LOW IMPACT HYDROPOWER INSTITUTE RECERTIFICATION APPLICATION

Downer's Mill Hydroelectric Project
(FERC No. 5195, LIHI No. 122)

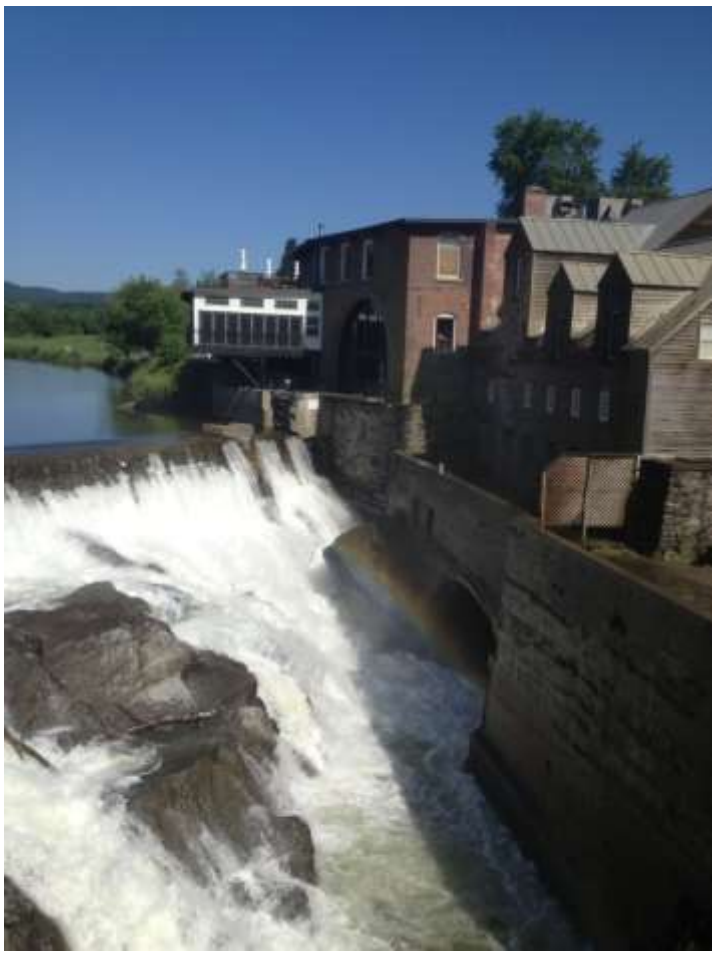

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TABLE OF CONTENTS

TABLE OF FIGURES

PART I. FACILITY DESCRIPTION

The Downer's Mill Hydroelectric Project (FERC No. 5195) (the "Project") was initially certified by the Low Impact Hydropower Institute ("LIHI") effective March 3, 2015 through March 3, 2020. The certification was extended to May 31, 2021. Hydro Management Group (Essex Hydro) on behalf of the facility owner, Simon Pearce (US), Inc. hereby submits this application to recertify the Project. **There are no material changes to project operations that should be noted during recertification.**

The Downer's Mill Hydroelectric Project is located at Quechee village in the town of Hartford, Vermont approximately seven miles upstream of the Ottauquechee River's confluence with the Connecticut River (Figure 1). The hydroelectric station was constructed at the site of the existing Emory Mill dam (also known as Downer's Mill). The dam was originally built in the early 1800s to power a grist mill. In 1983, the generator was put back into service, and the power from the site has subsequently been used to melt the glass used in production by Simon Pearce (U.S.), Inc.'s glass-blowing business, with excess power being sold to Green Mountain Power Corporation.

The concrete gravity dam is 185 feet long with an uncontrolled spillway. The crest elevation of the dam is 562 feet NGVD and is about 14 feet above the bedrock streambed at the downstream toe. The powerhouse, located in the basement of the mill building, houses a single turbine/generator with a capacity of 500 kW (Figure 2). At full pool, the impoundment extends about 0.4 miles upstream to an island and covers approximately nine acres with an average depth of about six feet. There is a very short bypassed reach, about 105 feet long. The downstream reach is about 635 feet long extending to an island in the river (Figure 3). The Project is operated as an instantaneous run-of-river facility and has an average annual production of 1.6 GWh.

Figure 1 Downer's Mill Hydroelectric Project location and nearby dams

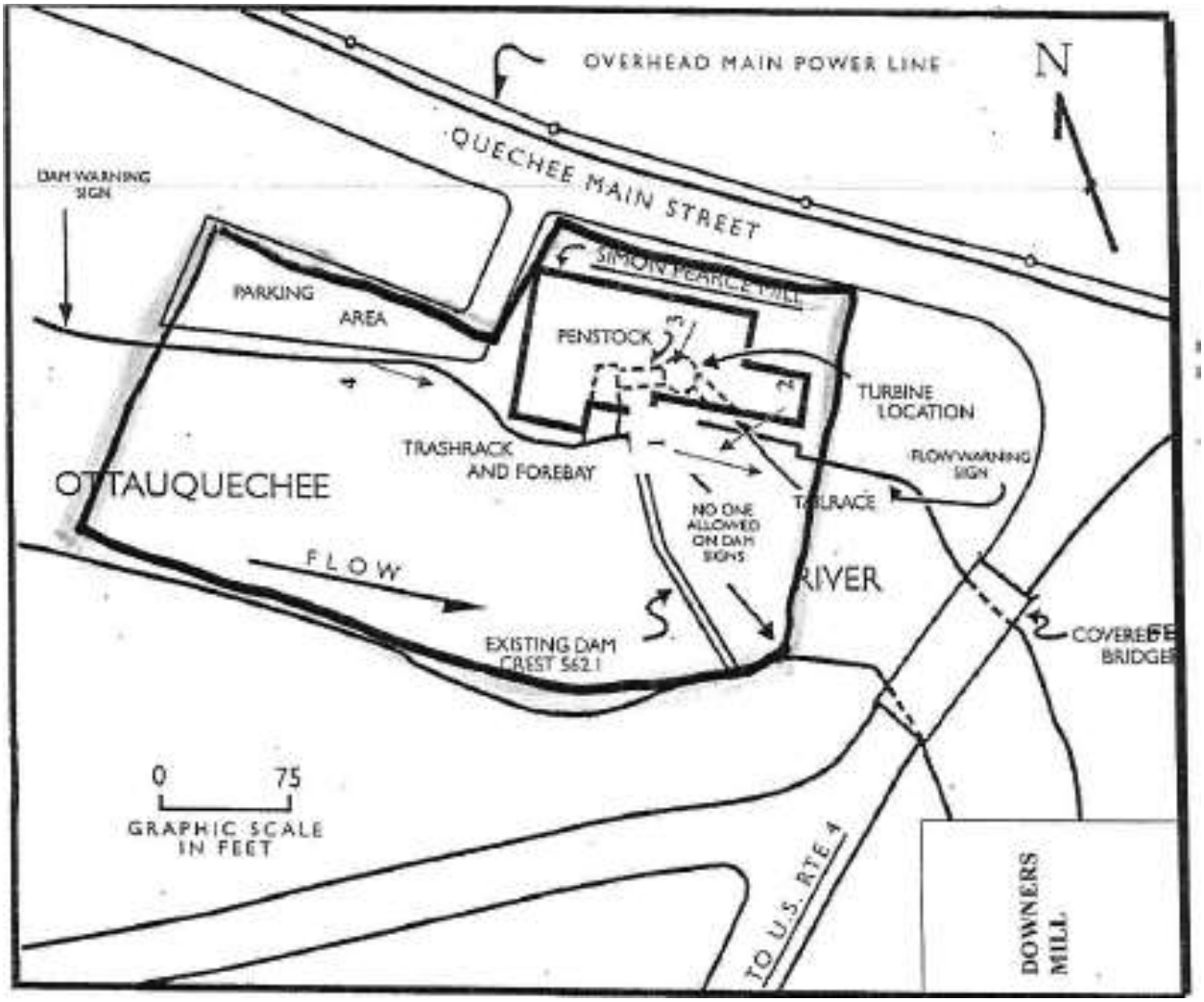

Figure 2 Project Layout

Table 1 Facility Description Information

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Downer's Mill
Reason for applying for LIHI Certification	1. To participate in state RPS program 2. and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 3. To participate in voluntary REC market (e.g., Green-e) 4. To satisfy a direct energy buyer's purchasing requirement 5. To satisfy the facility's own corporate sustainability goals 6. For the facility's corporate marketing purposes 7. Other (describe)	MA II RPS Program, 100%
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	1,600, 100%
Location	River name (USGS proper name)	Ottauquechee River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Black-Ottauquechee HUC 08: 01080106
	Nearest town(s), county(ies), and state(s) to dam	Quechee Village, Town of Hartford, Windsor County, VT
	River mile of dam above mouth	7.0
	Geographic latitude of dam	43.645925
	Geographic longitude of dam	-72.419416
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Andrew Locke, Hydro Management Group

Item	*Information Requested*	*Response (include references to further details)*
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Simon Pearce (US), Inc. John Lobb No change
	FERC licensee company name (if different from owner)	n/a
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	5195, exemption issued May 4, 1982
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Exemption < 5 MW
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	WQC issued May 11, 1982 by VANR
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories	FERC Exemption: https://lowimpacthydro.org/wp-content/uploads/2020/07/Appendix-1-2_Downers-Mills-FERC-Exmpetion-dtd-May-4-1982.pdf WQC: https://lowimpacthydro.org/wp-content/uploads/2020/07/Appendix-4-1_Downers-Mills-401-Water-Quality-Cert.-dtd-May-11-1982.pdf
Powerhouse	Date of initial operation (past or future for pre-operational applications)	1983
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	0.645 No change

Item	*Information Requested*	*Response (include references to further details)*
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	1,600 2016-2019
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Run of river No change
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	1 Vertical Kaplan turbine Max 225 cfs Min 50 cfs 500 kva generator Max generator output 400 kw Min output 50 kw
	Trashrack clear spacing (inches) for each trashrack	1.5
	Approach water velocity (ft/s) at each intake if known	Unknown
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	N/A
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	N/A
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	N/A
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	Early 1800's original timber crib dam. Concrete dam built in 1926.
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	Concrete gravity dam, 14 ft tall, 150 ft long. No flashboards.
	Spillway maximum hydraulic capacity	Unknown

Item	*Information Requested*	*Response (include references to further details)*
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	57 foot long steel penstock
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power supply
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	n/a
	Source water	n/a
	Receiving water and location of discharge	n/a
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	Maintained at 562.1 ft NGVD No change
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	Maintained at 562.1 ft NGVD No change
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	9 acres, 6 ft deep average = 54 acre-ft No change
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	None, run of river
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	None

Item	*Information Requested*	*Response (include references to further details)*
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	• Taftsville - river mile 11.3, GMP, FERC P-2490, licensed • Other non-powered dams are located farther upstream No dams have downstream passage
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	• Dewey's Mills - river mile 6.0, GMP, FERC P-5313, licensed • North Hartland – river mile 1.6, North Hartland, LLC/US Army Corps owns the dam FERC P-2816 licensed • White Current (Ottauquechee Woolen Mill) – river mile 0.3, GMP, FERC P-2787, exempt No dams have upstream passage
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	N/A
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	1.7 acres, .6 fee owned property, 1.1 flowage rights
Hydrologic Setting	Average annual flow at the dam, and period of record used	60 cfs 1985-2019

<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (include references to further details)</th></tr>
<tr><td></td><td>Average monthly flows and period of record used</td><td>1984-2020
<table><tr><td>Jan</td><td>56</td></tr><tr><td>Feb</td><td>41</td></tr><tr><td>Mar</td><td>84</td></tr><tr><td>Apr</td><td>160</td></tr><tr><td>May</td><td>84</td></tr><tr><td>Jun</td><td>49</td></tr><tr><td>Jul</td><td>34</td></tr><tr><td>Aug</td><td>24</td></tr><tr><td>Sep</td><td>21</td></tr><tr><td>Oct</td><td>52</td></tr><tr><td>Nov</td><td>63</td></tr><tr><td>Dec</td><td>62</td></tr></table>All figures in CFS
https://tinyurl.com/y56r48rn</td></tr>
<tr><td></td><td>Location and name of closest stream gaging stations above and below the facility</td><td>Upstream: USGS 01150900 OTTAUQUECHEE RIVER NEAR WEST BRIDGEWATER, VT

Downstream: USGS 01151500 OTTAUQUECHEE RIVER AT NORTH HARTLAND, VT</td></tr>
<tr><td></td><td>Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.</td><td>207 sq. miles per the water quality certificate</td></tr>
<tr><td></td><td>Other facility specific hydrologic information</td><td>n/a</td></tr>
<tr><td rowspan="4">Designated Zones of Effect</td><td>Number of zones of effect</td><td>3</td></tr>
<tr><td>Type of waterbody (river, impoundment, bypassed reach, etc.)</td><td>Zone 1: Impoundment
Zone 2: de minimis bypass reach
Zone 3: tailrace/downstream reach</td></tr>
<tr><td>Upstream and downstream locations by river miles</td><td>Zone 1: RM7.4 – RM 7.0
Zone 2: RM 7.0 – RM 6.98
Zone 3: RM 6.98 – RM 6.86</td></tr>
<tr><td>Delimiting structures or features</td><td>First upstream island, dam, and first downstream island delimit the zones</td></tr>
<tr><td colspan="3">Pre-Operational Facilities Only</td></tr>
</table>

Item	*Information Requested*	*Response (include references to further details)*
Expected operational date	Date generation is expected to begin	n/a
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	n/a
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	n/a

PART II. STANDARDS MATRICES

Zone of Effect #1 – Impoundment

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

Zone of Effect #2 – De minimis Bypass Reach

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

Zone of Effects #3 –Tailrace/Downstream Reach

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

Figure 3 Designated Zones of Effect

PART III. SUPPORTING INFORMATION

III.A Ecological Flows

Criterion	*Standard*	*Instructions*
A	1	<u>Not Applicable / De Minimis Effect:</u> • Confirm the location of the powerhouse relative to dam/diversion structures and demonstrate that there are no bypassed reaches at the facility. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones only, explain water management (e.g., fluctuations, ramping, refill rates) and how fish and wildlife habitat within the zone is evaluated and managed. ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.
A	2	<u>Agency Recommendation:</u> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to formal agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations). • Explain how flows are monitored for compliance.

Zones 1 and 3 qualify for standard A-1, Zone 2 qualifies for standard A-2.

The facility is operated as a true run-of-river facility with instantaneous inflow equal to outflow. Inflows are controlled by the discharge from the upstream Taftsville project and inflow from small tributaries. The bypass reach is very short, approximately 105 feet long. It has a high gradient and limited habitat value being composed primarily of ledge (Figure 4). The bypass

reach minimum flow is 22 cfs and was confirmed by the Vermont Agency of Natural Resources (VANR) in an October 14, 2015 letter as being "appropriately protective of fish, wildlife, and water quality" (see Appendix 1), based on the flow demonstration required by the original LIHI certification and attended by VANR and Vermont Department of Fish and Wildlife. Compliance monitoring includes visual inspection of the flow over the dam, and a review of the control system and electronic data that are the basis of the automatic flow control system. The data recorded each day includes date and time, headpond level, total output of the turbine (KW), and wicket gate position.

The control system automatically adjusts the hydro wicket gate position based on the pond level. The wicket gates regulate the flow of water through the turbine, and in turn water discharged over the dam. The pond level is monitored by a transducer, and the hydro control system ensures that the pond level does not drop below a specified depth. The Vermont Water Quality Certificate (WQC) for the Project requires that the minimum depth of the water over the dam equal 0.5" across the entire face of the dam, which ensures that more than 22 CFS (the 7Q10 flow) of water flows over the dam and that the entire surface of the dam is wet at all times. The WQC notes that flows above that level are not warranted for purposes of aquatic habitat which is so limited.

Figure 4 View of Bypass Reach

III.B Water Quality

Criterion	*Standard*	*Instructions*
B	1	Not Applicable / De Minimis Effect: • Explain the rationale for why the facility does not alter water quality characteristics below, around, and above the facility.

All zones qualify for standard B-1.

The Ottauquechee River in the Project vicinity is classified in the Vermont Water Quality Standards as Class B(2) water managed to achieve and maintain good aesthetic quality, primary recreation contact, public water supply with treatment, and for agricultural purposes.[1]

The river in the Project area is not listed as a Category 5 water (impaired and in need of a TMDL) in the Vermont 2020 303(d) Impaired Waters list[2]. It is also not listed on any of the Vermont 2020 lists included in the Water Quality Assessment Report.[3] The river downstream from the North Hartland Army Corps impoundment is listed in Part F of the Assessment Report as being altered by water fluctuation in the impoundment and altered by flow regulation downstream to the river's mouth.

The river from upstream of Downer's Mill at Woodstock VT downstream to the North Hartland, including the Project area is considered "stressed" for secondary contact recreation, aquatic biota/habitat and aesthetics due to nutrients, organic enrichment, temperature, sediment, and E. coli from golf course, road, and developed land runoff, septic systems and fertilized turf.[4]

VANR issued a Water Quality Certification as part of the exemption process in 1982. VANR's Department of Environmental Conservation (VTDEC) comment on the original LIHI application by letter dated January 10, 2014[5], stating that it did not have "any information suggesting that the project is not operating in full compliance with the conditions in [the Applicant's] water quality certification." After obtaining VTDEC approval of its sampling plan, the Applicant completed a water quality sampling program in 2013 to demonstrate compliance with the quantitative state water quality standards. Water temperature and dissolved oxygen were monitored in the impoundment and at the tailrace during a low-flow period from August 22-31, 2013, and impoundment temperature/dissolved oxygen profiles were done on the 22nd and 31st. In its comment letter, VTDEC noted that, "during the sampling period, the water quality in the impoundment and tailrace met Vermont Water Quality Standards for dissolved oxygen under current operating conditions."

[1] https://dec.vermont.gov/sites/dec/files/documents/wsmd_water_quality_standards_2016.pdf
[2] https://dec.vermont.gov/sites/dec/files/documents/mp_PriorityWatersList_PartA_303d_2020.pdf
[3] https://dec.vermont.gov/watershed/map/assessment
[4] https://dec.vermont.gov/sites/dec/files/documents/mp_TacticalBasinPlan_Basin10_BlackAndOttauquecheeRivers.pdf
[5] https://lowimpacthydro.org/wp-content/uploads/2020/07/Appendix-4-2_Comment-ltr-Eric-Davis-VT-DEC.pdf

There has been no change in Project operations that would change compliance with water quality standards.

III.C Upstream Fish Passage

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

All zones qualify for standard C-1.

There are no migratory species present since no downstream dams on the Ottauquechee River have upstream passage, thus forming barriers to passage to the Project. As noted above, the bypass reach is composed of ledge forming a steep gradient that is also a barrier to passage (see footnote 5) except possibly for American eel if any were present.

As part of the exemption proceeding, the US Fish and Wildlife Service (USFWS) and Vermont Fish and Wildlife reserved authority to prescribe fish passage at Downer's Mill, although it specified only anadromous fish species at that time. The agencies have not yet exercised its authority to date. As part of the original LIHI certification, by email dated February 5, 2015, the USFWS commented that it considered the current absence of passage measures to be "appropriately protective for the purposes of LIHI certification."[6] It should be noted that dams on the Connecticut River downstream of the confluence, including Wilder do have upstream passage, although Wilder's fish ladder has not opened, other than for relicensing studies, since 2017 according to the CRASC website.[7] Migratory species present in the Connecticut River at Wilder include very small numbers of American eel and sea lamprey that were observed in the fish ladder.[8] Two other relicensing studies did not observe eels upstream of Wilder dam.[9], [10]

III.D Downstream Fish Passage

[6] https://lowimpacthydro.org/wp-content/uploads/2020/07/DownersMillCertificationReport.pdf
[7] https://www.fws.gov/r5crc/migratory_fish_counts.html
[8] https://www.greatriverhydro-relicensing.com/download/Documents/Amended%20FLA/20201207_BF_WLDR_VERN_Amend_FLA_Composite_Exhibit_E.pdf
[9] https://www.greatriverhydro-relicensing.com/download/Documents/Study%20Reports/Study-Reports-1-33/Study-11-American-Eel-Survey/TC_S11_Eel_Survey_Report_2016_03_01.pdf
[10] https://www.greatriverhydro-relicensing.com/download/Documents/Study%20Reports/Study-Reports-1-33/Study-18-American-Eel-Upstream-Passage/TC_S18_Upstream_Eel_Report_2016_03_01.pdf

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the species populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of fish species requiring passage in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

All zones qualify for standard D-1.

According to VANR (see footnote 5), the Ottauquechee River in the Project vicinity sustains wild populations of rainbow trout, some brown trout, and numerous nongame fish species, as well as wild brook trout in tributary streams and may use the Ottauquechee River seasonally. The agency noted the presence of the ledge cascade at the bypass reach, stating "Further evaluation of this natural feature would be required before considering future fish passage conditions".

Other public information suggests that both cold and warm water species including common shiner, golden shiner, white sucker, black bullhead, rock bass, longnose dace, blacknose dace, bluntnose minnow, creek chub, fallfish, white sucker, smallmouth bass, slimy sculpin, and stocked populations of trout are also present in the river either upstream of downstream of the Project.[11] None of these species require passage to complete their life cycle. The upstream Taftsville dam does not have downstream passage, thus forming a barrier.

As part of the original LIHI certification, the LIHI reviewer received information in 2015 from VANR about downstream passage for American eel, stating "Eels cannot pass the Wilder dam unless the ladder runs and that operation was very limited during the salmon program and I don't think it runs at all now".[12] As noted above for upstream passage, the Wilder fish ladder

[11] https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15336690
[12] Appendix A-2 in https://lowimpacthydro.org/wp-content/uploads/2020/07/DownersMillCertificationReport.pdf

has not been operated since that time. Thus, it is very unlikely that eels would be present in the Ottauquechee River either below or above the Project.

III.E Watershed and Shoreline Protection

Criterion	*Standard*	*Instructions*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for protected species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

All zones qualify for standard E-1.

The impoundment extends upstream about half a mile and is contained within the riverbanks. The Project ownership, however, only extends about 300 feet upstream of the dam as shown in Figure 2. The Project is located in the developed Quechee village area as shown in Figure 3. No protected buffer zones have been created along the riverine impoundment through a settlement agreement or the exemption, and no shoreland protection plan is required.

Figure 5 Downstream Reach

Land use around the upper impoundment includes a golf course on the west side of the river and Quechee Green Park owned by the Town of Hartford on the east side. The east bank at the dam includes steep banks and rock outcrops and the downstream reach is rocky with a sand shoreline, a vegetated buffer and limited development farther away from the river (Figure 5).

Land around the lower portion of the impoundment is lightly developed with residences and some businesses at and near the mill buildings. There are no lands of significant ecological value and no critical habitats for threatened or endangered species (see Section III.F).

III.F Threatened and Endangered Species

Criterion	*Standard*	*Instructions*
F	1	Not Applicable / De Minimis Effect: • Document that there are no listed species in the facility area or affected riverine zones downstream of the facility. • If listed species are known to have existed in the facility area in the past but are not currently present, explain why the facility was not the cause of the extirpation of such species. • If the facility is making significant efforts to reintroduce an extirpated species, describe the actions that are being taken.

All zones qualify for standard F-1.

An online data check of the USFWS IPaC website[13] shows that only the federally-threatened Northern long-eared bat could be present in the Project vicinity (Appendix 2). There is no critical habitat designated for the bat. Migratory birds could also be present at certain times of the year. Comparing that list with Vermont's list of species shows that bald eagle and rusty blackbird, both state-endangered species could be present.

However, an online data check of the Vermont BioFinder site[14] shows that only one state-listed species could be present in the downstream reach (Figure 6). Based on the information (vertebrate animal that is both state endangered and federally threatened), that species appears that the species is Northern long-eared bat. No state-listed birds have been observed in the immediate Project area according to the data check result. Lands under Project ownership do not extend downstream of the dam and covered bridge and the Project does not impact potential roosting or nesting habitat for bats or birds.

[13] https://ecos.fws.gov/ipac/
[14] https://anrmaps.vermont.gov/websites/BioFinder/

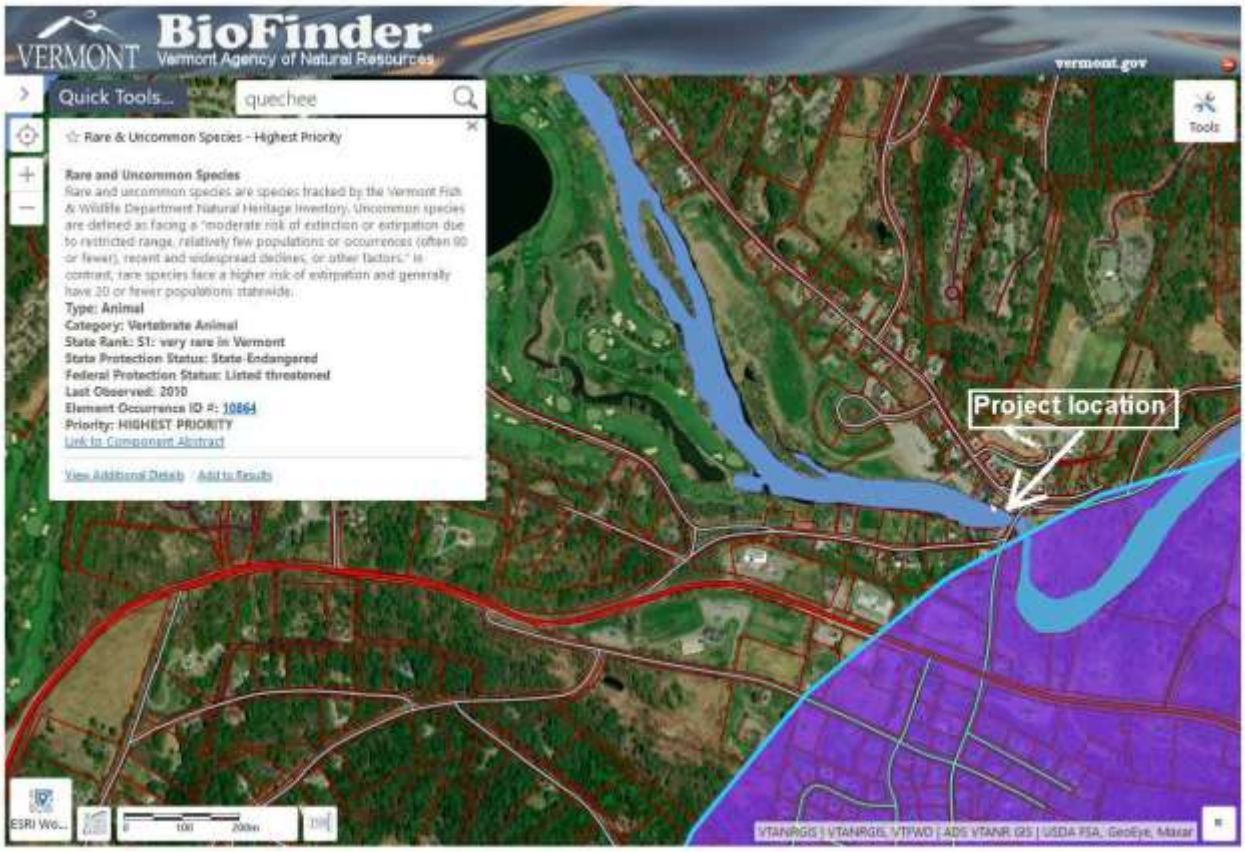

Figure 6 Vermont BioFinder Data Check Result

III.G Cultural and Historic Resources

Criterion	*Standard*	*Instructions*
G	1	<u>Not Applicable / De Minimis Effect:</u> • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

All zones qualify for standard G-1.

The mill building is a contributing building in the Quechee Historic Mill District which was listed on the National Register of Historic Places in 1996.[15] The District includes 75 buildings and 4 sites or structures in Quechee Village.

[15] https://catalog.archives.gov/id/84286053

John Downer & Co. bought the land around the mill in 1825 and built a six-story brick building overlooking the dam. But the mill failed financially and changed hands several times. In 1840, Francis K. Nichols & Co. became the first mill in the country to manufacture a fabric of reused soft rags and new wool, known as "shoddy". J.C. Parker owned the mill from 1857 to 1906 which reportedly became the largest United States producer of fine, white, soft flannel for baby clothes. The mill building underwent several structural changes over the years. High water caused the north wing to collapse in 1869. It was rebuilt in 1870, including a three-story brick addition. Harris, Emery Company enlarged the mill in 1915, replacing the wing attached to the 1870 addition with a new drying room and sales area and enlarging the weaving room. In 1926, a cement dam was built to replace the wooden crib dam. Harris, Emery closed the mill in 1951. It changed hands a few times and ended up owned by John Cone, Sr. in the 1950s. Cone considered the upper floors of the building and the eastern wing a safety hazard and had them demolished. Quechee Lakes Corporation bought the building in 1969 and added the wooden annex on the east end. In 1980, Simon Pearce bought the building, renovated the inside for a glass blowing operation, and added the hydroelectric plant in 1982.[16]

At the time of the mill's rehabilitation in the early 1980's the FERC exemption did not include any requirements related to cultural or historic resources. The rehabilitation was conducted entirely inside of the existing mill building. No additional work has been performed since the FERC exemption was issued.

III.H Recreational Resources

Criterion	*Standard*	*Instructions*
H	3	Assured Accessibility: • In lieu of existing agency recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from recreation interests for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.

All zones qualify for standard H-3.

The FERC exemption does not include requirements for recreation and there is no recreation management plan for the Project. However, a canoe portage is naturally provided via Quechee Main Street that parallels the river above and below the dam. Both the take out and put in are located outside of the project's boundary.

Access on Project lands is not limited except where safety is a concern.

[16] https://www.hartford-vt.org/DocumentCenter/View/271/HDBrochureQuechee?bidId=

PART IV. CONTACTS

Company Contacts

Project Owner:	
Name and Title	Jay Benson, CEO
Company	Simon Pearce (US), Inc.
Phone	(802) 230-2106
Email Address	jay.benson@simonpearce.com
Mailing Address	109 Park Rd, Windsor VT 05089
Project Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	Andrew Locke, President
Company	Hydro Management Group
Phone	(617) 367-0032
Email Address	alocke@essexhydro.com
Mailing Address	c/o Essex Hydro Associates, 55 Union Street, Boston, MA 02108
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	John Lobb, Director of Facilities
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Email Address	john.lobb@simonpearce.com
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Party responsible for accounts payable:	
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Company	Hydro Management Group, Essex Power Services, Inc.
Phone	(617) 367-0032
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Mailing Address	c/o Essex Hydro Associates, 55 Union Street, Boston, MA 02108

Agency Contacts

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Department of Environmental Conservation	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☒ T & E Species ☐ Cultural/Historic ☒ Recreation
Name and Title	Eric Davis, River Ecologist	
Phone	802-490-6180	
Email address	Eric.Davis@vermont.gov	
Mailing Address	Watershed Management Division, Main Building - 2nd Floor, One National Life Drive, Montpelier, VT 05620	
Agency Contact		***Area of Responsibility***
Agency Name	Vermont Department of Environmental Conservation	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☒ T & E Species ☐ Cultural/Historic ☒ Recreation
Name and Title	Jeff Crocker, Streamflow Protection Coordinator	
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Mailing Address	Watershed Management Division, Main Building - 2nd Floor, One National Life Drive, Montpelier, VT 05620	
Agency Contact		***Area of Responsibility***
Agency Name	Vermont Department of Environmental Conservation	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☒ T & E Species ☐ Cultural/Historic ☒ Recreation
Name and Title	Betsy Simard, River Ecologist	
Phone	802-585-8189	
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Mailing Address	Watershed Management Division, Main Building - 2nd Floor, One National Life Drive, Montpelier, VT 05620	

Agency Contact		***Area of Responsibility***
Agency Name	Vermont Division for Historic Preservation	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T & E Species ☒ Cultural/Historic ☐ Recreation
Name and Title	Elizabeth Peebles, Historic Resources Specialist	
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Agency Name	Vermont Division for Historic Preservation	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T & E Species ☒ Cultural/Historic ☐ Recreation
Name and Title	Scott Dillon, HP Senior Review Coordinator	
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Agency Contact		***Area of Responsibility***
Agency Name	U.S. Fish and Wildlife	☐ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☐ T & E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Kenneth Hogan	
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Email address	Kenneth_Hogan@fws.gov	
Mailing Address	New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301	
Agency Contact		***Area of Responsibility***
Agency Name	U.S. Fish and Wildlife	☐ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☒ T & E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Susi von Oettingen	
Phone	603-227-6418	
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Mailing Address	New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301	

PART V. SWORN STATEMENT

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of Simon Pearce (US), Inc. *, the Undersigned attests that the material presented in the application is true and complete.*

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

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

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

FOR PRE-OPERATIONAL CERTIFICATIONS:

The Undersigned acknowledges that LIHI may suspend or revoke the LIHI Certification should the impacts of the facility, once operational, fail to comply with the LIHI program requirements.

Company Name: Hydro Management Group

Authorized Representative:

Name: Andrew Locke

Title: President

Authorized Signature: _____

Date: 1/28/2021

List of Appendices

- Appendix 1: October 14, 2015 VANR letter confirming flow demonstration results
- Appendix 2: USFWS Threatened and Endangered Species Report (IPaC), January 11, 2021