

**Vermont Department of Environmental Conservation***Agency of Natural Resources*

Watershed Management Division

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July 28, 2025

John Tedesco

Green Mountain Power Corp.

163 Acorn Lane

Colchester, VT 05446

RE: Section 401 Water Quality Certification:
Tafsville Hydroelectric Project (FERC No. 2490)

Dear John:

Attached you will find a copy of the water quality certification for the Taftsville Hydroelectric Project, issued by the Vermont Department of Environmental Conservation. You should carefully review the certification, particularly the conditions in the Decision and Certification section. No comments were received during the 30-day public notice period.

Please contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey B. Crocker". The signature is fluid and cursive.

Jeffrey B. Crocker

Supervision River Ecologist

Attachment

c: Distribution List

**VERMONT AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**Water Quality Certification
(33 U.S.C. §1341)**

In the matter of: Taftsville Hydroelectric Project
 Green Mountain Power Corporation
 2163 Acorn Lane
 Colchester, Vermont 05446

APPLICATION FOR TAFTSVILLE HYDROELECTRIC PROJECT

Section 401 of the federal Clean Water Act requires that any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates that any such discharge will comply with other substantive provisions of the Clean Water Act. 33 U.S.C. § 1341(a)(1). The certifying State may set forth any effluent limitations and other limitations, and monitoring requirements necessary to ensure that any applicant for a federal license or permit will comply with the Clean Water Act and with any other appropriate requirement of State law. 33 U.S.C. § 1341(d). In Vermont, the Agency of Natural Resources is the certifying agency of the State for purposes of Section 401 of the Clean Water Act. 10 V.S.A. § 1004. The Secretary of Natural Resources has delegated the authority to make certification determinations to the Department of Environmental Conservation (the Department).

The Department has reviewed a water quality certification application dated August 9, 2024, filed by Green Mountain Power Corporation (the Applicant or GMP) for the Taftsville Hydroelectric Project (the Project). The supporting documentation for the certification application includes the Applicant's Federal Energy Regulatory Commission (FERC) final license application (FERC No. 2490) dated August 30, 2022, and other supporting documents filed by the Applicant in support of the application. The record for this decision supporting documents, include the Applicant's responses to the December 16, 2022, FERC Additional Information Requests (AIR), as well as other relevant documents related to the Project and its relicensing filed through April 1, 2025. An Environmental Assessment for the Project to be conducted by FERC has yet to be completed.

The current application is subject to review under the Vermont Water Quality Standards promulgated by the Agency of Natural Resources and effective November 15, 2022 (Environmental Protection Rule, Chapter 29A) (hereinafter Standards). (Standards, Section 29A-110 Applicability).

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The Department held a public hearing on July 10, 2025, at 1 PM Woodstock town hall located at 31 The Green, Woodstock VT to receive oral comments. A virtual option will be provided. The Department accepted written comments through 4:30 PM on July 25, 2025. Additional information on the decision, application, and any pertinent updates can be found at the Vermont Agency of Natural Resources Environmental Notice Bulletin Board (<https://enb.vermont.gov/>), by searching for the Project name.

The Department, based on the application and record before it, makes the following findings and conclusions.

I. Applicable Statutes and Regulations

A. Applicable Provisions of the Vermont Water Quality Standards

1. The applicable 2022 Vermont Water Quality Standards (Standards) were adopted by the Secretary of the Agency of Natural Resources pursuant to 10 V.S.A., Chapter 47, Water Pollution Control. Section 1252 of Chapter 47 provides for the classification of designated uses as either Class A(1), A(2), B(1) or B(2) and authorizes the adoption of standards of water quality to achieve the purpose of classification.
2. All waters of the State shall be managed to support their designated and existing uses. (Standards, Section 29A-104(b)).
3. The designated uses of waters of the State are: aquatic biota and wildlife that may utilize or are present in the waters; aquatic habitat to support aquatic biota, wildlife, or plant life; the use of waters for swimming and other primary contact recreation; the use of waters for boating and related recreational uses; the use of waters for fishing and related recreational uses; the use of waters for the enjoyment of aesthetic conditions; the use of the water for public water source; and the use of water for irrigation of crops and other agricultural uses. (Standards, Section 29A-104(d)).
4. The affected reaches of the Ottauquechee River have been classified as Class B(2) for all uses.
5. The Antidegradation Policy in the Standards requires that “[a]ll waters shall be managed in accordance with these [Standards] to protect, maintain, and improve water quality.” (Standards, Section 29A-105).
6. The Ottauquechee River designated as cold water fish habitat. (Standards, Section 29A-308).
7. In waters designated as cold-water fish habitat and that the Secretary determines are salmonid spawning or nursery areas important to the

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establishment or maintenance of the fishery resource, the dissolved oxygen (D.O.) standard is not less than 7 mg/L and 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonids. In all other waters designated as a cold-water fish habitat, the standard is not less than 6 mg/L and 70 percent saturation at all times. (Standards, Section 29A-302(5)(A)).

8. The general temperature standard for all waters is “[c]hange or rate of change in temperature, either upward or downward, shall be controlled to ensure full support of aquatic biota, wildlife, and aquatic habitat uses.” (Standards, Section 29A-302(1)(A)).
9. In waters designated as cold water fish habitat and classified as Class B(2) for the fishing designated use, the total increase from ambient temperature due to all discharges and activities shall not exceed 1.0° F. (Standards, Section 29A-302(1)(B)(iii)).
10. The turbidity standard as an annual average under dry weather base-flow conditions is 10 NTU for cold water fish habitat. (Standards, Section 29A-302(4)(A)).
11. The general criteria applicable to all waters include criteria that shall be achieved regardless of their classification including “[s]ludge deposits or solid refuse. None.” (Standards, Section 29A-303(1)).
12. The management objectives for waters classified as Class B(2) for aquatic biota and wildlife are “Waters shall be managed to achieve and maintain good biological integrity” (Standards, Section 29A-306(a)(3)(A)). The Class B(2) criteria for aquatic biota and wildlife use require “[c]hange from the natural condition for aquatic macroinvertebrate and fish assemblages not exceeding moderate changes in the relative proportions of taxonomic, functional, tolerant, and intolerant aquatic organisms.” (Standards, Section 29A-306(a)(3)(B)).
13. The management objectives for waters classified as Class B(2) for aquatic habitat are “[w]aters shall be managed to achieve and maintain high quality aquatic habitat. The physical habitat structure, stream processes, and flow characteristics of rivers and streams and physical character and water level of lakes and ponds necessary to fully support all life-cycle functions of aquatic biota and wildlife, including overwintering and reproductive requirements, are maintained and protected” (Standards, Section 29A-306(b)(3)(A)). The Class B(2) criteria for aquatic habitat use in rivers and streams are “Changes to flow characteristics, physical habitat structure, and stream processes limited to moderate differences from the natural condition and consistent with the full support of high quality aquatic

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habitat.” (Standards, Section 29A-306(b)(3)(B)(i)). Additionally, “waters shall comply with the Hydrology Criteria in Section 29A-304” of the Standards. (Standards, Section 29A-306(b)(3)(B)(iii)).

14. The hydrology policy in the Standards requires that “[t]he proper management of water resources now and for the future requires careful consideration of the interruption of the natural flow regime and the fluctuation of water levels resulting from the construction of new, and the operation of existing, dams, diversions, and other control structures.” (Standards, Section 29A-103(f)(1)).
15. To effectively implement the hydrology policy, hydrology criteria shall be achieved and maintained, where applicable (Standards, § 29A-304(a)). The hydrology criteria require for waters classified as Class B(2) for aquatic habitat that “[a]ny change from the natural flow regime shall provide for maintenance of flow characteristics that ensure the full support of uses and comply with the applicable water quality criteria.” Further, the Standards establish “[t]he preferred method for ensuring compliance with this subsection is a site-specific flow study. In the absence of a site-specific study, the Secretary may establish hydrologic standards and impose additional hydrologic constraints, consistent with any applicable Agency of Natural Resources rule or procedure, to ensure compliance with the requirements of this subsection.” (Standards, Section 29A-304(b)(3)).
16. The water level fluctuation criteria for lakes, ponds, reservoirs, riverine impoundments, and any other waters classified as B(2) for aquatic habitat or boating establish that “waters may exhibit artificial variations in water level when subject to water level management, but only to the extent that such variations ensure full support of uses.” (Standards, Section 29A-304(d)(2)).
17. The management objectives for waters classified as Class B(2) for aesthetics are “[w]aters shall be managed to achieve and maintain good aesthetic quality” (Standards, Section 29A-306(c)(3)(A)). The Class B(2) criteria for aesthetics in rivers and streams are “[w]ater character, flows, water level, bed and channel characteristics, and flowing and falling water of good aesthetic value.” (Standards, Section 29A-306(c)(3)(B)(i)).
18. The management objectives for waters classified as Class B(2) for boating are “[w]aters shall be managed to achieve and maintain a level of water quality compatible with good quality boating (Standards, Section 29A-306(d)(3)(A)). The Class B(2) criteria for boating use is “waters shall comply with the Hydrology Criteria in Section 29A-304 of these rules.” (Standards, Section 29A-306(d)(3)(B)).

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19. The management objectives for waters classified as Class B(2) for swimming and other primary contact recreation are “[w]here sustained direct contact with the water occurs, waters shall be managed to achieve and maintain a level of water quality compatible with good quality swimming and other primary contact recreation with very little risk of illness or injury from conditions that are a result of human activities.” (Standards, Section 29A-306(f)(3)(A)).
20. The management objectives for waters classified as Class B(2) for fishing are “[w]aters shall be managed to achieve and maintain a level of water quality compatible with good quality fishing.” (Standards, Section 29A-306(e)(3)(A)). The criteria for fishing are “measures of wild salmonid densities, biomass, and age composition indicative of good population levels” and compliance with the temperature criteria in Section 29A-302(B) of the Standards. ((Standards, Sections 29A-306(e)(3)(B)(i)) and 29A-306(e)(3)(B)(ii)).

II. Factual Findings

A. General Setting and Background

21. The Taftsville Hydroelectric Project is an existing FERC licensed project (FERC No. 2490) located on the Ottauquechee River in the town of Woodstock in Windsor County, Vermont.
22. The Ottauquechee River is a tributary to the Connecticut River. The mainstem of the Ottauquechee River is roughly 38 miles long and drains approximately 223 square miles. The main stem drops 1,485 feet in elevation over its course, originating on the eastern slopes of the Green Mountains in the town of Killington, Vermont and ending at its confluence with the Connecticut River in the town of Hartland, Vermont.
23. The Ottauquechee River has eroded through a mantle of predominantly glacial material and some underlying bedrock. The river valley is generally characterized by glacial deposits, terrace remnants, rock outcrops and incised gorges.
24. A large portion (approximately 80 percent) of the Ottauquechee River Valley is forested as the rock outcrops and glacial deposits result in stoniness in portions of the basin that limit land use.
25. The Project is currently operating on a license issued September 20, 1994, for a term of 30 years. The current license expired August 31, 2024, and the Project has been operating on an annual license since. The license was issued to Central Vermont Public Service Corporation. In 2012, FERC issued an order approving the transfer of the license from

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Central Vermont Public Service Corporation to the Applicant.

26. The Water Quality Certification was issued to Central Vermont Public Service Corporation in September 1993 and was incorporated into the license.

B. Project and Civil Works

27. The Taftsville Hydroelectric Project is owned and operated by GMP.
28. The Project dam is a concrete gravity dam that is approximately 220 feet long, and 16 feet high. The dam is made up of three sections; (1) the concrete abutment section; (2) a spillway section that is approximately 194 feet long; (3) and an integral intake structure that is approximately 21 feet long. The crest elevation of the concrete abutment section is 637.12 feet (NGVD 29).
29. The dam is topped with 18-inch-high wooden flashboards. When the flashboards are installed the normal water surface elevation is 638.6 feet (NGVD 29). At this water surface elevation, the impoundment has a surface area of approximately 20.5 acres and has a gross storage capacity of 30 acre-feet. The impoundment extends approximately 4,600 feet upstream.
30. The facility has a motorized headgate with a trashrack that is 15 feet long and 13 feet deep. The trashrack has three inch clear bar spacing. The trashracks are manually raked. Most of the debris is passed downstream with inorganic materials being disposed of by the Applicant. However, the Applicant has noted that the amount of debris collected is minimal due to the intake being parallel to the dam.
31. After water moves through the headgates it enters a concrete penstock that is 11 feet high, 6 feet 8 inches wide, and 36 feet long. This results in Project bypassing approximately 290 feet of the Ottauquechee River.
32. The concrete penstock enters the powerhouse which was originally constructed in 1902. The powerhouse is L shaped and made of concrete and brick. The main section is 25 feet long, approximately 44 feet wide, and roughly 21 feet high. The section that contains the turbine is 20 feet long and 24 feet wide.
33. The powerhouse contains a 500-kilowatt S. Morgan Smith vertical Kaplan unit. The hydraulic capacity of the turbine ranges from 95 cfs to 370 cfs. The tailrace of the Project is approximately 200 feet long.
33. Additional appurtenant facilities include plant controls, substations,

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transmission lines as well as other supporting features.

34. On the east shore of the Project, the Applicant provides a take-out with an approximately four-foot-wide by 10-foot-long floating dock. This dock also serves as a cartop boat launch, which is supported by informal parking along the road. The portage is approximately 500 feet long and follows along the eastern shore of the river.
35. The parking area near the powerhouse provides approximately 8 parking spots with one American with Disabilities Act (ADA) compliant parking spot. Additionally, there are two picnic tables with one being ADA compliant.
36. Additional recreational related items include interpretative signage, viewing platform, and bank fishing area.

C. River Hydrology

33. The flow of the Ottauquechee River is unregulated above the United States Geological Survey (USGS) gage (Gage No. 01150900) near West Bridgewater, Vermont. Downstream of the USGS gage in West Bridgewater, flow altering activities on the Ottauquechee River include wastewater treatment plants in Woodstock, Taftsville, Quechee, and South Woodstock. Additional water withdrawals occur along the Ottauquechee River for the purposes of personal irrigation and golf course irrigation.
34. There are also a number of hydroelectric facilities on the Ottauquechee River. These include Quechee Mills (FERC No. 5195), and Dewey Mills (FERC No. 5313) hydroelectric projects, as well as the North Hartland dam (FERC No. 2816), which includes USACE flood control operations, and White Current Dam (FERC No. 2787). There is a second USGS gage (Gage No. 01151500) on the Ottauquechee River below the North Hartland dam. The Taftsville Hydroelectric Project is the most upstream hydroelectric facility on the Ottauquechee River.
35. The following flow statistics were developed using two USGS gages. The two USGS gages were averaged using the area of each. These averaged values were then prorated to the Project site. The two USGS gages used are the Ottauquechee River located at West Bridgewater Vermont (01150900) and the White River at Harford Vermont (01144000). The hydrologic statistics for the Project are provided in Table 1.

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Table 1. Estimated hydrologic statistics at the Taftsville Hydroelectric Project on the Ottauquechee River. Estimates were derived from averages of two USGS gages on the Ottauquechee River at West Bridgewater (01150900) and the White River at Hartford (01144000).

Hydrologic statistic	Discharge Cubic feet per second (cfs)	Discharge Cubic feet per second per square mile (csm)
10 % Exceedance Flow	1098	4.92
50 % Exceedance Flow	306	1.37
90 % Exceedance Flow	88	0.40
7Q10*	31	0.14

* 7Q10 is lowest flow 7-day average flow that occurs once every 10 years on average.

D. Current Operations

36. The Taftsville Hydroelectric Project is currently licensed as a run-of-river hydroelectric Project.¹ This is accomplished by maintaining a stable water surface elevation at the dam.
37. The current license also requires the Applicant to release a continuous year-round minimum flow of 15 cubic feet per second (cfs), or inflow if less. This is accomplished by spilling water into the bypassed reach. This is for the purpose of aquatic habitat and aesthetics. 15 cfs equates to approximately one inch of spill over the dam.
38. The Applicant utilizes 18-inch flashboards on the crest of the dam. During the fall the Applicant removes the 18-inch flashboards and reinstalls them in late spring. During reinstallation of the flashboards the impoundment is drawn down to the dam crest (637.12 feet National Geodetic Vertical Datum (NGVD) 29).
39. After repair or replacement of the flashboards, or maintenance activities, the impoundment is refilled by passing a minimum of 100 cfs, or inflow if less, downstream of the Project and using the remaining to refill the impoundment.
40. In addition to the operations of the Project, the Applicant also provides and maintains access to both the west and east side of the Ottauquechee River through various recreational facilities. These include a parking area,

¹ The Agency defines run-or-river operations as outflow is equal to inflow on a near instantaneous basis. This means that there is no utilization of impoundment storage and therefore there is no artificial regulation of streamflow below the tailrace. The flow regime below the project is essentially the natural flow regime except for short term deviations such as maintenance activities.

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picnic area, viewing platform, bank fishing area, a cartop boat launch, and a canoe portage.

41. The Project also maintains a boat barrier. This barrier is installed on or before May 15th and removed by October 15th each year. The date varies depending on river flows, so workers can safely remove or install the barrier. The rate of drawdown to do this work is not specified.
42. Additionally, the Project uses a Supervisory Control and Data Acquisition (SCADA) system to manage flows and maintain a steady water surface elevation at the dam and provide the required one inch of spill over the dam and records the data in 15- minute intervals. On weekdays the site is visited by operators to ensure compliance and Project safety.

E. Applicant's Proposal

43. The Applicant is proposing to continue to operate the facility as a run-of-river facility.
44. The Applicant proposes to modify the procedure to refill the impoundment such that 90% of inflow is passed below the Project and the remaining 10% is used to refill the impoundment after flashboard replacement or occasions when the impoundment is drawn down for maintenance purposes.
45. The Applicant is also proposing protections for the state and federally listed Northern long-eared bat (*Myotis septentrionalis*). This includes abiding by seasonal tree clearing restrictions for trees 3-inches in diameter at breast height or greater between November 1 – March 31. If tree clearing is needed outside of this period, the Applicant will consult with Vermont Fish and Wildlife Department and the U.S. Fish and Wildlife Service (USFWS).
46. The Applicant is not proposing any modifications to the existing Project facilities.
47. The Applicant is proposing to consult with the Department prior to any maintenance or repair work at the Project, should the work have the potential to have an adverse effect on water quality. Additionally, the Applicant is proposing to consult with the Department regarding the timing and duration of substantial or atypical maintenance or repairs.
48. Lastly, the Applicant is proposing no additional changes from current operations and proposes to continue to maintain existing project recreational facilities.

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F. Current Status of Waters in the Project Area

49. In October 2022, the U.S. Environmental Protection Agency (EPA) approved a list of waters considered to be impaired based on water quality monitoring efforts and in need of total maximum daily load (TMDL) development to address pollution. The Department submitted the list under section 303(d) of the Federal Clean Water Act according to the State of Vermont's 2022 303(d) List of Impaired Waters: Part A. Impaired Surface Waters in Need of TMDL.
50. The Ottauquechee River in the vicinity of the Project is not listed as impaired.
51. The Department concurrently issued a four-part list, List of Priority Surface Waters Outside the Scope of the Clean Water Act Section 303(d) in 2022. These waters correspond to Category 4c of EPA's Consolidated Assessment Listing Methodology. No waters affected by the Project are listed as priority surface waters.
52. The Agency's publication *Hydropower in Vermont, An Assessment of Environmental Problems and Opportunities* is a State comprehensive plan.² The plan indicates that hydroelectric development has a significant impact on Vermont streams, as power projects are usually located on important scenic and ecological sections of streams. Artificial regulation and diversion of natural stream flows were found to have largely reduced the success of state initiatives to restore the beneficial values and uses for which the affected waters are managed under the federal Clean Water Act and Vermont law.
53. The Ottauquechee River Basin Plan provides an overall assessment of the health of the watershed to target resources to those actions that will have the greatest influence on surface water protection or restoration³. The waters affected by the Taftsville Hydroelectric Project are not specifically listed within the State comprehensive plan as a concern.
54. The 2015 Wildlife Action Plan indicates that American Eel is a species of greatest conservation need and listed as a medium priority.⁴ Dams are identified as a threat to the species as they fragment habitat and impede access to valuable rearing habitats. The plan indicates that successful upstream and downstream fish passage at barriers is critical to maintaining a spawning stock biomass from the U.S. Atlantic coast. The

² DesMueles and Parks. 1988. *Hydropower in Vermont. An assessment of Environmental Problems and Opportunities*. Vermont Department of Environmental Conservation. Montpelier, Vermont.

³ Ottauquechee, Black Rivers & Connecticut River Direct Tributaries. Basin 10 Tactical Basin Plan. Montpelier, Vermont. Montpelier, Vermont. September 2023

⁴ Vermont Fish and Wildlife Department. 2015. *Vermont's Wildlife Action Plan*. Montpelier, Vermont.

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plan identifies a high priority strategy for eel is to restore fish passage at dams to allow upstream migrants access to rearing habitats and ensure safe, timely and effective downstream passage of silver eels. The plan recommends the requirement of eelways where warranted for peak passage performance.

G. Water Chemistry

55. There are two wastewater treatment facilities located in the vicinity of the Project. Approximately 3 miles upstream of the Project is the Woodstock wastewater treatment facility. A short distance downstream, approximately 250 feet, the Taftsville wastewater treatment facility discharges into the Ottauquechee River.
56. Previous water quality data collected on the Ottauquechee River has taken place by various parties and sporadically through time. The Ottauquechee River Group collected various water quality parameters including total Phosphorus, total Nitrogen, total Chloride, turbidity, and *Escherichia coli* (E. Coli) bacteria from 2010-2019 at approximately five sampling sites within the vicinity of the Project. Three sample sites were located upstream of the Project roughly 5.8 river miles, three river miles and 325 feet. Table 2 below summarizes the minimum and maximum observed values at those three upstream sites through time.
57. In addition to the sites located upstream of the Project, two additional sites were sampled by the Ottauquechee River group downstream of the Project at a distance from the Project of approximately 600 feet and five river miles. The minimum and maximum values observed at these locations for all sampled parameters are summarized in Table 2.

Table 2. Water Quality data as summarized from Table 4.7 in the FLA. This water quality data was collected by the Ottauquechee River group in the years 2010-2019 in various location on the mainstem of the Ottauquechee River both upstream and downstream of the Project. The parameters collected include total Phosphorus (micro grams per liter), total Nitrogen (milligrams per liter), total Chloride (milligrams per liter), turbidity (Nephelometric Turbidity Unit), and Escherichia coli (E. choli, number per 100 milliliter sample).

Site location	Total Phosphorus	Total Nitrogen	Total Chloride	Turbidity	E. coli
5.8 river miles upstream	<5-54.4	0.12-.47	7.2-18.6	0.33-20.2	11-687
3 river miles upstream	6-1060	0.15-1.5	8-34	0.3-4.9	41-2,420
325 feet upstream	7-348	0.14-.67	7.3-27	0.35-30	6-2,450
600 feet downstream	7-334	0.14-0.64	8-35	0.5-20	14-1,553
5 river miles downstream	7-69	0.13-0.62	6-34	0.7-28	16-2,420

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58. The Department also collected various water quality parameters periodically in the vicinity of the Project. Five of the six sampling sites occurred upstream of the Project, with one approximately 4.8 river miles downstream of the Project. As these sites are at a similar distance to those collected by the Ottauquechee River Group or further from the Project site they are not summarized here.
59. The available water quality data collected in the vicinity of the Project was intermittent and those collecting the data were varied. The Applicant as part of the relicensing conducted a water quality study across two seasons. Specifically, the Applicant collected water temperature and dissolved oxygen (DO).
60. In 2020, the Applicant conducted a water quality study at 5 locations within the Project area. These sites included: the riverine reach just upstream of the impoundment in an area not influenced by the Project; the deepest location within the impoundment approximately 1,000 feet upstream in roughly 9 feet of water; at the intake at a depth representative of the water being pulled into the penstock; in the bypassed reach upstream of the confluence with the tailrace; and in a pool in the tailrace.
61. Sampling included deploying DO and water temperature data loggers that recorded data every 15 minutes. Monitoring occurred from July 23 through August 26. The data logger was only installed in the tailrace from August 6 through August 26 due to the logger being placed only when the Project was able to operate. Additionally, some data was missing in the bypassed reach during the period from August 12 – 19 due to instrument error.
62. The results of the data collected in 2020 showed daily temperature and DO swings associated with the diurnal cycle, which was anticipated. A similar trend occurred at all data loggers. While the loggers were deployed, the Project was unable to operate due to low water flows. There were occasions when the data did not meet Vermont Water Quality Standards. Table 3 below provides the minimum and maximum recorded temperatures and DO at each logger location.

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Table 3. Summary of water quality data collected in 2020 at the Taftsville Hydroelectric Project. The Project was not operational at this time. The values below are temperature in Celsius with the minimum and maximum values recorded. Dissolved oxygen values are provided in both milligrams per liter (mg/L) and percent saturation for both the minimum and maximum recorded values.

Location	Temperature (C°)		Dissolved Oxygen (mg/L)		Dissolved Oxygen (percent saturation)	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Upstream	17.5	29.6	5.5	14.3	69.3	190.0
Impoundment	18.5	26.3	2.6	11.1	31.2	139.3
Intake	17.9	26.0	3.4	12.6	41.1	159.3
Tailrace	18.0	25.2	4.0	10.8	43.7	122.7
Bypass	18.5	27.4	7.0	9.6	85.8	107.3

63. The goal of the study was to collect water quality data, while the Project was operating under low flow (approximately 3 times 7Q10) and warm water conditions. While the low flow high water temperature conditions were met, the Project was unable to operate. The Department requested additional data be collected while the Project was operating.
64. In 2022, the Applicant conducted a second water quality study. This study was more limited to the areas where low dissolved oxygen was collected in 2020. Two data loggers were placed within the Project area, one approximately 1.2 miles upstream of the Project in an area uninfluenced by Project operations and one in the tailrace.
65. The data loggers were in place from July 7 through September 19, 2022. During the more than 10 weeks that the loggers were in place, the Project only operated for 8 hours. During the short period of time when the turbine was in operation, the upstream logger was malfunctioning, although measurements were obtained twice and, on both occasions, DO was above Vermont Water Quality Standards.
66. During the 8 hours the Project was in operation on August 31 and the data loggers were deployed, the DO in the tailrace ranged from 7.94 milligrams per liter (mg/L) to 8.9 mg/L. Percent saturation ranged from 96.1% to 110%. These values are above the Standards.

H. Aquatic Biota

67. *Aquatic Biota* is defined as “all organisms that, as part of their natural life

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cycles, live in or on waters. (Standards, Section 29A-102(4)). Aquatic biota includes fish, aquatic invertebrates, amphibians, and some reptiles such as turtles.

68. The Ottauquechee River is classified as Class B(2) for the aquatic biota and wildlife designated use.
69. In addition to the water quality sampling described in Finding 58 above, the Department's biomonitoring program also conducts macroinvertebrate sampling and assessments to determine support of the aquatic biota designated use. Several assessments were conducted upstream of the Project between 2002 and 2019. The metrics used to assess the macroinvertebrate community (See Appendix G of the Vermont Water Quality Standards) concluded the community to be Good-Fair to Excellent for Class B(2) waters. The following table (Table 4) summarized the macroinvertebrate data.

Table 4. Macroinvertebrate data is summarized from collections from all visits. Number of samples indicated the number of visits that occurred between 2002 and 2019. The overall assessment is a narrative value that accounts for all metrics and considers the most limiting value in that sampling event. Density is the number of individuals collected per square meter. Richness refers to the number of different species present. EPT richness is the number of different species present of the Ephemeroptera, Plecoptera, and Trichoptera groups. HBI refers to the Hilsenhoff Biotic Index.

Location	Number of Samples	Overall Assessment	Density	Richness	EPT Richness	HBI
Woodstock	8	Good/Fair to Very Good	2,520-5,080	42-62	20-37	3.69-5.10
Woodstock	3	Good/Fair to Very Good	3160-3968	42-58	24-35	4.04-4.32
Bridgewater	1	Very Good	917	43	23	3.87
Bridgewater	1	Excellent	2480	47	27	3.05

70. The Ottauquechee River contains both cold and warm water species in the vicinity of the Project. These include but are not limited to: Common Shiner (*Luxilus cornutus*), Golden Shiner (*Notemigonus crysoleucas*), White Sucker (*Catostomus commersoni*), Rock Bass (*Ambloplites rupestris*), Longnose Dace, (*Rhinichthys cataractae*), Blacknose Dace (*Rhinichthys atratulus*), Bluntnose Minnow (*Pimephales notatus*), Fallfish (*Semotilus corporalis*), Smallmouth Bass (*Micropterus dolomieu*), Slimy Sculpin (*Cottus cognatus*), Brown Trout (*Salmo trutta*) and Rainbow Trout (*Oncorhynchus mykiss*).

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71. Wild Brook Trout (*Salvelinus fontinalis*) are also present in the upper mainstem of the Ottauquechee and in tributaries surrounding the Project including Babcock Brook and Happy Valley Brook.
72. The Vermont Fish and Wildlife Department annually stocks Rainbow Trout in the mainstem of the Ottauquechee River from Bridgewater downstream to the top of Taftsville dam.
73. The Ottauquechee drainage is also within the native range of the American Eel (*Anguilla rostrata*), a species of greatest conservation need in Vermont. While eel have not been documented downstream of the Project, there is the potential to consider the need for eel passage above the Project. This is due to some downstream facilities implementing American Eel passage including North Hartland Hydroelectric Project and the Bellows Falls and Vernon hydroelectric projects downstream of the Project on the mainstem of the Connecticut River.
74. The Applicant conducted a freshwater mussel survey in the Project impoundment, bypassed reach, and a short distance downstream. The objective was to characterize the species composition, distribution, relative abundance, age structure, and habitat of the mussel community in areas of the Ottauquechee River influenced by the Project.
75. There were no live mussels or mussel shells located within the impoundment or in the reach downstream of the Project.

Protection Measures for Aquatic Biota

76. Properly sized and positioned intake screening is necessary to minimize impingement and entrainment. Impingement refers to when a fish is held in contact with the intake screen by the flow of water and is unable to free itself. Entrainment refers to when a fish or other aquatic organisms are drawn into a water intake and travel through the turbine.
77. Operation of a hydroelectric project without adequate exclusionary screening may subject fish to impingement on the trashracks or entrainment through the turbine, which conflicts with the management objectives for aquatic biota.
78. The USFWS typically requires full depth, angled trashracks with a maximum clear bar spacing of 1-inch and an approach velocity of two feet per second or less to minimize impingement and entrainment.
79. The trashrack in front of the facility is 5-feet long by 13-feet deep, and

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has 3-inch clear bar spacing. The approach velocity into the trashrack area was not estimated as part of the final license application.

I. Aquatic Habitat

80. *Aquatic habitat* is defined as “the physical, chemical, and biological components of the water environment. (Standards Section 29A-102(5)). Examples include aquatic plants, woody debris, and an adequate flow or water level fluctuation regime.
81. The Ottauquechee River is classified as Class B(2) for the aquatic habitat designated use.
82. There are three distinct areas where the Project may affect aquatic habitat: the impounded reach above the dam, the reach of the Ottauquechee River that is bypassed by the diversion of water to the powerhouse, and the reach downstream of the powerhouse.
83. The Project impoundment has a surface area of approximately 20.5 acres at full pond elevation of 638 feet (NGVD 29), which includes the flashboards. At this water surface elevation the impoundment extends approximately 4,600 feet upstream.
84. The overall impoundment and area where the Ottauquechee River flows over the landscape is a narrow incised valley with rocky hills present on either side.
85. On the western shore of the impoundment the shoreline is narrow, with some trees and shrubs before rising steeply to U.S. Route 4. On the eastern side of the impoundment the shoreline is very narrow before reaching Old River Road.
86. The impoundment historically had been dominated by gravel and boulders, and today mostly consists of silt, gravels, and boulders. According to the mussel study conducted, the substrates within the impoundment consist of clay, silt, sand, gravel, cobbles, boulder, bedrock and a portion has rip-rap.
87. The bypassed reach of the Ottauquechee River is approximately 290 feet long. The relatively low gradient bypassed reach consists of a large pool at the base of the dam. The pool extends roughly 190 feet downstream. The bedrock substrate extends throughout the pool area. Bedrock is higher in elevation on river left, resulting in most of the water, particularly under lower flow conditions, being directed to river right.
88. The remaining 100 feet of the bypassed reach is a low gradient riffle. The

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substrate in this section consists of large boulder and cobble, with some mix of smaller substrate types. It is not anticipated that there is spawning within this reach of the Ottauquechee River.

Hydrologic Conditions to Support Aquatic Habitat

Flow Needs for the Protection of Aquatic Habitat

89. The Applicant has proposed to operate the Project in a true run-of-river mode, where outflow from the Project equals inflow to the Project on an instantaneous basis. Under this operating mode, a project does not operate out of storage, nor does it regulate flow below the project, except for short term and unavoidable circumstances such as during impoundment refilling following maintenance activities and Project shutdowns.
90. An instantaneous run-of-river project operating mode means the flow regime below the project is essentially the river's natural regime, except in the special circumstances.
91. The diversion of river flow creates the bypassed reach where the flow regime is altered. Flow alteration is known to impact aquatic habitat and aquatic biota.⁵
92. The Applicant has proposed to provide a minimum flow of 15 cfs (or inflow, whichever is less) over the dam crest and into the bypassed reach. This equates to approximately one inch of spillage.
93. The Department requested a flow study be conducted in the bypassed reach to assess the conservation flow necessary to support the aquatic habitat designated use. The goal of the study was to quantitatively assess the relationship between flow and aquatic habitat for target species and life stages in the bypass reach to determine the flow necessary to provide high-quality aquatic habitat and meet Vermont water quality standards.
94. The Applicant proposed a modified PHABSIM study. A single transect in the low gradient riffle in the lower end of the bypassed reach was selected to be assessed.
95. The target species and life stages modeled include Brown Trout (juvenile and adult), White Sucker (juvenile and adult), Fallfish (juvenile and adult), Longnose Dace (juvenile and adult), Blacknose Dace (adult), and benthic macroinvertebrates. The habitat suitability curves were supplied by the

⁵ Bunn, S., Arthington, A. 2002. Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity. Environmental Management 30, 492–507.

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Department. Habitat suitability ranges from 0-1, with 1 being optimal based on depth, velocity, and substrate types. The product of those three variables determines the overall suitability at each measured location along the transect. Those products are then summed across the transect at each flow to calculate an estimate of available habitat.

96. The Applicant was able to collect data at four flows by curtailing generation and passing flows over the dam. These flows were 32 cfs, 49 cfs, 75 cfs, and 85 cfs. The data collected at these flows included water surface elevation, depth and velocities across the transect. Substrate type was collected at a single flow. Due to flow conditions, the Applicant was unable to collect the remaining target flows including 15 cfs, 60 cfs, or 96 cfs (0.5 csm).
97. Not all target flows were able to be assessed due to flow limitations at the Project. The Applicant proposed the remaining target flows be modeled, and the Department agreed to this approach. It was agreed that all target flows could likely be assessed given the previous observed flows that were collected in the field could be used to calibrate the model. A temporary staff gauge was used at the transect to assure flows were stable before measurements occurred.
98. Available habitat is presented as a percentage of the maximum available habitat following the limiting habitat approach, which allows all species to be compared simultaneously. The flow at which maximum available habitat was reached varied by species and life stage (Figure 1). Blacknose Dace adults and Longnose Dace juveniles both reach their maximum available habitat observed at 32 cfs. The available habitat then begins to decline with adult Blacknose Dace falling below 80% of the maximum available habitat at 45 cfs and Longnose Dace falling below 80% of the maximum available habitat more gradually at 74 cfs.
99. Benthic macroinvertebrates, Brown Trout adults, Brown Trout juveniles, White Sucker adults and juveniles, and Fallfish adults all reach their maximum available habitat at the highest flows modeled, 96 cfs. Although these species generally continue to increase in available habitat they do so at different rates. Fallfish adult, and Brown Trout adult have the greatest increase in available habitat between 32 cfs and 49 cfs. Brown Trout juveniles and White Sucker juveniles and adults are generally observed to remain steady between 49 and 85 cfs. Benthic macroinvertebrates continue to increase in available habitat with increasing flows. The greatest changes in available habitat occur between 15 cfs and 49 cfs with the rate of increase lessening from 49 cfs to the maximum modeled flow of 96 cfs.

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100. Longnose Dace adult, and Fallfish juvenile neither continuously increase, nor continuously decrease with increasing flows. Both increase with increasing flows from 15 cfs to 49 cfs at a relatively steady rate. Longnose Dace adult and Fallfish juveniles reach the maximum observed available habitat at 49 cfs then begin to decrease slightly (roughly 10 percentage points) between 49 cfs and 86 cfs. Both Longnose Dace adults and Fallfish juveniles then begin to increase slightly to the highest observed flow of 96 cfs. This creates a bimodal curve for these target species and life stages although both remain above 80 % of the maximum observed habitat at flows higher than 32 cfs.

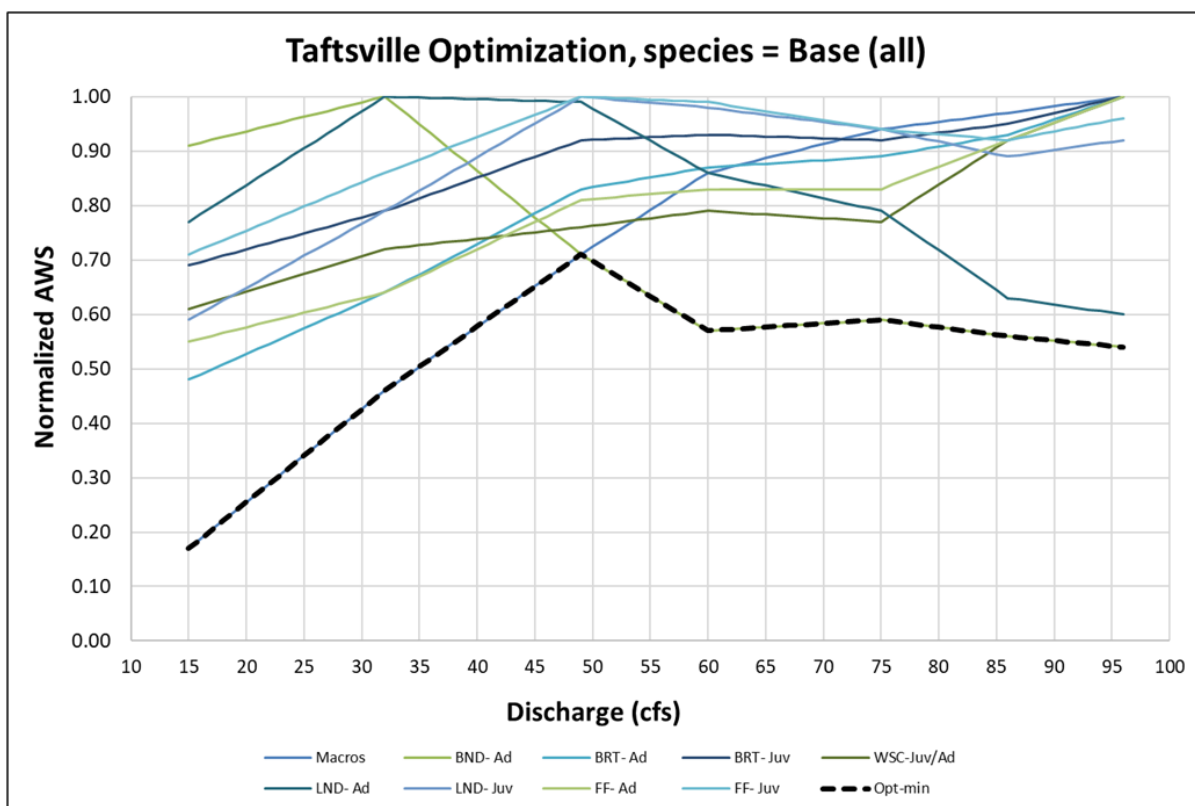


Figure 1. Relationship between flow and habitat (area weighted suitability, AWS) for select species and life stages in a 290-foot-long bypassed reach of the Ottauquechee River below Taftsville Hydroelectric Project. Species include benthic macroinvertebrates (Macro), Blacknose Dace adults (BND- Ad), Brown Trout Adult (BRT-Ad), Brown Trout juveniles (BRT – Juv), White Sucker juveniles and adults (WSC- Juv/Ad), Longnose Dace adults (LND- Ad), Longnose Dace juveniles (LND- Juv), Fallfish adults (FF- Ad), Fallfish juveniles (FF- Juv), and Optimized minimum (Opt-min).

Water Level Fluctuation in the Impoundment

101. Operating in an instantaneous run-of-river mode, the Project will not operate out of storage. This will result in little artificial water level fluctuation within the impoundment during normal operations, outside of

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Project shutdowns or maintenance activities.

102. Maintenance activities are not seasonally planned as they are dependent on when repairs are needed. The timing and duration of a drawdown can have different effects on the habitat available within the impoundment and downstream while the impoundment is being refilled.

Stream Processes and Physical Habitat Structure

103. *Stream processes* are defined as “the hydrologic, bed-load sediment, and large woody debris regimes of a particular stream reach and is a term used to describe stream channel hydraulics, or the erosion, deposition, sorting, and distribution of instream materials by the power of flowing water. Stream processes work toward an equilibrium condition, are governed by flow characteristics, stream morphology, channel roughness, and floodplain connectivity and, in part, determine physical habitat structure and aquatic habitat quality” (Standards, Section 29A-102 (43)).
104. *Physical habitat structure* is defined as “the diverse combination and complexity of instream forms created within substrate and woody debris on and within the bed and banks of the channel by stream processes and flow characteristics. Physical habitat structure, in part, determines aquatic habitat quality at the stream reach and stream network scales by providing for all life cycle functions, which include the full set of forms necessary for the provision of and access to cover, overwintering, and temperature refuge and the substrates necessary for feeding and reproduction of aquatic biota and wildlife.” (Standards, Section 29A-102 (33)).
105. Water level fluctuation and flow alteration associated with hydroelectric projects can contribute to erosion.⁶ The Project while operating under the last license conducted erosion monitoring within the impoundment for the purposes of cultural resources reporting.
106. Within the reports, it has been noted that some erosion has occurred over time. However, the report writer indicated that it was likely a result of the recent high flows in the Project area.

Protection and Support of Life Cycle Functions

107. The Project creates an impediment to fish movement. Many of the species

⁶ Lawson, D.E., 1985, Erosion of northern reservoir shores: An analysis and application of pertinent literature: US Army Corps of Engineers Cold Regions Research and Engineering Laboratory Monograph 85-1, 198 p.

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believed to be present are resident species that change movement patterns. For example, some species, such as Brown Trout, move in the fall in search of spawning habitat, and others may seek refuge due to warming water temperatures.

108. American Eel, as a catadromous fish, depends on successful migration to inland waters and outmigration back to the sea to complete their life cycle.

109. The Project does not currently have passage measures in place for American Eel to access the inland waters above the Project that may be within their historical range.

J. Wildlife and Wetlands

110. The Standards require the Secretary of the Agency of Natural Resources to identify and protect existing uses of state waters, which include those of surficial wetlands. The Standards prohibit activities that degrade the existing uses of wetlands. These uses can include fish and wildlife habitat, fishing, swimming, recreation, water quality maintenance, and others.

111. The USFWS National Wetlands Inventory identified one wetland type within the Project area. This included the impoundment which was listed as riverine. This area did not include any emergent type wetlands or forested-shrub type wetlands.

112. The Vermont Wetlands Program has not identified significant wetlands as Class II in the Project area.

K. Rare, Threatened, and Endangered Species

113. Several rare, threatened, and endangered species are, or potentially are, present within the Project area. Those that are applicable to Project operations are discussed below.

114. Two potential species of federal concern are Northern Long-eared Bat which is federally and state listed as endangered and the Monarch Butterfly which is a candidate species for listing under the Endangered Species Act but is not currently listed.

115. Northern Long-eared Bat populations are on the decline across North America. The Project is within the range of the Northern Long-eared Bat (*Myotis septentrionalis*) which is state and federally listed as endangered. This species is in serious danger of extirpation in Vermont and across its range. While the primary stressor is White-nose syndrome, loss of

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maternity roosts is also considered a concern.⁷

116. To protect roosting Northern Long-eared Bat, it is recommended that removal of trees greater than or equal to 3 inches diameter at breast height be avoided between April 1 and October 31.
117. The State of Vermont has additional listed species that are of interest in the Project area. These include Eastern Pearlshell mussels (State listed as threatened), American Eel, and various plant species including Garbers Sedge (*Carex carberi*) and Great St. John's-wort (*Hypericum ascyron*). Both plant species are State listed as threatened.
118. The Applicant as part of the relicensing conducted a mussel study (Findings 74) and no mussels were located in the Project area.
119. The Applicant also conducted a rare plant survey in the vicinity of the Project area. The plant study was conducted in 2020, which included conducting repeat surveys in the early and late growing seasons. The goal of the study was to identify and locate the two plants of interest, Garber's Sedge and Great St. John's-wort. Neither of the target species were observed in the Project area on either June 25 (early growing season) or September 17 (late growing season).
120. Although the two plant species of interest were not located some others were. The following species are considered rare in Vermont and were located in the Project area: Small Dropseed (*Sporobolus neglectus*), Great Blue Lobelia (*Lobelia siphilitica*), Shore Sedge (*Carex lenticularis*), Awned Flatsedge (*Cyperus squarrosus*), and Fescue Sedge (*Carex brevior*).
121. One additional plant species that is State listed as threatened and was also located around the Project area, False Dragon-head (*Physostegia virginiana*). However, only the Lake Champlain basin populations are currently believed to be native to the State and therefore those plants located outside the basin, such as these, are not considered in need of protection.
122. Awned Flatsedge had a larger population in the Project area. There were some indications that some of these plants are subjected to trampling from public access areas. Despite the potential for trampling the number of plants are numerous. It is believed that between the habitat of the area and the seed bank, it is unlikely that the occasional trampling of the plants will not pose a threat to the species persistence.

⁷ Vermont Fish & Wildlife Department. 2015. Vermont Wildlife Action Plan 2015. Vermont Fish & Wildlife Department. Montpelier, VT. <https://vtfishandwildlife.com/node/551>

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123. The other rare listed species located in the Project area, with the exception of Awned Flatsedge, are very small populations. It is anticipated that these small populations are vulnerable to loss regardless of management of the site.
124. American Eel are ranked rare in Vermont and are reported to only spawn in the Sargasso Sea of the Atlantic Ocean. Larvae are carried by ocean currents to coastal areas where they transform into glass eels, then elvers and begin a long upstream migration to inland waters where they can live for more than 20 years as immature yellow eels before returning to the sea to spawn as silver eels.
125. American Eel are subjected to a wide variety of challenges associated with extensive migrations and residency in both marine and freshwater environments. Obstructions, such as dams, can fragment habitat and limit access to valuable rearing habitats. Delays and mortality associated with hydro facilities during outmigration can limit spawning potential and reduce total production. Therefore, successful upstream and downstream fish passage at barriers is critical to maintaining spawning and a viable population.
126. American Eel have not been recently documented downstream of the Project, there is the potential to consider the need for eel passage above the Project. This is due to some downstream facilities implementing American Eel passage including North Hartland Hydroelectric Project and at the Bellows Falls and Vernon hydroelectric projects downstream of the Project on the mainstem of the Connecticut River.

L. Recreation

127. There are a number of recreational opportunities in the vicinity of the Taftsville Project. These include skiing, tubing, swimming, sightseeing, wildlife viewing, and fishing. Additional opportunities include horseback riding, golf, and visiting historic sites and museums.
128. The Project offers several recreational opportunities at the site. As noted above, the Applicant provides the following recreational area: a take-out with an approximately 4 foot wide by 10 foot long floating dock; a cartop boat launch; informal parking along the road; an approximately 500 foot long portage that follows along the river; a parking area near the powerhouse providing approximately 8 parking spots with one American with Disabilities Act (ADA) compliant parking spot; two picnic tables with one being ADA compliant; interpretive sign; directional signs; and road signs.
129. GMP as part of a licensing requirement filled out a Form 80 Hydropower

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Development Recreation Report which in part also estimated recreation use in 2003, 2009, and 2015. The number of recreation days ranged from 336 to 1,000. A recreation day is defined as each visit by a person to a development for recreational purposes during any portion of a 24-hour period. The most used recreational areas were the access area, picnic area, and canoe portage which was 25% or less of the capacity of the Project's recreational use capacity.

130. As noted in Finding 48, the Applicant is proposing to continue to maintain Project recreation facilities.

M. Debris

131. The depositing or emission of debris and other solids to State waters violates Vermont's solid waste laws and Section 29A-303(1) and Section 29A-303(2) of the Standards. Debris may also impair aesthetics and boating.

132. Debris from the trashrack is manually raked. Most of the debris that builds up is moved downstream. The Applicant disposes of inorganic materials in accordance with applicable state laws and regulations, however no details are provided.

N. Aesthetics

133. The area around the Project as noted in the Final License Application is characteristically New England, with villages and rolling hills. Additionally, a historic Taftsville covered bridge, built in 1836, lies a short distance downstream from the dam.

134. The dam sits on a ledge area in a narrow valley with roads on either side of the Project area. The dam is visible from the recreational areas, and the roads.

135. The Applicant is proposing to provide a continuous minimum flow over the dam of 15 cfs. This veil equates to approximately one inch of spillage year-round.

III. Analysis

136. A state's 401 certification shall "evaluate whether the activity will comply with water quality requirements." (40 C.F.R §121.3(a)). Accordingly, the Department may set forth limitations and other requirements necessary for it to find that there is reasonable assurance that the Project will be operated in a manner which will not violate the Standards. A goal of the Standards and the Clean Water Act is to restore the biological integrity of

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waters such that aquatic biota and wildlife are sustained by high quality habitat. (Standards, Section 29A- 103(a)).

137. Continued operation of the Project may lead to violations of Standards. Specific aspects of operations that have the potential to cause such violations are analyzed below to determine the limitations and requirements necessary to find that there is reasonable assurance that the activity will not violate the Standards.
138. In addition to the specific items pertaining to the Application under review, if any activity was not presented in the Application and inconsistent with the findings of this Certification, the Department reserves the right to review such activities to ensure they do not cause a violation of the Standards (e.g., change in operation, maintenance drawdown, construction activity, etc.). In addition to specific operational conditions, other provisions related to operations like reporting, inspections, and flow monitoring will also be necessary to ensure the activity does not violate the Standards.

A. Water Chemistry

139. The Ottauquechee River in the vicinity of the Project is classified as Class B(2) for all designated uses and is designated as cold water fish habitat. The criteria for the dissolved oxygen standard is not less than 7 mg/L and 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonids in waters that the Secretary determines are salmonid spawning or nursery areas important to the establishment or maintenance of the fishery resource. In all other waters designated as a cold water fish habitat, the standard is not less than 6 mg/L and 70 percent saturation at all times. (Standards, Section 29A-302(5)(A)).
140. The historic water quality data in the vicinity of the Project was incomplete and did not speak to potential impacts from Project operations. To assess potential Project related effects, the Applicant conducted a water quality study in 2020 and a more limited water quality study to address data gaps in 2022 (Findings 59-66). Low water flows into the Project created challenges to collect data while the Project was operating.
141. The Applicant's proposal is to operate in an instantaneous run-of-river mode, where water entering into the impoundment is passed downstream at the same discharge. This flow will be provided either through the turbines or via spillage into the bypassed reach. Although it is anticipated that this would provide adequate dissolved oxygen to the downstream

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reaches, the water quality data collected to date has not been able to demonstrate meeting the Standards while the Project is operating.

142. The Certification is conditioned (Condition D) to require the Applicant to collect additional water quality data in limited areas in the Project vicinity, similar to the study plan implemented in 2022 as described above. If it is found that the Project is not in compliance with the Standards, the Applicant shall develop, with approval from the Department, a plan to come into compliance. The plan may include but is not limited to changes in project operations, direct oxygen pumped into the draft tube, adding an aerator at the outflow, or a combination of these. The Applicant shall continue to monitor and submit reports yearly until compliance is demonstrated or achieved.

B. Aquatic Biota

143. The management objectives for waters classified as Class B(2) for aquatic biota and wildlife require such waters to “be managed to achieve and maintain good biological integrity.” (Standards, Section 29A-306(a)(3)(A)). To ensure full support of the aquatic biota use, the Agency seeks to minimize potential negative effects of the Project on fish and other aquatic life.
144. The existing trashracks are described in Findings 30 and 79. The throughrack velocities are unknown. This Certification is conditioned (Condition F) to consult with the Vermont Fish and Wildlife Department and other applicable stakeholders should there be a need to redesign or replace the trashracks in the next license term.

C. Aquatic Habitat

145. Waters designated as Class B(2) for aquatic habitat use “shall be managed to achieve and maintain high quality aquatic habitat...,” characterized by the “physical habitat structure, stream processes, and flow characteristics of rivers and streams and the physical character and water level of lakes and ponds necessary to protect and support all life-cycle functions of aquatic biota and wildlife, including overwintering and reproductive requirements...” (Standards, Section 29A-306(b)(3)(A)).

Hydrologic Conditions to Support Aquatic Habitat

Flow Needs for the Protection of Aquatic Habitat

146. The Applicant proposes to operate the facility in instantaneous run-of-river mode with outflow equal to inflow on a near instantaneous basis except for short term deviations will protect the natural flow regime and will support

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aquatic habitat in the impoundment and below the tailrace. (Findings 89-90 and 101-102; Standards, Section 29A-306(b)(3)).

147. This Certification is being conditioned to adopt the Applicant's proposal such that the operating mode will be instantaneous run-of-river (Findings 43; Condition B).
148. The Applicant proposes to provide a flow of 15 cfs in the bypassed reach. The Applicant conducted a site-specific flow study in the bypassed reach (findings 93-100). The Department takes an approach to at a minimum, maintain 80% of the maximum habitat observed for the most limiting species and life stages, or if not possible, maintain a minimum of 80% of the optimized habitat for all species⁸. At a flow of 49 cfs, the maximum amount of habitat is observed for all species and life stages, but not all species have greater than 80% of their individual maximum observed habitat. In this case, not all of the target species reached 80% or greater of their individual maximum available habitat at any individual flow.
149. There are a range of flows, from 40 cfs to 84 cfs where 80% of the optimized habitat for the group of target species occurs. However, the focus of bypass flows is to identify the minimum flow required. Accordingly, 40 cfs should be considered the floor, although flows as high as 84 cfs may also offer acceptable conditions.
150. Between a flow of 40 cfs and 84 cfs available habitat ranges from 58% - 96%, Blacknose Dace adult available habitat ranges from 86% - 57%, Brown Trout adult available habitat ranges from 73% - 92%, Brown Trout juveniles available habitat ranges from 85% - 94%, White Sucker juvenile/adult available habitat ranges from 74% - 89 %, Longnose Dace juveniles available habitat ranges from 100% - 66%, Longnose Dace adult available habitat ranges from 89% - 90%, Fallfish adult available habitat ranges from 72% - 90%, and Fallfish juvenile available habitat ranges from 93%-92%. The following species retain greater than 80% of their individual maximum available habitat, Brown Trout juveniles, Longnose Dace juvenile, Longnose Dace adult, and Fallfish juveniles, so they are presumed to be adequately protected at any flow between 40 cfs and 84 cfs. Additionally White Sucker adults and juveniles vary by 2% (74%-76%) over the range of flows.

⁸ The optimized habitat calculates the minimum amount of habitat for any individual at each flow, then calculates the maximum value (maximum of the minimums), and determines 80% of that value. *Orth, D.J. and Leonard, P.M., 1990. Comparison of discharge methods and habitat optimization for recommending instream flows to protect fish habitat. Regulated Rivers: Research & Management, 5(2):129-138.*

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151. The remaining fish species of interest are Blacknose Dace adult, Brown Trout adult, and Fallfish adult. Brown Trout adult, and Fallfish adult increase available habitat with increasing flows. Blacknose Dace adult decrease the available habitat with increasing flows. A flow of 45 cfs maximizes the available habitat for the remaining three fish species. A flow of 45 cfs results in 65% of the maximum available habitat for macroinvertebrates.
152. Modeling results indicate that 49 cfs optimizes habitat for the target species within the Taftsville Hydroelectric bypassed reach. Flows as low as 40 cfs and as high of 84 cfs offer reasonable protection of fish and habitat within the bypassed reach. A flow of 45 cfs provides at least 80% of the optimized habitat for the target species and 90% or greater of the maximum available habitat for Brown Trout juveniles Longnose Dace juveniles, Longnose Dace adults, and Fallfish juveniles. This flow provides greater than 75% of their maximum observed available habitat for Blacknose Dace adult, White Sucker juvenile/adult, and Fallfish adult. This flow provides 65% of the available habitat for benthic macroinvertebrates providing a prey base for fish species.
153. This Certification is begin conditioned (Condition B) to provide a minimum of 45 cfs into the bypassed reach of the Ottauquechee River. This flow is consistent with providing high quality aquatic habitat in support of the aquatic habitat designated use.

Water level fluctuation in the impoundment

154. The Applicant is proposing to operate the facility in a run-of-river mode (Finding 89). This is accomplished by maintaining a steady elevation within the impoundment. Therefore, any impoundment fluctuations are anticipated to occur during maintenance activities.
155. The Applicant provides information on how the impoundment is refilled but is silent on the rate of drawdown activities. The Applicant noted that the impoundment is drawdown regularly, at least once per year, for the purpose of removing the flashboards in the fall but is silent on any other routine maintenance activities.
156. Maintenance activities can impact aquatic habitat within the impoundment. That impact can vary depending on the season, extent, and duration. This Certification is conditioned (Condition J) to adopt the Applicant's proposal to consult and seek approval from the Department if deviations from the prescribed flow and water level management are necessary for maintenance purposes, unless those activities have been approved in a flow management plan.

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Physical Habitat and Stream Processes

157. The Applicant has operated the Project in an instantaneous run-of-river mode and proposes to continue this operating mode. The Applicant's proposal will minimize fluctuations in impoundment water levels and downstream flows when inflow is within the capacity of the Project. Therefore, it is not anticipated that continued operation of the Project will adversely affect stream processes or erosion.

Protection and Support of Life Cycle Functions

158. American Eel must be able to pass dams to complete their life-cycle. Specifically, American Eel require access to upstream inland waters to complete their juvenile life stage and when mature they must out-migrate to the sea to reproduce.
159. The Applicant has not proposed protection or mitigation measures related to American Eel. As the Project is within the natural range of American Eel, this Certification is being conditioned to include measures to allow American Eel to complete their life cycle. Pursuant to Condition E of this Certification, within 1 year of upstream eel passage measures being implemented at the next downstream hydroelectric project (FERC No. 5195) the Applicant shall develop a plan to provide eel passage at the Project, which shall include an implementation schedule.

D. Wildlife and Wetlands

160. The Applicant has operated the Project in an instantaneous run-of-river mode and proposes to continue this operating mode. The Applicant's proposal will minimize fluctuations in impoundment levels and downstream flows when inflow is within the capacity of the Project. Therefore, it is not anticipated that continued operation of the Project will adversely affect wildlife or wetlands.

E. Rare, Threatened, and Endangered Species

161. The Northern Long-eared Bat is listed at both the federal and state level (Findings 114- 116). Project operations, in particular maintenance, may affect roosting Northern Long-eared Bats, so protection measures are warranted.
162. The Applicant has proposed to abide by restrictions of clearing trees that are 3-inches in diameter at breast height or greater during the period from April 15th to October 31st. Should tree clearing be required during the restricted time period stated above, the Applicant proposes to consult with the Department, the Vermont Fish and Wildlife Department, and the

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USFWS regarding removal needs. To protect roosting Northern long-eared bat, this Certification is conditioned to adopt the Applicant's proposal (Condition G).

163. Although rare and threatened plant species were located within the Project area, biologists noted that it was unlikely that the current Project activities would harm the plant populations. Therefore, no additional protection measures are warranted.

164. See aquatic biota section for concerns related to American Eel (Findings 158 and 159).

F. Recreation

165. The Standards require that waters achieve and maintain good quality that fully support boating, fishing, and other designated recreational uses. (Standards, Section 29A-306(d)(3)(A); Standards, Section 29A-306(e)(3)(A); and Standards, Section 29A-306(f)(3)(A)).

166. This Certification is conditioned to adopt the Applicants proposal to continue to maintain the recreational facilities at the Project site (Condition H).

G. Debris

167. The Applicant described how the project-related debris is disposed of, which appears to be consistent with the Standards and applicable state laws and regulations (Finding 132). However, this Certification is conditioned (Condition I) to assure that debris disposal is consistent with applicable regulations (Finding 11).

H. Aesthetics

168. Aesthetics is a designated use of the Standards. The management objective for waters classified as Class B(2) for aesthetics is require such waters "be managed to achieve and maintain good aesthetic quality" (Standards, Section 29A-306(c)(3)(A)). The Class B(2) criteria for aesthetics use in rivers and streams are "water character, flows, water level, bed and channel characteristics, and flowing and falling water of good aesthetic value." (Standards, Section 29A-306(c)(3)(B)(i)).

169. The Applicant is proposing to operate the Project in instantaneous run-of-river mode, with a flow into the bypassed reach being provided by spillage over the crest of the dam year-round. The Applicant is proposing a spillage of 15 cfs, which equates to roughly 1-inch of spillage.

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170. The Department generally considers one inch of spillage to be adequate for the protection of aesthetics for Class B(2) waters. The Applicant proposes to provide a minimum flow of 15 cfs or 1-inch into by the bypassed reach.
171. However, as noted above to support the aquatic habitat designed use a flow of 45 cfs is required into the bypassed reach. Accordingly, the flow required to support aquatic habitat will also support the aesthetics designated use (Condition B).

I. Antidegradation

172. Pursuant to the Anti-Degradation Policy set forth in the Standards (Section 29A-105) (the Policy) and the Agency's 2010 Interim Anti-Degradation Implementation Procedure (Procedure), the Secretary must determine whether proposed discharges or activities are consistent with the Policy by applying the Procedure during the review of applications for any permit for a new discharge if, during the application review process, compliance with the Standards is evaluated pursuant to applicable state or federal law. (Procedure, Section III(A)-(D)). This includes water quality certifications required by Section 401 of the federal Clean Water Act for a federal license or permit for flow modifying activities. (Procedure, Section III(B)(3)).
173. In making a determination that proposed activities are consistent with the Anti-Degradation Policy and Implementation Procedure, the Secretary is required to use all credible and relevant information and the best professional judgement of Agency staff. (Procedure, Section III(D)). Section VIII of the Procedure governs the Agency's review of Section 401 applications for flow modifying activities. (Procedure, Section VIII(A)(1)). The Secretary may have to review a single waterbody under multiple tiers of review depending on whether a waterbody is impaired or high quality for certain parameters.
174. Tier 3 review is required if the project will discharge to an Outstanding Resource Water. (Procedure, Section VIII(D)). This Project does not affect any Outstanding Resource Waters and therefore does not trigger a Tier 3 review under Section VIII of the Procedure.
175. This Project affects waters classified as B(2) for all designated uses and criteria, which are presumed to be high quality waters for certain parameters that triggers a Tier 2 review under Section VIII of the Procedure. (Procedure, Section VIII(E)(1)(c)). Under Tier 2, the Secretary must determine whether the proposed discharge will result in a limited reduction in water quality of a high quality water by utilizing all credible

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and relevant information and the best professional judgment of Agency staff. (Procedure, Section VIII(E)(2)(b)).

176. When conducting a Tier 2 review, the Secretary may consider, when appropriate, any of the following factors when determining if a proposed new discharge will result in a reduction in water quality: (i) the predicted change, if any, in ambient water quality criteria at the appropriate critical conditions; (ii) whether there is a change in total pollutant loadings; (iii) whether there is a reduction in available assimilative capacity; (iv) the nature, persistence and potential effects of the pollutant; (v) the ratio of stream flow to discharge flow (dilution ratio); (vi) the duration of discharge; (vii) whether there are impacts to aquatic biota or habitat that are capable of being detected in the applicable receiving water; (viii) the existing physical, chemical and biological data for the receiving water; (ix) degree of hydrologic or sediment regime modifications; and (x) any other flow modifications. (Procedure, Section VIII(E)(2)(d)).
177. The Secretary considered the foregoing factors during the review of the Project to determine whether the Project will result in a reduction of water quality in the waters affected by the Project. The principal impacts of the Project are in the reaches of the Ottauquechee River affected by the Project and consist of flow and water level management associated with Project operations and the resulting effects on aquatic biota and wildlife and aquatic habitat. The changes in operation of the Taftsville Hydroelectric Project will not result in a discharge of additional pollutants or reduce other ambient water quality criteria. As a result, factors (i), (ii), (iii), (iv), (v), and (vi) are not at issue. Conditions B and C of this Certification, which prescribe flow and water level management regimes and monitoring requirements, are expected to maintain or improve aquatic habitat conditions and reduce the degree of hydrologic alteration associated with operation and maintenance of the facility.
178. This Certification does not authorize any activities that would result in a reduction of water quality for those parameters that exceed the Standards.
179. For those parameters for which Project waters do not exceed Standards, the Secretary must conduct a Tier 1 review. (Procedure, Section VIII(F)).
180. When conducting a Tier 1 review, the Secretary may identify existing uses and determine the conditions necessary to protect and maintain these uses. (Procedure, Section VIII(F)). In determining the existing uses to be protected and maintained, the Secretary must consider the following factors: (a) aquatic biota and wildlife that utilize or are present in the waters; (b) habitat that supports existing aquatic biota, wildlife, or plant life; (c) the use of the waters for recreation and fishing; (d) the use of the water

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for water supply, or commercial activity that depends directly on the preservation of an existing high level of water quality; and (e) evidence of the ecological significance of the use in the functioning of the ecosystem or evidence of the rarity of the use. (Procedure, Section VIII(F)(2)).

181. The Secretary considered the foregoing factors pertinent to a Tier 1 review of the Project and, based on information supplied by the Applicant and Agency staff field investigations, identified the following existing uses in the reaches of the Ottauquechee River affected by the Project: aquatic biota and wildlife; aquatic habitat; recreation and fishing; and aesthetics.
182. The Applicant is maintaining an instantaneous run-of-river mode of operation as a condition of this Certification (Condition B). Additionally, the Applicant will implement a year-round flow in the bypassed reach that is consistent with high quality aquatic habitat and will provide this flow via spillage over the dam. The conditions of this Certification were developed to reduce hydrologic alteration associated with operation and maintenance of the facility and the analysis herein demonstrates the conditions of the Certification will fully support the existing uses identified in Finding 181.
183. The Secretary finds that operation of the Project, as conditioned by this Certification, will comply with the Standards and other applicable rules. Accordingly, the Secretary finds that the Project, as conditioned, meets the requirements of the Policy and Procedure relating to the protection, maintenance, and improvement of water quality.

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IV. Decision and Certification

The Department has examined the Project application and other pertinent information deemed relevant by the Department to issue a decision on this certification application pursuant to the Department's responsibilities under Section 401 of the federal Clean Water Act and 10 V.S.A. § 1253(h)(1)-(4). After examination of these materials, the Department certifies that there is reasonable assurance that operation of the Project, in accordance with the following conditions, will not violate Standards; will not have a significant impact on use of the affected waters by aquatic biota, fish or wildlife, including their growth, reproduction, and habitat; will not impair the viability of the existing populations; will not result in a significant degradation of any use of the waters for recreation, fishing, water supply or commercial enterprises that depend directly on the existing level of water quality; and will be in compliance with Sections 301, 302, 303, 306, and 307 of the federal Clean Water Act, 33 U.S.C. Section 1341, and other appropriate requirements of state law:

- A. Compliance with Conditions.** The Applicant shall operate and maintain this Project consistent with the findings and conditions of this Certification. The Applicant shall not make any changes to the Project or its operations that would have a significant or material effect on the findings, conclusions, or conditions of this Certification without approval of the Department.

See Finding 138 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-101.

- B. Flow Management.** The Project shall be operated in instantaneous run-of-river mode. Instantaneous run-of-river mode means no utilization of impoundment storage and that outflow from the facility is equal to inflow to the impoundment on a near instantaneous basis except for short term, unavoidable deviations.

The Applicant shall provide a conservation flow of 45 cfs, or inflow if less, to the bypassed reach year-round. The conservation flow shall be provided via spillage over the dam, unless otherwise described in the flow management and monitoring plan or approved by the Department. When the Project is not operating, all flow shall be spilled at the dam.

See Findings 89- 101 and 146- 154 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-304 & § 29A-306 (b)(3)(B) & § 306 (c)(3)(B)(i).

- C. Flow Management and Monitoring Plan.** The Applicant shall develop, within 180 days of the effective date of the FERC license, a flow management and monitoring plan detailing how the Project will operate in instantaneous run-of-

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river mode and comply with the conservation flow requirements. The plan will also include a method for continuous monitoring and reporting of flow releases (e.g. conservation flow, spillage, and turbine discharge) at the Project, impoundment levels, and inflow. The plan shall include provisions for the flow data to be available on a near real-time basis to allow for records to be furnished upon request.

The plan will include procedures for reporting deviations from prescribed operating conditions to the Department. Reports shall be made within 15 days after a deviation and will include, if possible, the cause, severity, and duration of the deviation, observed or reported adverse environmental impacts from the incident, pertinent data, and measures to be taken to avoid recurrences.

The plan shall be subject to Department approval. The Department reserves the right to review and approve any material changes made to the plan.

See Finding 145- 159 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-304 & § 29A-306(b).

- D. Water Quality Study.** During the first full study season after license issuance, the Applicant shall collect additional water quality data in limited areas in the Project vicinity, within the impoundment and downstream and the tailrace, similar to the study plan implemented in 2022. This study will be developed in consultation with and shall be approved by the Department prior to implementation.

If it is found that the Project is not in compliance with the Standards, the Applicant shall develop, with approval from the Agency, a plan to come into compliance. The plan may include, but is not limited to, changes in project operations, direct oxygen pumped into the draft tube, adding aeration to the outflow, or a combination of these. The Applicant shall continue to monitor and submit reports yearly until compliance is achieved.

See Finding 139- 142 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-302(5)

- E. American Eel Passage.** Within one year of upstream American Eel passage having been installed at the next downstream hydroelectric project (Quechee Mills, FERC No. 5195), the Applicant shall initiate plan development for American Eel passage. Before developing the plan, the Applicant shall consult with the Vermont Agency of Natural Resources and the USFWS. The plan shall be reviewed and approved by the Vermont Agency of Natural Resources and the USFWS before implementation. In addition to the method of passage, the plan shall include an implementation schedule. The plan may include, but is not limited to, a trap and truck program or eel ramp installation, or other appropriate measures.

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See Finding 158 and 159 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-306(b)(3)(A).

- F. Trashracks.** Prior to the next replacement of the trashrack at the Project, the Applicant shall consult with the Department, the Vermont Fish and Wildlife Department and other applicable stakeholders, with respect to the trashrack design to determine appropriate clear spacing. The Applicant shall file the trashrack design information with the Department for approval prior to commencement of work.

See Finding 144 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-306(a)(3).

- G. Northern Long-eared Bat Protection.** The Applicant shall avoid tree trimming and removal of trees of 3- inch diameter breast height or greater in the project boundary between April 1st and October 31st to avoid any roost disruption of the Northern Long-eared Bat, except when necessary to protect public safety or respond to emergency conditions. In case of a public safety issue or emergency where tree trimming or removal are required during the seasonal protective period, the Applicant shall consult with the Department as soon as practical after conducting the trimming or removal.

See Finding 45 and 162 for a statement of necessity. 10 V.S.A. § 5403.

- H. Recreation.** The Applicant shall continue to maintain and provide, a take-out with an approximately 4-foot-wide by 10-foot-long floating dock, portage, parking area near the powerhouse including one spot that is compliant American with Disabilities Act, picnic tables, and additional related items such as interpretative signage, viewing platform and fishing bank area.

See Finding 48, 165, and 166 for a statement of necessity 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A- 303(d-f).

- I. Debris Disposal.** Debris associated with Project operations shall be disposed of in accordance with the Standards and applicable state laws and regulations.

See Findings 167 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-303(1).

- J. Maintenance and Repair Work.** The Applicant shall consult with the Department prior to conducting Project maintenance or repair work that necessitates a deviation from the conditions that assure compliance with water quality requirements (e.g., water level or flow management). Such maintenance and repair work shall be subject to review and approval by the Department, unless already approved in the flow management and monitoring

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plan required by Condition C.

See findings 165 and 166 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-304(d) and § 29A-306(b).

K. Compliance Inspection by Department. The Applicant shall allow the Department to inspect the Project area at any time to monitor compliance with certification conditions.

See findings 136- 138 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-104(a).

L. Posting of Certification. A copy of the certification shall be prominently posted within the Project powerhouse.

See findings 136- 138 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-104(a).

M. Modification of Certification. The conditions of this certification may be altered or amended by the Department to assure compliance with the Standards and to respond to any changes in classification of management objectives for the waters affected by the Project, when authorized by law, and, if necessary, after notice and opportunity for hearing.

See findings 136- 138 for a statement of necessity. 10 V.S.A. § 1258 & Vt. Code R. 12-030-025 § 29A-104(a).

Effective Date and Expiration of Certification

This Certification shall become effective on the date of issuance, and the conditions of any certification shall become conditions of the federal permit (33 U.S.C. § 1341(d)). If the federal authority denies a permit, the Certification becomes null and void. Otherwise, the Certification runs for the term of the federal license or permit.

Enforcement

Upon receipt of information that water quality standards are being violated as a consequence of the Project's construction or operation or that one or more certification conditions has not been complied with, the Secretary, after consultation with the Applicant and notification of the appropriate federal permitting agency, may, after notice and opportunity for a public hearing, modify the Certification and provide a copy of such modification to the Applicant and the federal permitting agency.

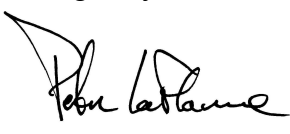
Certification conditions are subject to enforcement mechanisms available to the federal agency issuing the license and to the State of Vermont. Other mechanisms under Vermont State law may also be used to correct or prevent adverse water quality impacts from construction or operation of activities for which certification has been issued.

Appeals

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. Pursuant to 10 V.S.A. Chapter 220, an aggrieved person shall not appeal this decision unless the person submitted to the Secretary a written comment during the applicable public comment period or an oral comment at the public meeting conducted by the Secretary. Absent a determination of the Environmental judge to the contrary, an aggrieved person may only appeal issues related to the person's comments to the Secretary as prescribed by 10 V.S.A. § 8504(d)(2). The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the Applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available online at www.vermontjudiciary.org. The address for the Environmental Division is 32 Cherry Street, 2nd Floor, Suite 303; Burlington, VT 05401 (Tel. 802.951.1740).

Dated this 28th day of July, 2025

Julia S. Moore, Secretary
Vermont Agency of Natural Resources

By 

Digitally signed by Peter LaFlamme
DN: cn=Peter LaFlamme, o=VTDEC,
ou=Watershed Management Division,
email=pete.laflamme@vermont.gov, c=US
Date: 2025.07.28 08:58:25 -04'00'

Peter LaFlamme, Director
Watershed Management Division

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