-2346 802-436-2521 jay@vermontel.net

July 20, 2016

Re: Recertification Application and fee for Martinsville Hydro LIHI Certificate No. 85

Dr. Michael J. Sale, Executive Director, Low Impact Hydro Institute

Dear Dr. Sale,

Please allow this cover letter and attachments to serve as the recertification application for my project located on Lull Brook in Hartland, Vermont. Attached are:

1. Table B-1
2. Matrix of Alternative Standards
3. Facilities Contacts
4. Sworn Statement
5. Appendix A: Additional Information updated since my initial 2011 application.

I've been a practicing hydro engineer for more than 30 years as both project owner (3) and consulting engineer in various capacities on about 50 other projects. Review of my first application, a very time consuming process, seemed based on large generic projects. For this review I am sending a more graphic description of project features as well as updated information.

To be clear, there has NOT been any (1) change of mode of plant operation (2) type, size or rating of generation equipment (3) agency requests, actions, concerns, or recommendations for change.

Appendix A contains correspondence for information updated since the 2011 LIHI application:

1. The 2010 Vermont 303(d) List of Waters, Part A- Impaired Surface Waters in Need of TMDL – was most recently revised in 2014 and Lull Brook was not included.
2. The Vermont Agency of Natural Resources wrote in 2012 to say “it has no plans to reevaluate operation of the Martinsville Project prior to the project’s relicensing in 2029”.
3. The USFWLS does not have plans to require catadromous fish passage at this time.
4. In early 2014, I upgraded Martinsville’s operational software to include an ability to record pond level in quarter hour intervals. My interconnecting utility usually provides me with a generation report in the same time intervals. Melding this data (not in real time) helps confirm the plant operates in run-of-river mode and is within its minimum flow release requirements.

The entire streambed of Lull Brook shown in the aerial view (see the following page) is the scoured, rock bottom of the Hartland Mill Gorge. This gorge begins at the Route 5 bridge just south of Hartland 3 Corners and ends at the bridge on Martinsville Road, a distance of approximately 1200 feet of which 600 feet is Martinsville Hydro’s bypass. The gorge drops 160 feet in elevation, the upper 500 feet of the streambed drops 90 feet in elevation in a single, steep-angle cascade.

The tiny reservoir is below the bridge. The project's drainage area is 22 square miles, its head is 98 ft.



The east side of the gorge is a vertical rock wall 50 -75 feet tall and is Martinsville's east property line. The west side of the gorge slopes down steeply from Route 5 (the project's west boundary) at about a 45-degree angle. Both walls are covered by tall trees growing on the rock ledges and in pockets of thin soil, their presence completely masks a somewhat unique natural area. Potential sightseers don't get time to look over the state highway's guard rail as the road is narrow and on a curve (see page 4).

Access to most of the project features is difficult. The dam is reached by stepping over the highway guard rail and then descending 2 flights of stairs to an 8 foot square level pad adjacent to the intake platform. The reservoir, the size of an Olympic swimming pool, has no foot path along its edges. The impoundment's normal elevation is 6 feet below the intake platform and access to the water is by ladder or rope. The depth and size of Lull Brook precludes canoeing or kayaking.

Access to the powerhouse is via a fairly steep driveway only approachable in the southerly direction from Route 5. At the bottom is a small parking area near the control building. From there four flights of stairs lands one at the powerhouse entry door.

The small remainder of Martinsville property lies to the south and west of the parking area, situated on a toe slope below Route 5. The area has groundwater discharge, hydrophytic vegetation and probably hydric soils so there is no room to expand parking or accommodate recreational activities.

Over a period of 35 years, I have only seen a handful of people entering the gorge from its top or bottom ends as access is limited and the footing uneven and slippery. Martinsville Hydro does not post "No Trespassing" signs, but, as required by FERC, posts "Danger" signs.

In a modest runoff events, the narrow wetted streambed, generally less than 6 feet wide, in combination with the long and steep streambed gradients, results in water velocities of 6-8 feet per second. This readily transports away the sand, gravel, small rocks and organic material. Runoff events occurring 5-10 times a year (greater than 150 cfs) carry off the same as well as bigger boulders and debris. Tropical Storm Irene, estimated at 4000 cfs, had velocities of 25 feet per second and wiped everything clean as a whistle. The storm seemed more akin to hydraulic mining as I could hear huge boulders bouncing off each other as they rocketed down the brook that was probably 25% solids.

There is an endless cycle of heavy bed load transport in Lull Brook because of significant gravel overburden upstream of the project. The Vermont Agency of Natural Resources and the USFWS were justified in concluding conditions for natal fish production were poor in the Lull Brook bypass and there was no need for fish passage. Nothing has changed in the last 5 years to alter that conclusion.

Thank you for your consideration. Contact me anytime.

Jay Boeri, President Martinsville Hydro Corp.



Looking down at the entire reservoir from along the guard rail of the Route 5 bridge.

Photo taken from the middle of the bypass during a modest flow (about 20 cfs).



Table B-1. Facility Description Information for Martinsville Hydro (LIHI #85).

Information Type	Variable Description	Response (and reference to further details)
Name of the Facility	Facility name (use FERC project name if possible)	Martinsville Water Power Project
Location	River name (USGS proper name)	Lull Brook
	River basin name	Connecticut River
	Nearest town, county, and state	Hartland, Windsor, VT
	River mile of dam above next major river	0.8
	Geographic latitude	43.537357
	Geographic longitude	-72.401580
Facility Owner	Application contact names (IMPORTANT: you must also complete the Facilities Contact Form):	Jay Boeri
	- Facility owner (individual and company names)	Martinsville Hydro Corp. John Jay Boeri, Pres
	- Operating affiliate (if different from owner)	N/A
	- Representative in LIHI certification	Jay Boeri
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates	7373-000 VT Issued 4/27/1985 Expires 4/26/2035
	FERC license type or special classification (e.g., "qualified conduit")	License
	Water Quality Certificate identifier and issuance date, plus source agency name	Martinsville Hydroelectric Project VT Dept of Water Resources, issued 11/28/1983
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	No link available. Last notice (FERC) 1994 accepting As-Built drawings.
Power Plant Characteristics	Date of initial operation (past or future for operational applications)	November, 1986
	Total name-plate capacity (MW)	250 kW
	Average annual generation (MWh)	750,000 kWh
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	2 crossflow turbines each rated at 125 kW With hyd. capacity of 24 max and 4 min - cfs
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	Run-of-river
	Dates and types of major equipment upgrades	Turbine-generator rebuilds 2012
	Dates, purpose, and type of any recent operational changes	None
	Plans, authorization, and regulatory activities for any facility upgrades	No plans for any facility upgrades

Characteristics of Dam, Diversion, or Conduit	Date of construction	1985-1986
	Dam height	15 feet
	Spillway elevation and hydraulic capacity	547.5 msl
	Tailwater elevation	449.5 msl
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	3 foot dia. steel penstock, 540 feet long
	Dates and types of major, generation-related infrastructure improvements	N/A
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Electric power generation
	Water source	Lull Brook
	Water discharge location or facility	Hartland, VT
Characteristics of Reservoir and Watershed	Gross volume and surface area at full pool	Volume = 0.5 acre-feet Area = 0.10 acres
	Maximum water surface elevation (ft. MSL)	547.5 msl
	Maximum and minimum volume and water surface elevations for designated power pool, if available	N/A
	Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile	No functioning dam
	Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile	No functioning dam
	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	N/A
	Area inside FERC project boundary, where appropriate	2 acres
Hydrologic Setting	Average annual flow at the dam	39 cfs
	Average monthly flows	Jan-Dec in cfs 34,17,19,128,48,26,25,16,7,15,16,35
	Location and name of relevant stream gauging stations above and below the facility	none
	Watershed area at the dam	22 square miles
Designated Zones of Effect	Number of zones of effect	Zones 2 (impoundment) and 3 (bypass)
	Upstream and downstream locations by river miles	Reservoir @ 0.8 Bypass @ 0.8 to 0.85
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Impoundment and bypass reach
	Delimiting structures	N/A
	Designated uses by state water quality agency	none
Additional Contact Information	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	See Matrix sheet

	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	N/A
<i>Photographs and Maps</i>	Photographs of key features of the facility and each of the designated zones of effect	See cover letter
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	See cover letter

Matrix of Alternative Standards Template:

(Please duplicate this table for each Zone of Effect)

Facility Name: Martinsville Hydro

Zone of Effect: 2 (Reservoir)

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			
B	Water Quality	X				
C	Upstream Fish Passage	X				
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X				

Facility Name: Martinsville Hydro

Zone of Effect: 3 (Bypass)

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			
B	Water Quality	X				
C	Upstream Fish Passage	X				
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X				

After their reviews, no agency ever required resource protection for recreation, shoreline, watershed, historic, cultural, endangered or threatened species or fish passage issues. In 2012 the Hydro Review Coordinator for the Vermont Natural Resources Agency (VANR) had an opportunity to review these matters. He said the agency had no plans to review the project until its license expired. Please see Appendix A.

The only LIHI criterion remaining is water quality. In 1984 VANR inspected the site and bypass reach of Martinsville Hydro and, the year after operations began, confirmed the adequacy of their minimum flow release requirements. The USFWS was in agreement. As mentioned earlier, Martinsville's recent upgrade of its PLC based controller and pond level sensors allows for some data storage of pond level. This helps insure the project is in compliance with established flow requirements.

FACILITY CONTACTS FORM

1. All applications for LIHI Certification must include complete contact information to be reviewed.

Project Owner:	
Name and Title	John Jay Boeri, President
Company	Martinsville Hydro Corp
Phone	802-356-2346
Email Address	jay@vermontel.net
Mailing Address	257 Weed Rd Hartland, VT 05048
Project Operator (if different from Owner):	
Name and Title	same
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	same
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	same
Company	
Phone	
Email Address	
Mailing Address	
Party responsible for accounts payable:	
Name and Title	same
Company	
Phone	
Email Address	
Mailing Address	

2. Applicant must identify the most current and relevant state, federal, provincial, and tribal resource agency contacts (copy and repeat the following table as needed).

Agency Contact (Check area of responsibility: Flows <input checked="" type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/>):	
Agency Name	Vermont Agency of Natural Resources – Hydro Review
Name and Title	Brian Fitzgerald, coordinator
Phone	802-338-4852
Email address	Brian.fitzgerald@state.vt.us
Mailing Address	10o South Main Street Waterbury, VT 05671-0408

Agency Contact (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/>):	
Agency Name	USFWS
Name and Title	John Warner
Phone	603-223-2541
Email address	John_warner@fws.gog
Mailing Address	103 East Plumtree Rd Sunderland, MA 01375

STATE OF VERMONT

2014

303(d) LIST OF IMPAIRED WATERS

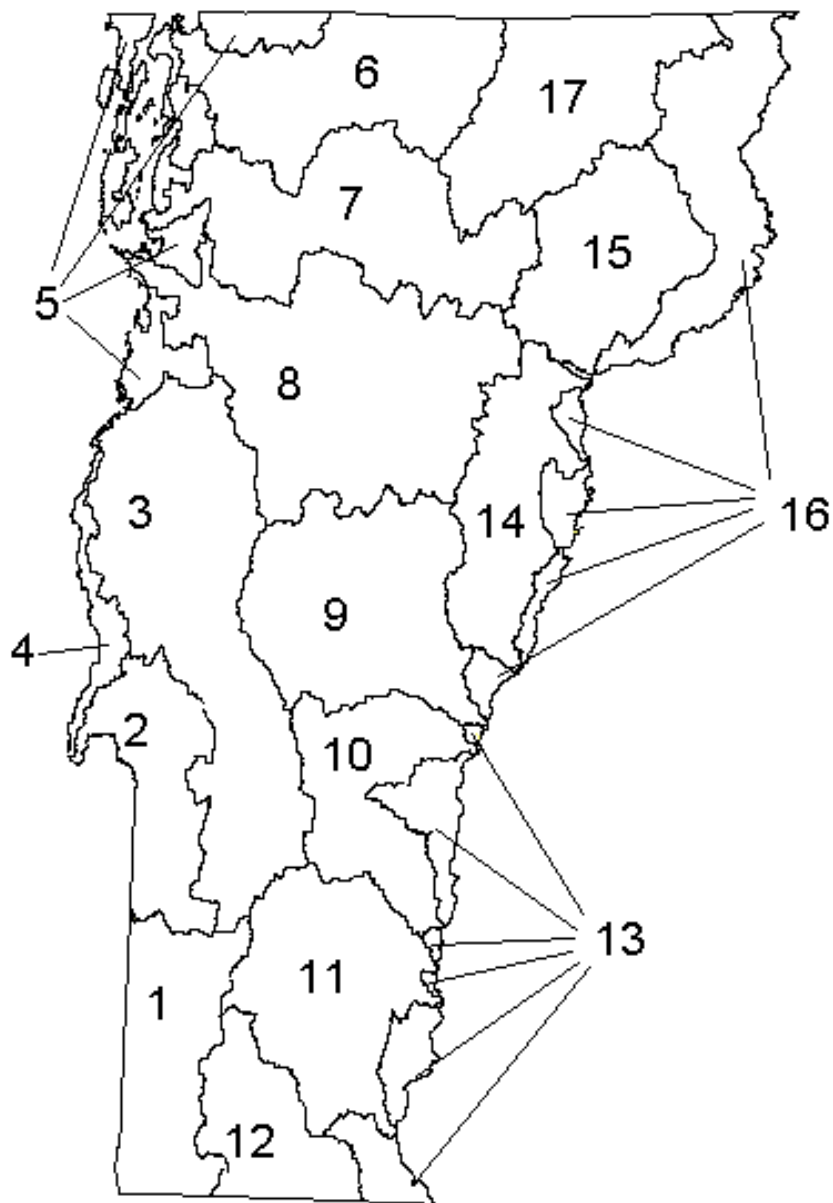
PART A - IMPAIRED SURFACE WATERS IN NEED OF TMDL

SEPTEMBER 2014

(Approved by USEPA Region 1 – September 30, 2014)

Prepared by:

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522



Major Vermont River Basins

1. Battenkill
2. Poultney-Mettawee
3. Otter Creek
4. Lower Lake Champlain
5. Upper Lake Champlain
6. Missisquoi
7. Lamoille
8. Winooski
9. White
10. Ottauquechee
11. West
12. Deerfield
13. Lower Connecticut
14. Wells, Waits, Ompompanoosic
15. Passumpsic
16. Upper Connecticut
17. Lake Memphremagog

PART A – IMPAIRED WATERS IN NEED OF A TMDL (303d LIST)

Part A of the 2014 List of 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.

Explanation of Column Headings for Part A

Waterbody ID - An alphanumeric code used to spatially locate designated surface waterbodies. For example, VT01-02 and VT01-03L05 represent a river and a lake waterbody, respectively, located in Vermont river basin #01. River basin #01 includes the Batten Kill, Hoosic and Walloomsac rivers; there are 17 river basins for planning purposes identified in Vermont.

ADB Code(s) – Assessment Database segment code used for EPA tracking purposes. If blank, Waterbody ID represents entire ADB code.

Segment Name/Description - The name of the river/stream segment or lake/pond. Entries denoted by “**” indicate newly identified impairments since the 2012 list.

Pollutant(s) - The pollutant or pollutants that cause a violation of the Vermont Water Quality Standards.

Use(s) Impaired - An indication of which designated or existing uses are impaired. The following conventions are used to represent a specific use:

- AES – aesthetics
- ALS - aquatic life support
- CR - contact recreation (i.e. swimming)
- 2CR - secondary contact recreation (fishing, boating)
- FC - fish consumption
- DWS - drinking water supply

Surface Water Quality Problem - A brief description of the problem found in the particular segment.

TMDL Completion Priority - An indication of priority as to when TMDLs will be completed (H=high 1-3 years, M=medium 4-8 years, L=low 8+ years).

	Lakes and Ponds	Streams and Rivers	Total
Total number of impairment entries listed in Part A:	13	68 (2)	81

Number in parentheses () represents new Part A listings since the 2012 listing cycle. The total number of Part A listings has decreased from 86 in 2012 to 81 in 2014.

Part A. Waters appearing below have documentation and data indicating impairment and do not meet VT Water Quality Standards according to the methodology described in the Vermont Surface Water Assessment and Listing Methodology. Required or needed pollution controls have yet to be fully implemented and further pollutant loading determinations (i.e. TMDLs) are necessary - unless remediation will be completed prior to the scheduled TMDL.

Waterbody ID	ADB Code(s)	Segment Name/Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT01-02	01	HOOSIC RIVER, ENTIRE 7 MILE LENGTH IN VERMONT	PCBs	FC	ELEVATED LEVELS OF TOXIC CONTAMINANT IN BROWN TROUT	L
	02	LADD BROOK, MOUTH TO RM 0.4	SEDIMENT	ALS	INDICATION OF SEDIMENT STRESS; POTENTIAL IMPACTS FROM ERODING GRAVEL ROADS	M
VT01-03	01	BARNEY BROOK, MOUTH TO RM 1.5	SEDIMENT, IRON	ALS, AES	DOWNSTREAM OF LANDFILL, HAZ SITE, AND CONSTRUCTED WETLANDS; SILT AND IRON PRECIPITATE CAUSING FISH/INVERT IMPACTS	M
VT01-05	01	LYE BROOK, RM 2.5 TO HEADWATERS (4.5 MILES)	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
VT01-06	01	BRANCH POND BROOK (POND TO ROARING BRANCH)	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
	02	FAYVILLE BRANCH, RM 3.7 TO HEADWATERS	ACID	ALS	ACIDIFICATION, ACID DEPOSITION	M
VT02-02	01	HUBBARDTON RIVER, TRIB #7, BELOW WWTF DISCHARGE	E. COLI, NUTRIENTS, TEMPERATURE	ALS, CR, 2CR	BENSON WWTF, AG RUNOFF POSSIBLE SOURCES; MONITORING & ASSESSMENT REQUIRED	M
VT02-03	01	CASTLETON RIVER, FAIR HAVEN	E. COLI	CR	WWTF PUMP STATION OVERFLOWS	L
VT02-05	02	UNNAMED TRIB TO METTAWEE RIVER	METALS (IRON, ZINC)	ALS	PAWLET LANDFILL LEACHATE	M
VT03-01	02	LOWER OTTER CREEK, BELOW VERGENNES WWTF (APPROX 7 MILES)	E. COLI	CR	PERIODIC & RECURRING OVERFLOWS AT PUMP STATIONS WITHIN THE COLLECTION SYSTEM	L
VT03-05	01	OTTER CREEK, VICINITY OF RUTLAND CITY WWTF	E. COLI	CR, AES	RUTLAND CITY WWTF COLLECTION SYSTEM PASSES CSOs	L
VT03-07	02	LITTLE OTTER CREEK, RM 15.4 TO RM 16.4	NUTRIENTS, SEDIMENT	ALS	AGRICULTURAL RUNOFF	H
VT03-12	02	HALNON BROOK, TRIBUTARY #1	NUTRIENTS	ALS	ELEVATED NUTRIENTS AFFECT AQUATIC BIOTA	M

Certain local, state and federal regulatory programs refer to impaired segments (or waters draining to those segments) listed on the 303d List of Impaired Waters as part of program operations. Contact the respective regulatory program for details regarding regulated activities in these waters and their watersheds.

Part A. Waters appearing below have documentation and data indicating impairment and do not meet VT Water Quality Standards according to the methodology described in the Vermont Surface Water Assessment and Listing Methodology. Required or needed pollution controls have yet to be fully implemented and further pollutant loading determinations (i.e. TMDLs) are necessary - unless remediation will be completed prior to the scheduled TMDL.

Waterbody ID	ADB Code(s)	Segment Name/ Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT03-14	01	EAST CREEK, MOUTH TO 0.2 MI (BELOW CSO DISCHARGE PTS #2 AND #9)	E. COLI	CR, AES	RUTLAND CITY COLLECTION SYSTEM CSO	L
VT04-01L01	01, 02, 03, 04	OTTER CREEK SECTION - LAKE CHAMPLAIN (Ferrisburg)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT04-01L02	01, 02, 03	PORT HENRY SECTION - LAKE CHAMPLAIN (Ferrisburg)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT04-02L01	01, 02	SOUTHERN SECTION - LAKE CHAMPLAIN (Bridport)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-01	01	ROCK RIVER - MOUTH TO VT/QUE BORDER (3.6 MILES)	NUTRIENTS, SEDIMENT	AES, AH	ALGAL GROWTH; AGRICULTURAL RUNOFF	H
	02	ROCK RIVER, UPSTREAM FROM QUE/VT BORDER (APPROX 13 MILES)	NUTRIENTS, SEDIMENT	ALS	AGRICULTURAL RUNOFF; NUTRIENT ENRICHMENT	H
	03	SAXE BROOK (TRIB TO ROCK RIVER) FROM MOUTH UPSTREAM 1 MILE	NUTRIENTS	ALS	AGRICULTURAL RUNOFF	H
VT05-04L01	01, 02, 03	NORTHEAST ARM - LAKE CHAMPLAIN (Swanton)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-04L02	01, 02	ISLE LAMOTTE - LAKE CHAMPLAIN (Alburg)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-07	01	RUGG BROOK, FROM MOUTH TO APPROX 3.1 MILES UPSTREAM	NUTRIENTS, SEDIMENT, E. COLI	ALS, CR, AES	AGRICULTURAL RUNOFF	H
	03	JEWETT BROOK (3.5 MILES)	NUTRIENTS, SEDIMENT, E. COLI	ALS	AGRICULTURAL RUNOFF	H
	04	MILL RIVER, FROM ST. ALBANS BAY TO 1.8 MILES UPSTREAM	NUTRIENTS, SEDIMENT	ALS	AGRICULTURAL RUNOFF, STREAMBANK EROSION	H

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Waterbody ID	ADB Code(s)	Segment Name/Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT05-07	05	STEVENS BROOK, MOUTH UPSTREAM 6.5 MILES	NUTRIENTS, SEDIMENT, E. COLI	ALS, CR	AGRICULTURAL RUNOFF; MORPHOLOGICAL INSTABILITY, ST ALBANS CSO	H
	06	**STEVENS BROOK, LASALLE ST DOWNSTREAM 0.5 MI	METALS (Cd, Ba, CN, Zn)	ALS, CR	SED CONTAMINATION FROM ST ALBANS GAS AND LIGHT HAZ WASTE SITE	L
VT05-07L01	01, 02	ST. ALBANS BAY - LAKE CHAMPLAIN (St. Albans)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-09L01	01, 02, 03	MALLETTS BAY - LAKE CHAMPLAIN (Colchester)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-10L01	01, 02, 03	BURLINGTON BAY - LAKE CHAMPLAIN (Burlington)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-10L02	01, 02	MAIN SECTION - LAKE CHAMPLAIN (South Hero)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT05-11L01	01, 02, 03	SHELBURNE BAY - LAKE CHAMPLAIN (Shelburne)	PCBs	FC	ELEVATED LEVELS OF PCBs IN LAKE TROUT	L
VT06-04	01	BERRY BK, MOUTH UP TO AND INCLUDING NO. TRIB (APPROX. 1 MI)	SEDIMENT, NUTRIENTS	ALS, AES	AGRICULTURAL RUNOFF, AQUATIC HABITAT IMPACTS	H
	02	GODIN BROOK	NUTRIENTS, SEDIMENT	ALS, AES	AGRICULTURAL RUNOFF, AQUATIC HABITAT IMPACTS	H
	03	SAMSONVILLE BROOK	NUTRIENTS, SEDIMENT	ALS, AES	AGRICULTURAL RUNOFF, AQUATIC HABITAT IMPACTS	H
	04	TROUT BROOK, UPSTREAM FROM MOUTH FOR 2.3 MILES	NUTRIENTS	ALS	AGRICULTURAL RUNOFF	H
VT06-05	02	WANZER BROOK (MOUTH TO RM 4.0)	NUTRIENTS, SEDIMENT	ALS	AGRICULTURAL RUNOFF	H
VT06-08	03	MUD CREEK, FROM VT/QUE BORDER UP TO RM 6.5 (APPROX. 3.2 MILES)	NUTRIENTS, SEDIMENT	ALS, AES	AGRICULTURAL RUNOFF; NUTRIENT ENRICHMENT	H

Certain local, state and federal regulatory programs refer to impaired segments (or waters draining to those segments) listed on the 303d List of Impaired Waters as part of program operations. Contact the respective regulatory program for details regarding regulated activities in these waters and their watersheds.

Part A. Waters appearing below have documentation and data indicating impairment and do not meet VT Water Quality Standards according to the methodology described in the Vermont Surface Water Assessment and Listing Methodology. Required or needed pollution controls have yet to be fully implemented and further pollutant loading determinations (i.e. TMDLs) are necessary - unless remediation will be completed prior to the scheduled TMDL.

Waterbody ID	ADB Code(s)	Segment Name/ Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT06-08	04	COBURN BROOK (MOUTH TO RM 0.2)	NUTRIENTS	ALS	AGRICULTURAL ACTIVITY AND RUNOFF	H
	05	BURGESS BROOK, RM 4.9 TO 5.4	SEDIMENT	ALS, CR	ASBESTOS MINE TAILINGS EROSION; ASBESTOS FIBERS	L
	06	BURGESS BROOK TRIBUTARY# 11, MOUTH TO RM 0.5	SEDIMENT	ALS, CR	ASBESTOS MINE TAILINGS EROSION; ASBESTOS FIBERS	L
VT07-03	01	DEER BROOK, MOUTH TO 2.5 MILES UPSTREAM	SEDIMENT	ALS	EROSION FROM STORMWATER DISCHARGES; CORRODING ROAD CULVERTS; BMPs IMPLEMENTED	M
VT07-08	01	RODMAN BROOK, MOUTH TO RM 0.6	IRON	ALS, AES	IMPACTS FROM LANDFILL LEACHATE	M
VT07-13	01	TRIB TO BREWSTER RIVER (1 MILE)	METALS (IRON)	AES, ALS	IRON SEEPS ON STREAMBANK; BMPs IN PLACE	L
VT07-15	01	HUTCHINS BROOK, RM 2.0 TO 3.0	SEDIMENT	ALS, AES, CR	ASBESTOS MINE TAILINGS EROSION; ASBESTOS FIBERS	L
	02	HUTCHINS BROOK TRIBUTARY #4, MOUTH TO RM 0.3	SEDIMENT	ALS	ASBESTOS MINE TAILINGS EROSION; ASBESTOS FIBERS	L
VT08-01	01	**WINOOSKI RIVER, MOUTH TO WINOOSKI DAM (~10.5 MILES)	E. COLI	CR	BURLINGTON CSOs	L
VT08-02	03	TRIBUTARY #4 AND TRIB TO TRIB #4, MUDDY BROOK	UNDEFINED	ALS	CHLORIDE AND TCE IMPACT FROM PAST DISPOSAL ACTIVITIES	L
VT08-02L01		SHELBURNE POND (Shelburne)	PHOSPHORUS	ALS, CR, 2CR	EXCESSIVE ALGAE AND NATIVE PLANT GROWTH CAUSES PERIODIC LOW D.O./FISH KILLS	L
VT08-05	01	WINOOSKI RIVER ABOVE MONTPELIER WWTF DISCHARGE	E. COLI	CR	MONTPELIER WWTF COLLECTION SYSTEM PASSES COMBINED SEWER OVERFLOWS	L
VT08-11L02	02	WATERBURY RESERVOIR (Waterbury)	SEDIMENT	ALS, AES	SEDIMENTATION, TURBIDITY	L

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Waterbody ID	ADB Code(s)	Segment Name/ Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT08-12	01	INN BROOK, RM 0.3 TO 0.6	IRON	ALS, AES	IRON SEEPS ORIGINATING FROM DISTURBED SOILS	L
VT08-13	01	LOWER NORTH BRANCH, WINOOSKI RIVER (APPROX 1 MILE)	E. COLI	CR	MONTPELIER WWTF COLLECTION SYSTEM PASSES COMBINED SEWER OVERFLOWS	L
VT08-16	01	GUNNER BROOK, BELOW FARWELL ST. DUMP (APPROX 0.5 MILE)	METALS (Cu, Fe), NUTRIENTS, SEDIMENT	AES, ALS	FARWELL ST. LANDFILL LEACHATE, SURFACE RUNOFF FROM DEVELOPED AREA	M
VT08-20	01	CLAY BROOK, RM 1.8 TO RM 2.3	STORMWATER, IRON	ALS, AES	STORMWATER RUNOFF, EROSION FROM CONSTRUCTION ACTIVITIES & GRAVEL PARKING LOT; INCREASED PEAK STORMWATER FLOWS	L
VT09-06	01	SMITH BROOK (MOUTH TO RM 0.3)	IRON	ALS, AES	APPARENT LEACHATE FROM ADJACENT OLD DUMP	M
VT10-04	01	WETLAND DRAINING TO SMALL STREAM TO OTTAUQUECHEE RIVER (BRIDGEWATER)	METALS (Fe)	ALS, AES	BRIDGEWATER LANDFILL; LEACHATE ENTERING SURFACE WATER VIA WETLAND	M
VT10-06	01	ROARING BROOK, RM 3.5 TO RM 4.2	STORMWATER	AES, ALS	STORMWATER RUNOFF, LAND DEVELOPMENT; EROSION	L
	02	E. BRANCH ROARING BROOK, RM 0.1 TO RM 0.6	STORMWATER, IRON	AES, ALS	STORMWATER RUNOFF, LAND DEVELOPMENT, EROSION	L
VT10-11	01	BLACK RIVER; FROM MOUTH TO FELLOWS DAM (~ 4.6 MI.)	E. COLI	CR	COMBINED SEWER OVERFLOWS	L
VT11-10	01	WEST RIVER, BELOW BALL MOUNTAIN DAM TO TOWNSHEND DAM (9 MILES)	TEMPERATURE	2CR	ELEVATED TEMPERATURES AFFECT FISHERY	L
VT11-15	03	BALL MOUNTAIN BROOK, ABOVE NORTH BRANCH CONFLUENCE	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
	04	BEAR CREEK BROOK, RM 0.7 TO HEADWATERS	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M

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Waterbody ID	ADB Code(s)	Segment Name/Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT11-15	05	KIDDER BROOK, CONFLUENCE OF SUN BOWL BROOK TO HEADWATERS	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
VT12-03	01	EAST BRANCH DEERFIELD RIVER, BELOW SOMERSET DAM, 5.2 MILES	ACID	ALS	ATMOSPHERIC DEPOSITION: CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
VT12-04	01	UPPER DEERFIELD RIVER, BELOW SEARSBURG DAM, 3.6 MILES	ACID	ALS	ATMOSPHERIC DEPOSITION; CRITICALLY ACIDIFIED; CHRONIC ACIDIFICATION	M
VT12-05	01	NO. BRANCH DEERFIELD RIVER, TANNERY BRK RD TO 0.2 MI ABOVE SNOW LAKE	STORMWATER	AES, ALS	STORMWATER RUNOFF, LAND DEVELOPMENT & CONSTRUCTION RELATED EROSION	L
	03	IRON STREAM, TRIB TO JACKS BROOK (0.3 MILE)	IRON	ALS	LAND DEVELOPMENT, SOURCE(S) NEED FURTHER ASSESSMENT	M
VT13-10	01	COMMISSARY BROOK TRIB, MOUTH TO RM 0.2	SEDIMENT	AES, ALS	BANK FAILURE AND EROSION DUE TO PAST CLAY MINING	L
VT13-13	01	CROSBY BROOK, MOUTH TO RM 0.7	SEDIMENT	ALS	HABITAT ALTERATIONS DUE TO SEDIMENTATION, CHANNELIZATION AND BUFFER LOSS	M
VT13-16	01	NEWTON BROOK, MOUTH TO RM 2.0	SEDIMENT	ALS	AGRICULTURAL ACTIVITY	H
VT14-02	02	COPPERAS BROOK (1 MILE)	METALS, ACID	AES, ALS, CR, 2CR, FC	HIGH METALS IN DRAINAGE FROM ABANDONED ELIZABETH MINE & FROM TAILINGS PILES	L
	04	LORDS BROOK, HEADWATER TRIBUTARY #2 AND TRIB 2-TRIB 1	METALS	ALS	ABANDONED MINE DRAINAGE BELOW "SOUTH CUT" AND "SOUTH MINE"	L
VT14-03	03	SCHOOLHOUSE BROOK AND TRIBUTARY	METALS, ACID	AES, ALS	HIGH METALS IN DRAINAGE FROM ABANDONED ELY MINE	M
VT14-05	01	PIKE HILL BROOK, FROM MOUTH TO 4 MILES UPSTREAM	METALS	AES, ALS	HIGH METALS IN DRAINAGE FROM ABANDONED PIKE HILL MINE & TAILINGS	M

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Waterbody ID	ADB Code(s)	Segment Name/Description	Pollutant(s)	Use(s) Impaired	Surface Water Quality Problem(s)	TMDL Priority
VT14-05	02	TABOR BRANCH TRIBUTARY #6, MOUTH TO RM 0.1	UNDEFINED	ALS	AGRICULTURAL RUNOFF	H
VT14-06	01	COOKVILLE TRIB #4, RM 1.0 TO 1.7	METALS	ALS	ACID MINE DRAINAGE ASSOCIATED WITH PIKE HILL MINE	L
VT15-01	01	PASSUMPSIC RIVER, TREMONT STREET DNWSTRM 5 MILES THROUGH ST J.	E. COLI	CR	ST. JOHNSBURY WWTF COLLECTION SYSTEM PASSES COMBINED SEWER OVERFLOWS	L
VT15-04	01	LOWER SLEEPERS RIVER IN ST. JOHNSBURY	E. COLI	CR	ST. JOHNSBURY WWTF COLLECTION SYSTEM PASSES COMBINED SEWER OVERFLOWS	L
VT17-01L01	01, 02	LAKE MEMPHREMAGOG (Newport)	PHOSPHORUS	AES, CR	EXCESSIVE ALGAE GROWTH, NUTRIENT ENRICHMENT	H
VT17-02	01	STEARNS BROOK TRIBUTARY (HOLLAND)	NUTRIENTS	ALS	AGRICULTURAL RUNOFF	H

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To: Gabriela Goldfarb <gabriela@goldfarbconsulting.com>
From: Jay Boeri <jboeri@vermontel.net>
Subject: Fwd: RE: Re: Martinsville Hydro
Cc:
Bcc:
Attached:

ATTACHMENT D No Plan to Reevaluate Martinsville

X-RC-FROM: <brian.fitzgerald@state.vt.us>
X-RC-RCPT: <jboeri@vermontel.net>
From: "Fitzgerald, Brian" <Brian.Fitzgerald@state.vt.us>
To: "'Jay Boeri'" <jboeri@vermontel.net>
Date: Sun, 8 Apr 2012 19:27:48 -0400
Subject: RE: Re: Martinsville Hydro - One simple question.

Jay:

The Agency of Natural Resources has no plans at this time to reevaluate operation of the Martinsville Hydro Project prior to the project's relicensing, which I believe will begin in 2029.

BTF

Brian T. Fitzgerald
Streamflow Protection Coordinator
Vermont Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
10 East Allen Street
Winooski, VT

Mailing address:

103 South Main Street
Waterbury, VT 05671-0408

802.338.4852
802.793.0454 (cell)

From: Jay Boeri [mailto:jboeri@vermontel.net]
Sent: Wednesday, March 21, 2012 08:43
To: Fitzgerald, Brian
Subject: Fwd: Re: Martinsville Hydro

Brian,

Within the next five years, do you have any plans to reevaluate Martinsville's operational requirements?

Anything I can do for you?
Thanks,
Jay Boeri

To: Gabriela Goldfarb <gabriela@goldfarbconsulting.com>
From: Jay Boeri <jboeri@vermontel.net>
Subject: Fwd: Re: Martinsville Hydro
Cc:
Bcc:
Attached:

ATTACHMENT E USFWS Fish Passage

X-RC-FROM: <Melissa_Grader@fws.gov>
X-RC-RCPT: <jboeri@vermontel.net>
Subject: Re: Martinsville Hydro - One simple question.
To: Jay Boeri <jboeri@vermontel.net>
Cc: brian.fitzgerald@state.vt.us, rod.wentworth@state.vt.us,
John_Warner@fws.gov
From: Melissa_Grader@fws.gov
Date: Mon, 12 Mar 2012 09:29:51 -0400
03/12/2012 07:40:54 AM

Hello Jay,

This responds to your question "Does the USFWS have any plans within the next five years (or longer time if you know) to require catadromous passage at Martinsville?"

The Service does not have plans to require catadromous fish passage at the Martinsville Project within the next five years. However, the Service will be pursuing eel passage as part of the relicensing of the mainstem Connecticut River Projects (including Turners Falls, Vernon, Bellows Falls and Wilder). Lulls Brook enters the mainstem between Bellows Falls and Wilder. Therefore, the Martinsville Project likely will need to provide eel passage after eel passage at the mainstem dams has been implemented (i.e., a short time after 2018).

Sincerely,
Melissa Grader

~~~~~  
Melissa Grader  
Fish and Wildlife Biologist  
US FWS/New England Field Office  
c/o CT River Coordinator's Office  
103 East Plumtree Road  
Sunderland, MA 01375  
413-548-8002, x124  
413-548-9622 (FAX)  
melissa\_grader@fws.gov  
[www.fws.gov/newengland](http://www.fws.gov/newengland)

~~~~~  
▼ John Warner/R5/FWS/DOI

John Warner/R5/FWS/DOI

03/12/2012 08:44 AM Subject

Re: Martinsville Hydro - One simple question.📧

Jay -- I have asked melissa to follow up with you on this -- JW

John P. Warner
Assistant Supervisor, Conservation Planning Assistance and Endangered Species
New England Field Office, U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301
(603) 223-2541 - ext.15
(603) 223-0104 - FAX

www.fws.gov.northeast/newenglandfieldoffice

▼ Jay Boeri <jboeri@vermontel.net>

Jay Boeri <jboeri@vermontel.net>

03/09/2012 10:14 AM

John_Warner@fws.gov

bject

Martinsville Hydro

John,

(1) Martinsville is a small licensed (VT-7373) Vermont hydro plant, with a 6 mile long, 21 square mile drainage basin and typical upland trout stream.

The bypass is in a steep ravine with 100% scoured rock streambed

(2) The USFWS, VTANR, Department of the Interior and NMFS found:

(a) there is a natural barrier to anadromous fish and "no passage facilities are necessary at this time (1984), or for the foreseeable future".

(b) referring to the bypass, " such habitat has little direct value for fish production due to lack of adequate spawning and nursery areas.

Does the USFWS have any plans within the next five years (or longer time if you know) to require catadromous passage at Martinsville?

Please contact me if you have any questions. I have attached the USFWS license comment letter.

Regards

Jay Boeri, PE

Martinsville Hydro
257 Weed Rd.
Hartland, Vermont 05048

802-356-2110 [attachment "usfws comment letter.pdf" deleted by Melissa Grader/R5/FWS/DOI]

Sworn Statement and Waiver Form

SWORN STATEMENT

As an Authorized Representative of Martinsville Hydro Corporation, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.

Company Name: Martinsville Hydro Corp

John Jay Boeri

Authorize Representative Name: John Jay Boeri Title President

State of Vermont

County of Windsor

On this, the 20 day of July, 2016, before me a notary public, the undersigned officer, personally appeared John Jay Boeri, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained. In witness hereof, I hereunto set my hand and official seal.

Notary Public Debra Olmstead