

LOW IMPACT HYDROPOWER INSTITUTE RECERTIFICATION APPLICATION

Penacook Lower Falls Hydroelectric Project

FERC license number 3342, LIHI number 64



Prepared by:
Briar Hydro Associates LLC
55 Union Street, 4th floor
Boston, MA 02108

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Table of Contents

Part 1. Facility description.....	4
Figure 1 Project location map.....	5
Figure 2 License exhibit G project boundary map.....	6
Figure 3 Zones of effect.....	7
Table 1 Facility description information.....	8
Part 2. Standards matrices.....	14
Part 3. Supporting information.....	15
Ecological flow regimes.....	15
Water quality.....	16
Upstream fish passage.....	18
Downstream fish passage.....	19
Watershed and shoreline protection.....	21
Threatened and endangered species.....	22
Table 2. State listed species in the vicinity of the project area.....	23
Cultural and historical resources.....	25
Recreational resources.....	26
Figure 4. Photo of recreational boat access.....	27
Figure 5. Location of recreational boat access.....	28
Part 4. Contacts.....	29
Part 5. Sworn statement.....	31

List of Appendices

Appendix 1. FERC License issued November 17th, 1982

Appendix 2. FERC order transferring license to Briar Hydro Associates

Appendix 3. NH Water Resources Board 1983 order

Appendix 4. USFWS letter regarding minimum flows

Appendix 5. 2017 NHDES letter regarding water quality

Appendix 6. 1986 FERC license amendment regarding fish passage requirements

Appendix 7. NHHNB 2017 threatened and endangered species report

Appendix 8. 2021 USFWS IPaC report

Appendix 9. 1981 historical resources determination

Appendix 10. 2020 NHDHR historical resources report

PART I. FACILITY DESCRIPTION

The Penacook Lower Falls hydroelectric project (“PLF” or “the Project”) was initially certified by the Low Impact Hydropower Institute (“LIHI”) in 2010 and then recertified in 2015 for another five years. A one-year certification extension to June 30th, 2021 was granted in 2020 due to the COVID-19 pandemic. Briar Hydro Associates, LLC (“Briar or BHA”) submits this application to recertify the Project. The only significant operation change since 2015 is nightly shut-down during a fall period based on a rainfall trigger to facilitate downstream passage of adult American eels.

On November 17, 1982 the Federal Energy Regulatory Commission (“FERC”) issued a license to New Hampshire Hydro Associates (“NHHA”) authorizing the construction, operation and maintenance of the Penacook Lower Falls hydroelectric Project (FERC no. 3342, see Appendix 1) (“Project” or “PLF”). The project works were to consist of the Penacook Lower Falls dam, a reservoir with an 8.4-acre surface area with a maximum surface elevation of 278 feet MSL and a concrete powerhouse containing a single generating unit with an installed capacity of 4,600 KW. The issuance of the November 17, 1982 license, in effect, caused NHHA to relinquish an exemption for the project that previously had been granted by the FERC. That exemption request had been based upon a project design that did not prove to be financially feasible. All effective agency comments and approvals were made in connection with the NHHA license application.

Construction of the PLF project was completed in 1983 when first power was generated. The project has operated successfully since then. On June 14, 2002 the FERC authorized the transfer of the PLF license to the current owner, Briar Hydro Associates (see Appendix 2).

The Project is located on the Contoocook River partially in the village of Penacook and partially in the city of Concord and Town of Boscawen, New Hampshire. The Village of Penacook is made up of a small portion of the Town of Boscawen and located at the northern end of the city of Concord. Industrial, residential and undeveloped lands are all found in the project area. Some of the undeveloped land primarily on the south side of the river, close as it is to intensive industrial and commercial use, provides some wildlife habitat. Undeveloped lands include a number of wooded areas some of which are seasonally flooded. The remainder of the area consists of low-density residential and small industrial development. The project area, as outlined in the attached Project Boundary Map (Figure 2), is located in the Merrimack River Basin approximately 1000 feet above the confluence of the Contoocook and the Merrimack Rivers. The approximate latitude and longitude of the project area are 43°17'8.77"N and 71°35'42.69"W.

PLF has a peak generation capacity of 4.6 Megawatts (MW). A concrete powerhouse containing a single, double-regulated Kaplan horizontal tube-type, 3-meter turbine encased in concrete is constructed to bedrock on the same alignment as the centerline of the river profile. The reservoir has a normal maximum water surface area is 8.4 acres at 272.0 feet MSL and a gross storage capacity is 54 acre-feet.

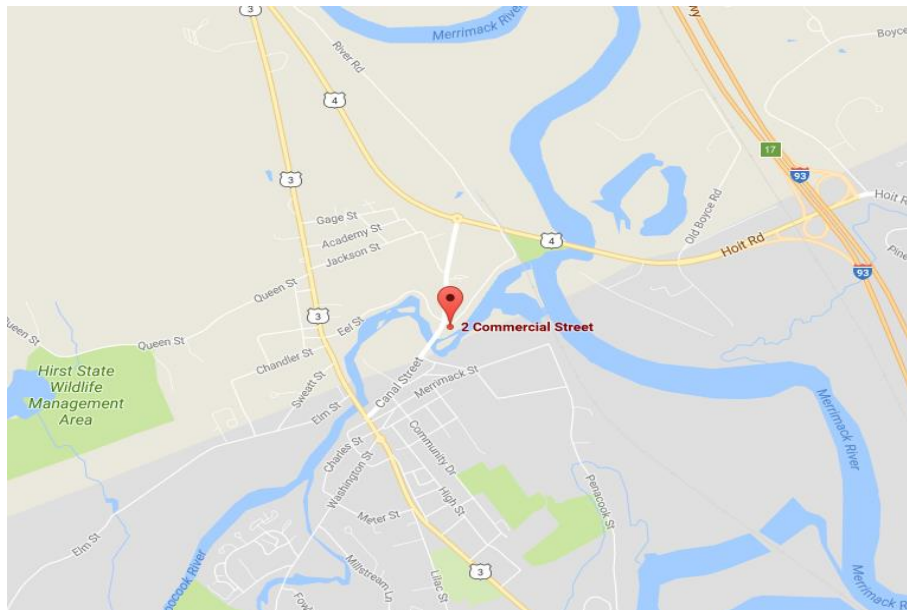
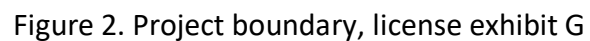


Figure 1. Location map of the Penacook Lower Falls project.



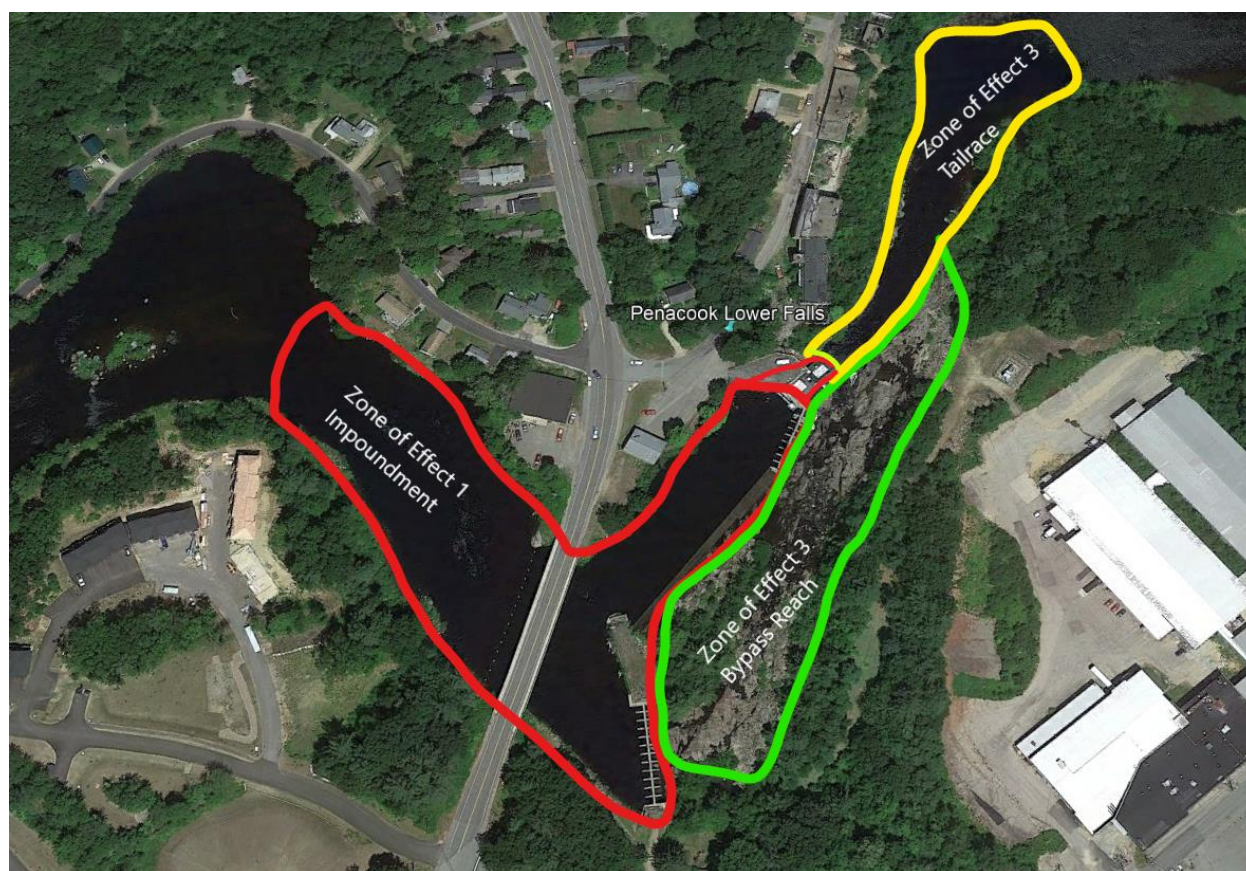


Figure 3. Designated zones of effect

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)	Penacook Lower Falls Hydroelectric Project
Reason for applying for LIHI Certification	<ol style="list-style-type: none"> 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	Average annual generation is 20,092 MWh, 100%
Location	River name (USGS proper name)	Contoocook 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	Contoocook River HUC 08: 01070003
	Nearest town(s), <u>county(ies)</u> , and state(s) to dam	Village of Penacook, Merrimack, NH
	River mile of dam above mouth	0.3
	Geographic latitude of dam	43°17'8.77"N
	Geographic longitude of dam	71°35'42.69"W
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Andrew Locke or Madeleine Mineau, Essex Power Services, Inc.

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.	Briar Hydro Associates, LLC Andrew Locke Madeleine Mineau
	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	FERC Project No. P-3342 Issued 11/17 1982 Expires 11/30 2024
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	New Hampshire Water Resources Board Order 26.07HB issued August 16 th , 1983 See Appendix 3
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories	FERC License: https://elibrary.ferc.gov/eLibrary/filelist?document_id=330228&optimized=false
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	4.6 MW – No change since last certification
	Average annual generation (MWh) and period of record used For recertifications: Indicate if average annual generation has changed since last certification	20,092 MWh (1988-2020)

Item	Information Requested	Response (include references to further details)
	<p><u>Mode of operation</u> (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.)</p> <p>For recertifications: Indicate if mode of operation has changed since last certification</p>	Run-of-river
	<p>Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit</p>	<p>One horizontal 3 meter Kaplan turbine, Rated 4.6 MW.</p> <p>Max 2,000 CFS Min 180 CFS hydraulic capacity</p> <p>3-phase, 4160 volts, 60 hertz Generator</p> <p>Max output 4.6 MW</p> <p>Min Output 150 kWh</p>
	<p>Trashrack clear spacing (inches) for each trashrack</p>	3 and 5/8 inches
	<p>Approach water velocity (ft/s) at each intake if known</p>	Unknown being studied now as part of relicensing studies
	<p>Dates and types of major equipment upgrades</p> <p>For recertifications: Indicate only those since last certification</p>	None
	<p>Dates, purpose, and type of any recent operational changes</p> <p>For recertifications: Indicate only those since last certification</p>	Starting in 2018, during fall months generation is shut down at night according to rainfall trigger to allow for downstream American eel passage.
	<p>Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments</p>	N/A
Dam or Diversion	<p>Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications</p>	There was an existing dam at this location in 1981 the date of the construction of this structure is unknown. The dam was significantly upgraded and modified to construct the hydropower project in 1982-1983.
	<p>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</p>	A concrete diversion spillway with three 9.5 foot by 10.0 foot high timber gates and seven timber stoplog gates, a concrete gravity auxiliary spillway, 316 feet long and a main concrete spillway, gated, and 106 feet long

Item	Information Requested	Response (include references to further details)
	Spillway maximum hydraulic capacity	Unknown
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power generation
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 278 feet above MSL
	Normal operating elevations and normal fluctuation range For recertifications: Indicate if these values have changed since last certification	Maintained at 278 feet above MSL No change
	Gross storage volume and surface area at full pool For recertifications: Indicate if these values have changed since last certification	Volume: 54 Acre-Feet Surface Area: 8.4 acres 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.	Maintain 338 CFS continuous minimum flow or the inflow of the reservoir, whichever is less

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.	<ul style="list-style-type: none"> • Penacook Upper Falls P-6689 (river mile 1) and Rolfe Canal P-3240 (river mile 2.1) also owned by Briar Hydro Associates, Further upstream is Hopkinton Hydro P-5735 owned by Contoocook Hydro LLC at river mile 17. Hoague-Sprague P-4337, Hopkinton flood control dam owned by the US Army Corp of Engineers, Hosiery Mill P-6116, Steeles Pond P-3265, Monadnock Paper Mills P-6597, Noone Mills dam P-4318, and Cheshire dam P-9509. • Each upstream project up to and including Hosiery Mill have downstream fish passage. There is no downstream fish passage at Steeles Pond and all hydro projects upstream of there.
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	<p>None on the Contoocook River. On the Merrimack River there is the Merrimack River Project (comprised of Garvins Falls, Hooksett and Amoskeag P-1893) and Lowell (P-2790), and Lawrence (P-2800). The Merrimack River Project, Lowell, and Lawrence are all owned by Central Rivers Power.</p> <p>Lawrence, Lowell, and Amoskeag have upstream fish passage. Hooksett and Garvins Falls currently do not have upstream fish passage.</p>
	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.	We estimate approximately 16.4 acres of water and 4.3 acres of land are located within the project boundary.

Item	Information Requested	Response (include references to further details)	
Hydrologic Setting	Average annual flow at the dam, and period of record used	1,255 cfs based on now discontinued USGS gaging station (01088000) with period of record 1928-1977	
	Average monthly flows and period of record used	January	1,050
		February	1,060
		March	2,170
		April	3,890
		May	1,920
		June	982
		July	475
		August	334
		September	465
		October	501
		November	1,000
December		1,200	
	Based on 1928 - 1977		
Location and name of closest stream gaging stations above and below the facility	Nearest upstream gaging station 01085500 is located below Hopkinton dam on the Contoocook River. There are no gaging stations on the Contoocook River downstream of the project. The nearest downstream gaging station on the Merrimack River is located at Goffs Falls below Manchester NH and is station number 01092000.		
Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	766 square miles		
	Other facility specific hydrologic information		
Designated Zones of Effect	Number of zones of effect	3	
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1 – Impoundment Zone 2 –Bypass Zone 3 – Tailrace	
	Upstream and downstream locations by river miles	Zone 1: RM 0.2 – RM 0.3 Zone 2: RM 0.3 – RM 0.4 Zone 3: RM 0.4 – RM 0.7	

Item	Information Requested	Response (include references to further details)
	Delimiting structures or features	Impoundment, dam/powerhouse, tailrace
Pre-Operational Facilities Only		
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 Effects #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 Effects #2 –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

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			

PART III. SUPPORTING INFORMATION

III.A.1 Ecological Flows

Zone of Effects #1 – Impoundment

A	2	<p><u>Agency Recommendation (see Appendix A for definitions):</u></p> <ul style="list-style-type: none"> 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
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		<p>part of a Settlement Agreement.</p> <ul style="list-style-type: none"> • Explain how the recommendation relates to 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).
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The Project is operated as a run of river facility. Reservoir level is maintained by means of a pond level control system. River flow is passed through the turbine or through the various spillway gates. The project is required to maintain a minimum flow of 338 cfs or project inflow, whichever is less. The minimum flow amount was recommended by the U.S. Department of the Interior to protect resident and anadromous fishes.

Based on discharge records at the now discontinued USGS gaging station that was located near the project, the 7Q10 is 94 cfs and the minimum flow significantly exceeds this 7Q10. In consultation with agency staff, an in-stream flow study is being conducted by a consultant this year as part of relicensing studies. The information generated by this study will help inform and determine future license requirements to maintain ecological flows.

Supporting documentation: see license in appendix 1 and USFWS letter in appendix 4

Zone 2 Bypass

See Supporting Information in Zone of Effects #1 in Ecological Flows section above.

Zone 3 Tailrace

See Supporting Information in Zone of Effects #1 in Ecological Flows section above.

III.B.1 Water Quality

Zone of Effects #1 - Impoundment

B	3	<p><u>Site-Specific Monitoring Studies:</u></p> <ul style="list-style-type: none"> • Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required. • Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.
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Supporting Information:

See Appendix 5, 2017 NH DES Water Quality Meeting Criteria Letter which indicates that sampling conducted in 2015 and 2016 confirmed that project waters meet state water quality standards.

The impoundment of the Penacook Lower Falls project in Boscawen (Assessment Unit NHIMP700030507-07) is listed in the NHDES list of priority waterways pursuant to section 303(b) of the Clean Water Act. This assessment unit represents 8.5 acres of the Contoocook River. This assessment unit is listed in the final 2012 report¹ as well as the draft 2016 report. The impoundment is listed under threatened or impaired waterways that require a Total Maximum Daily Load study ("TMDL") and is listed as a category 5 impairment for ph. The source of the ph impairment is unknown; however, this type of impairment is not attributable to operation of the dam and is likely caused by environmental pollutants outside of the control of BRHA, such as acid rain.

Data shown below was collected by the NH DES Volunteer River Assessment Program (VRAP)

02-CTC, Contoocook River, East Street Bridge, Penacook, NHDES Trend Station

Date	Time of Sample	DO (mg/L)	DO (% sat.)	pH	Turbidity (NTUs)	Specific Conductance (µS/cm)	Water Temp. (°C)	<i>E. coli</i> (CTS/100mL)	<i>E.coli</i> Geometric Mean	Chloride (mg/L)
Standard	NA	>5.0	>75% Daily Average	6.5-8.0	<10 NTU above background	835 µS/cm ^A	NA	<406	<126	230 ^B
06/21/2019	09:10	8.74	95.6	6.79	0.69	86.6	19.7	97		16
07/19/2019	09:30	8.20	98.0	6.83	0.66	108.3	24.3	<10		19
08/16/2019	09:00	8.14	95.3	6.35	0.46	118.0	23.2	52	29	21
10/15/2019	12:00	11.11	105.3	6.92	0.52	120.6	12.8			21

Date	Time of Sample	Total Phosphorus (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrite (NO2) + Nitrate (NO3) (mg/L)	Total Nitrogen (mg/L)
Standard	NA	Narrative	Narrative	Narrative	Narrative
06/21/2019	09:10	0.020	ND	0.11	0.24 ^C
07/19/2019	09:30	0.022	ND	0.11	0.24 ^C
08/16/2019	09:00	0.015	0.34	0.07	0.37
10/15/2019	12:00	0.063	ND	0.07	0.20 ^C

NH DES has approved a water quality sampling plan as part of the relicensing studies and sampling is being conducted this year.

Zone 2 Bypass

See Supporting Information in Zone of Effects #1 in Water Quality section above.

Zone 3 Tailrace

See Supporting Information in Zone of Effects #1 in Water Quality section above.

Supporting Information:

See Supporting Information in Zone of Effects #1 in Water Quality Section above.

III.C.1 Upstream Fish Passage

Zone of Effects #1 - Impoundment

C	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.• 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 or was not the cause of this.
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Supporting Information:

N/A – No facility barrier exists above the project’s dam to further upstream movement.

Zone of effect #2 Bypass: See Supporting Information in Zone of Effects #2 – Tail Race below.

Zone of Effects #3 – Tail Race

C	2	<p><u>Agency Recommendation:</u></p> <p>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 stringent).</p> <p>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.</p> <p>Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.</p>
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Supporting Information:

The FERC license provided for the construction of fish passage facilities at the Project on a schedule consistent with the 1986 agreement between Public Service of New Hampshire (PSNH) and the state and federal fishery agencies regarding the construction of fish passage facilities at the mainstream dams on the Merrimack River. Article 32 of the Project's FERC license required the construction of upstream fish passage at PLF within 3 years after the completion of upstream fish passage at Sewall's Falls Dam (P-3040). After a dam breach in 1984 the Sewall's Falls hydroelectric project was never developed therefore Garvin's Falls (P-1893) became the nearest downstream project to PLF on the Merrimack River.

The Merrimack fish restoration program did not achieve its original goals. Consequently, an agreement was reached among various state and federal agencies that delayed the installation of upstream fish passage at Garvins Falls until 15,000 American Shad were observed at the Hooksett dam in Hooksett, NH. On October 16, 1986 the FERC issued an order amending Article 32 of the PLF license (see appendix 6). The license, as amended, now requires PLF to file functional design drawings with the Commission within 2 years after the passage of 15,000 adult American Shad. As of the date of this application, upstream fish passage has not been developed at Garvin's Falls and the 15,000 American Shad threshold has not yet been met therefore PLF has not yet been required to design or build upstream fish passage and remains in full compliance with the requirements of its license.

III.D.1 Downstream Fish Passage

ZoE #1 - Impoundment

D	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none">• 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 method and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.
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Supporting Information:

Downstream fish passage at PLF is provided by a 40 cfs downstream flow through a pipe located in a gated concrete spillway. In accordance with USFWS requirements, this bypass flow is maintained from May 1st through June 30th each year.

Zone of Effects #2 – Bypass Reach

D	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • 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). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • 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 or was not the cause of this.
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Supporting Information:

There is no facility barrier to further downstream movement below the dam and powerhouse.

Zone of Effects #2 – Tailrace

D	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • 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). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • 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 or was not the cause of this.
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Supporting Information:

There is no facility barrier to further downstream movement below the dam and powerhouse.

III.E.1 Watershed and Shoreline Protection

Zone of Effects #1 – Impoundment

E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• 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 project boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
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Supporting Information:

The watershed of the Contoocook River upon which the Penacock Upper Falls Project is located is primarily forested. The Contoocook River contains numerous other small tributaries and many natural lakes. Elevations in the watershed range from 3,165 ft MSL at the top of Mt. Monadnock to 243 ft. MSL at the confluence with the Merrimack. The Contoocook drops about 130 feet in its final 20 miles (6.5 ft/mile), thus explaining the location of the village of Penacock and the development of numerous water-powered mills over the past two centuries.

PLF is located in a developed area near the center of the Village of Penacock and just 0.6 miles downstream of Penacock Upper Falls hydroelectric project. The impounded area between the PLF dam and the upstream dam is crossed by the Canal Street bridge that crosses the Contoocook river and includes a mix of residential and commercial development. Most of the riverbanks have some vegetation, though the buffer is narrow in some places.

Given the very small impoundment area of the Project and prior commercial and industrial development in and around the Project there is little need nor opportunity for Project watershed protection.

No Shoreline Management Plan is in effect, nor are the any protection requirements for the facility.

Zone of Effects #2 –Bypass Reach

E	1	<u>Not Applicable / De Minimis Effect:</u>
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		<ul style="list-style-type: none"> • 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 project boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Watershed and Shoreline Protection above.

Zone of Effects #3 –Tailrace

E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • 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 project boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Watershed and Shoreline Protection above.

III.F.1 Threatened and Endangered Species

Zone of Effects #1 –Impoundment

F	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • 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.
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Supporting Information:

III.F.1 Threatened and Endangered Species

Zone of Effects #1 –Impoundment

F	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • Document that there are no listed species in the facility area or
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		<p>affected riverine zones downstream of the facility.</p> <ul style="list-style-type: none"> • 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.
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Supporting Information:

The last New Hampshire Natural Heritage Bureau Report (NHNHB) dated May 30th, 2017 indicates there are no federally listed threatened or endangered species in the project area although there known occurrences of State Endangered, Threatened, or Species of Concern within a mile radius of the project. See Table 2 below for a description of those species and Appendix 7 for a copy of the report from the NHNHB. An updated data check has been requested from the NHHB and will be provided in supplement of this application once available.

Table 2 – State Listed Species Occurring in Penacook Lower Falls Project Vicinity

Scientific Name	Common Name	Element Occurrence Location	New Hampshire Status	Federal Status
Invertebrate Species:				
<i>Alasmidonta varicosa</i>	Brook Floater	Contoocook River near Concord	Endangered	N/A
<i>Stylurus amnicola</i>	Riverine Clubtail	Merrimack River, Route 4 Bridge; Managed by Hannah Dustin Historic Site	Special Concern	N/A
Plant Species:				
<i>Potamogeton nodosus</i>	Long-leaved pondweed	Contoocook River; Managed by Contoocook Island Park	Threatened	N/A
<i>Sagittaria rigida</i>	Sessile-fruited arrowhead	Concord, within 1.5 miles of the project area	Endangered	N/A
Vertebrate Species:				
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Merrimack River at Concord	Threatened	N/A
<i>Bufo fowleri</i>	Fowler's Toad	Hannah Dustin Historic Site	Special Concern	N/A

<i>Rana pipiens</i>	Northern Leopard Frog	West of Boyce & Hoyt Brook	Special Concern	N/A
<i>Clemmys guttata</i>	Spotted Turtle	West Penacook, Town of Boscawen	Threatened	N/A
<i>Pooecetes gramineus</i>	Vesper Sparrow	Merrimack River Fields	Special Concern	N/A
<i>Glyptemys insculpta</i>	Wood Turtle	Contoocook River, Penacook	Special Concern	N/A

An online inquiry in June 2021 of the US Fish and Wildlife Service IPaC site (<https://ecos.fws.gov/ipac/>) indicated that the project is within the range of the federally threatened Northern long eared bat (*Myotis septentrionalis*) but there are no critical habitats in the project area. See Appendix 8 for a copy of the IPaC report.

Zone of Effects #2 –Bypass Reach

F	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> 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.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Threatened and Endangered Species above.

Zone of Effects #2 – Tailrace

F	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> 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
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		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.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Threatened and Endangered Species above.

III.G.1 Cultural and Historic Resources

Zone of Effects #1 – Impoundment

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. • Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.
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Supporting Information:

As was determined by the Project’s exemption from licensing granted in September 1981, there are no significant historic and/or archeological sites in the Penacook Lower Falls area. Consultation with the New Hampshire Department of Resources and Economic Development in 1981 confirmed that no sites of historic and/or archeological significance are impacted by the licensed Penacook Lower Falls Project (Exhibit 9).

BHA submitted a Request for Project Review to the New Hampshire Division of Historical Resources (“NHDHR”) and provided a boundary map for the Penacook Lower Falls Project boundary. On October 29th, 2020 the NHDHR confirmed that there are no historic properties affected by the project (Exhibit 10).

About one quarter of a mile downstream from the project site is a one acre island at the confluence of the Contoocook and Merrimack Rivers which is the location of the Hannah Dustin Monument. This statue was erected in 1874 and is the first publicly-funded statue in New Hampshire. It commemorates the escape of Hannah Duston, who was captured in 1697 in Haverhill, Massachusetts during the French and Indian War. The site is potentially eligible for the National Register of Historic Places. A short walk from the parking area brings visitors to a picnic spot on the shore of the river. Project operations do not cause any adverse impacts upon this historic site.

Zone of Effects #2 –Bypass Reach

G	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.• Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Cultural and Historic Resources above.

Zone of Effects #3 –Tailrace

G	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.• Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Cultural and Historic Resources above.

III.H.1 Recreational Resources

Zone of Effects #1 – Impoundment

H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.
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Supporting Information:

Prior to licensing, there were no developed recreational facilities within the project vicinity. As part of the FERC licensing process, the USFWS recommended that access for

anglers across project lands be provided, including a boat-launching ramp below the dam and a small parking area. The Project has constructed and currently maintains a parking area and boat launch facility in a cove on the southern shore of the Contoocook River approximately 700 feet downstream of the powerhouse free of charge to visitors.

The boat launch area provides access to the Merrimack River and is widely used by local fishermen, daytime boaters and by local kayak clubs. Moderate levels of angling have been observed in the project's impoundment and on the southern bank of the tailrace during the years of project operation. Access is gained to the southern bank of the tailrace immediately downstream of the powerhouse or from property surrounding the boat launch ramp. An abandoned mill prevents access on the northern bank of the tailrace area. The southern riverbank adjacent to the confluence of the Contoocook and Merrimack rivers consists of woodlands. Development of this area is limited by land owned by BRHA and existing utility easements.



Figure 4. Photo of recreational boating access



Figure 5. Location of recreational boating access

Zone of Effects #2 –Bypass Reach

H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Recreational Resources above.

Zone of Effects #3 –Tailrace

H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. Document that the facility is in compliance with all such recommendations and plans.
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Supporting Information:

See Supporting Information in Zone of Effects #1 in Recreational Resources above.

PART IV. CONTACTS

Company Contacts

Project Owner: Briar Hydro Associates, LP	
Name and Title	Andrew Locke, President
Company	Essex Hydro Associates, L.L.C.
Phone	(617) 367-0032
Email Address	alocke@essexhydro.com
Mailing Address	55 Union Street, Boston, MA 02108
Project Operator (if different from Owner):	
Name and Title	Robert Thornton, Operations Manager
Company	Essex Power Services, Inc.
Phone	617-367-0032
Email Address	rthornton@essexhydro.com
Mailing Address	c/o Essex Hydro Associates, 55 Union St, 4 th Floor Boston, MA 02108
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Madeleine Mineau
Company	Essex Power Services, Inc.
Phone	(617) 367-0032
Email Address	mmineau@essexhydro.com
Mailing Address	c/o Essex Hydro Associates, 55 Union Street, Boston, MA 02108
Party responsible for accounts payable:	

Name and Title	Maureen Donnelly
Company	Essex Power Services, Inc.
Phone	(617) 367-0032
Email Address	mdonnelly@essexhydro.com
Mailing Address	c/o Essex Hydro Associates, 55 Union Street, Boston, MA 02108

Agency Contacts

Agency Contact (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/>):	
Agency Name	US Fish and Wildlife Service
Name and Title	Melissa Grader, Biologist
Phone	413-548-8002, ext 8124
Email address	melissa_grader@fws.gov
Mailing Address	New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301

Agency Contact (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input checked="" type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/>):	
Agency Name	New Hampshire Department of Environmental Services, Water Division
Name and Title	Greg Comstock, Supervisor, Water Quality Planning Section
Phone	603-271-2983
Email address	Gregg.Comstock@des.nh.gov
Mailing Address	6 Hazen Drive P.O. Box 95

Agency Contact (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input checked="" type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/>):	
Agency Name	New Hampshire Natural Heritage Bureau
Name and Title	Amy Lamb
Phone	(603) 271-2214
Email address	Amy.lamb@des.nh.gov
Mailing Address	172 Pembroke Rd. Concord, NH 03301

Agency Contact (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input checked="" type="checkbox"/>):	
Agency Name	National Parks Service, Rivers and Special Studies Branch
Name and Title	Kevin Mendik

Phone	(617) 223-5299
Email address	Kevin_mendik@nps.gov
Mailing Address	15 State Street, Boston, MA 02109

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources <u>X</u> , Recreation __):	
Agency Name	New Hampshire Division of Historical Resources
Name and Title	Nadine Miller Preservation Project Reviewer
Phone	(603) 271-6628
Email address	Nadine.Miller@dcr.nh.gov
Mailing Address	19 Pillsbury Street - 2nd floor Concord, NH 03301-3570

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources <u>X</u> , Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	National Marine Fisheries Service (NOAA)
Name and Title	Susan Tuxbury, Fisheries Biologist
Phone	978-281-9176
Email address	Susan.tuxbury@noaa.gov
Mailing Address	55 Great Republic Drive

Agency Contact (Check area of responsibility: Flows <u>X</u> , Water Quality __, Fish/Wildlife Resources <u>X</u> , Watersheds <u>X</u> , T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	NH Fish and Game Department
Name and Title	Carol Henderson
Phone	(603) 271-3511
Email address	Carol.henderson@wildlfe.nh.gov
Mailing Address	11 Hazen Drive, 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 Briar Hydro Associates, LLC 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.

Company Name: Briar Hydro Associates , LLC

Authorized Representative:

Name: Andrew Locke

Title: President, Briar Hydro Associates, Inc.

Authorized Signature: _____

Date: June 30th, 2021

A handwritten signature in black ink, appearing to read "Andrew Locke", is written over a horizontal line. The signature is fluid and cursive.

mmg

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

New Hampshire Hydro Associates)

Project No. 3342-002

ORDER ISSUING LICENSE (MAJOR)
SUPERCEDING EXEMPTION ORDER OF SEPTEMBER 10, 1981
NOVEMBER 17, 1982

New Hampshire Hydro Associates (NHHA or Applicant) has filed an application for a license under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Penacook Lower Falls Project No. 3342. 1/ By filing the license application, NHHA has implicitly manifested its intent to relinquish its exemption from licensing obtained by order of September 10, 1981. The project would be located in Merrimack County, New Hampshire on the Contoocook River. The Project affects interstate commerce.

Notice of the application has been published and comments have been received from interested Federal, State, and local agencies. New Hampshire Water Resources Board filed a Petition to Intervene and was granted intervention. The significant concerns of the intervenor and the commenting agencies are discussed below.

Intervention

New Hampshire Water Resources Board (the Board) filed a petition to intervene on August 24, 1982 but did not protest the issuance of a license in this matter. The Board was issued a preliminary permit on October 22, 1981, on a water power project known as the Sewalls Falls Dam, Project No. 3040, which is owned by the Board and located downstream of Project No. 3342-000, on the Merrimack River, City of Concord, New Hampshire. The Board contends that the tailwater of Project No. 3342-002 may impose operating restraints on Project No. 3040. The Board further contends that the turbine flow capacity of Project No. 3342-002 may alter the historical water flow downstream of Project No. 3342-002 and adversely affect the operation of Project No. 3040.

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 18 C.F.R. §375.308 (1982), FERC Statutes and Regulations §30,238. This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. 385.1902, FERC Statutes and Regulations §29,052, 47 Fed. Reg. 19014 (1982). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act. Filing an appeal does not operate as a stay of the effective date of this order or any other date specified in this order, except as specifically directed by the Commission.

Staff has studied the river flows, examined the proposed operational scheme, and determined that Project No. 3342-002 will not significantly affect Project No. 3040 because the Applicant proposes to operate the project in a run-of-river mode. Further, according to Article 10, the Licensee of Project No. 3342-002 is required to coordinate the operation of the project, electrically and hydraulically, with other projects or power systems on the river.

Description of Project:

The Penacook Lower Falls Hydroelectric Project consists of the Penacook Lower Falls Dam; a reservoir with an 8.4 acre surface area and a usable storage capacity of 54 acre-feet; a concrete powerhouse containing a single generating unit with an installed capacity of 4,110 kW; and appurtenant facilities. A more detailed project description is contained in Ordering Paragraph (B). The Penacook Lower Falls Hydroelectric Project would be operated as a run-of-the-river project with an average annual generation of 15.4 GWh. 2/

Safety and Adequacy

All project structures, machinery, and appurtenant facilities were analyzed and inspected by the Commission's staff for safety and adequacy. Staff finds the project works to be safe against sliding and overturning under various normal and extreme loading conditions, and that the project spillway capacity is adequate and sufficient to pass the probable maximum flood. It is concluded that the project, under the conditions of this license, is safe and adequate.

Economic Feasibility

The project would operate run-of-the-river under 28 feet of head and would generate an estimated 15,400,000 kWh annually. Power generated by the project will be sold to a member utility of the New England Power Pool. A Staff analysis indicates the project is economically feasible.

2/ Operation of this project would utilize a renewable resource that would save the equivalent of approximately 25,300 barrels of oil or 7,100 tons of coal per year.

56-8

Water Use and Quality

Pollution in the Contoocook River, originating from numerous tanneries and sewage treatment facilities, has been a problem for a number of years. Substantial progress in cleaning up the lower Contoocook has been made in recent years. Water quality at the project site is presently designated Class C (acceptable for recreational boating, fishing, and industrial water supply with or without treatment) but generally meets the standards for Class B (acceptable for swimming and other recreation, fish habitat, and after adequate treatment, for use as water supplies). The New Hampshire Water Supply and Pollution Control Commission issued a water quality certification for the project on April 7, 1981.

The U.S. Department of the Interior (Interior) requested that Applicant provide an instantaneous minimum flow of 338 cfs below the project, and that whenever inflows to the project area fall below 338 cfs, outflows should be no less than inflows. Article 33 requires the proposed minimum flow requested by Interior.

Fish, Wildlife, and Botanical Resources

The Contoocook River in the vicinity of the proposed project supports a warm water fishery. Common fishes are yellow perch, pumpkin seed, white sucker, and smallmouth bass. Based on consultation with the U.S. Fish and Wildlife Service, no Federally-listed endangered or threatened species occur in the project area. However, the Technical Committee for Anadromous Fishery Management of the Merrimack River (CAFMMR) has designated the Contoocook River for restoration as an American shad spawning river. Considerable prime shad spawning habitat exists upstream of the project on the Contoocook River. Interior requested that the Applicant provide suitable fish passage facilities for anadromous fish within 1 year following the completion of a fishway at the Sewalls Falls Dam located on the Merrimack River, immediately downstream from the project.

Applicant proposes to design and construct fish facilities at the Penacook Lower Falls Dam that would accommodate both upstream and downstream migrant fish, with final design approval by appropriate State and Federal agencies. Applicant proposes to construct footings for such facilities during construction of the hydroelectric facilities. Article 32 directs the Licensee to provide fish passage facilities at the Penacook Lower Falls within 3 years after completion of fish passage facilities at the downstream Sewalls Falls Dam (FERC No. 3040), and to file functional design drawings with the Commission within 6 months following completion of fish passage facilities at the Sewalls Falls Dam. A 3-year period would allow for preliminary and final design, and construction of fish passage facilities at Penacook Lower Falls Dam.

Applicant's Exhibit E, Section III, Report on Fish, Wildlife and Botanical Resources, page 29, filed on February 22, 1982, complies with the Commission's regulations and is being approved herein.

Historical and Archeological Resources

There are no known historical or archeological sites in the Penacook Lower Falls Project area, based on consultation with the New Hampshire State Historic Preservation Officer (letter dated April 2, 1981). Article 35 covers any contingent matters.

Recreational Resources

There are no existing recreational facilities within the project area. However, Interior requested that Applicant provide angler access to the Contoocook River across project lands, and such access should include a boat-launching ramp and small parking area below the dam. Applicant has indicated in Section VII of the Exhibit E, Report on Recreational Resources, that a boat-launching ramp and a small parking area would be constructed.

Staff concludes that the Applicant's recreational use plan will adequately provide for angler access needs at the project. Applicant's Exhibit E, Section VII, Report on Recreational Resources, filed on February 22, 1982, consisting of two pages of text and one figure entitled "Boat Ramp" (FERC No. 3342-7), will be approved.

Wild and Scenic River Values

The project is located at the lower end of a 9-mile section on the Contoocook River (Town of Contoocook to Penacook) which is included in the Nationwide Rivers Inventory. The inventory prepared by the National Park Service is an evaluation and identification of rivers and river segments that meet the minimum criteria for further study and/or potential inclusion into the National Wild and Scenic Rivers System.

Interior expressed concern about possible effects of project development on a potential National Wild and Scenic River. Interior's concern is about maintenance of the unique natural qualities of the river corridor and surrounding area during project development. Interior recommends that Applicant be encouraged to use mitigative techniques such as vegetative screening, siting, and architectural design to lessen the visual and audible impacts of the project's construction on identified natural values.

Article 34 of this license requires the Licensee to continue consultation with appropriate agencies in the interest of identifying and alleviating any potential impact of the project upon the river's natural resources.

Environmental Impacts

Construction of the proposed project facilities would require the removal of about 3 acres of existing vegetation around the perimeter of the reservoir. Most of this loss is comprised of disturbed land covered with early successional herbs and shrubs. There would be a net loss in wildlife and wildlife habitat around the reservoir, but these losses are not considered to be significant. A net gain in wetted perimeter of the reservoir would occur during operation, which would benefit some wildlife species such as shore birds.

Construction of the proposed facilities would result in minor short-term impacts relating to increases in suspended solids, traffic, noise, dust, and exhaust emissions. These impacts would end with completion of construction.

Operation of the project would cause the dewatering of a 300-foot-long section of river between the proposed dam and the tailrace. This would have only a minor adverse impact on aquatic resources because the substrate in this section is mostly solid rock.

Inclusion of fish passage facilities and a boat launch would benefit the fishery and recreational opportunities in the area, respectively. The 338 cfs minimum flow would allow for the maintenance of a viable fishery below the project tailrace.

On the basis of the record, and staff's independent analysis, it is concluded that issuance of a license for the project will not constitute a major Federal action significantly affecting the quality of the human environment.

Other Aspects of Comprehensive Development

Based on a review of the Commission's Planning Status Report and Water Resources Appraisals for Hydropower Licensing, Merrimack River Basin New Hampshire and Massachusetts, it is concluded that the Penacook Lower Falls Hydroelectric Project is not in conflict with any planned or potential development in the basin. The project would make good use of the flow and fall of the Contoocook River, and subject to the conditions of this license, will be best adapted to the comprehensive development of the basin under present and foreseeable conditions.

License Term

The proposed Penacook Lower Falls Hydroelectric Project, using a restored dam, reservoir, and appurtenant works and including construction work to erect spillways, a forebay, and powerhouse and to install a generating unit and electrical facilities, is

considered to be a licensing action similar to the relicensing of a project where a moderate amount of reconstruction is proposed. Consistent with the Commission policy expressed in its Order Issuing License for FERC Project No. 2301, this license will be issued for a term of forty years, effective the first day of the month in which the license is issued. 3/

It is ordered that:

(A) This license is issued to New Hampshire Hydro Associates (Licensee) of Boston, Massachusetts, under Part I of the Federal Power Act (Act), for a period of forty years effective the first day of the month in which this order is issued, for the construction, operation, and maintenance of the Penacook Lower Falls Project No. 3342, located on the Contoocook River near Concord and Boscaawen in Merrimack County, New Hampshire. This license supercedes the exemption order of September 10, 1981, for Project No. 3342. The project affects the interests of interstate commerce. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The Penacook Lower Falls Project No. 3342 consists of:

(i) All lands, to the extent of the Licensee's interests in those lands, constituting the project area and enclosed by the project boundary. The project area and boundary are shown and described by certain exhibits that form part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>FERC No. 3342-</u>	<u>Title</u>
G-1	6	Project Boundary Map

(ii) Project works consisting of: (1) the Penacook Lower Falls Dam; (2) a reservoir with an 8.4-acre surface area, and a usable storage capacity of 54 acre-feet; (3) a concrete diversion spillway with three 9.5 feet wide by 10.0 feet high timber gates and seven timber stoplog gates; (4) a concrete gravity auxiliary spillway, 316 feet long and a main concrete spillway, gated, and 106 feet long; (5) a forebay, 70 feet long; (6) a concrete powerhouse containing a single generating unit with an

3/ The Montana Power Company, 56 FPC 2008 (1976).

installed capacity of 4,110 kW; (7) a tailrace excavated in rock, 700 feet long; (8) transmission equipment and electrical facilities consisting of: (a) generator leads; (b) one 4.16/34.5 kV, 7.5 MVA step-up transformer; (c) 200 feet of 34.5-kV line and facilities necessary to connect the project to Concord Electric Company's system; and (9) appurtenant facilities.

The location, nature, and character of these project works are generally shown and described by the exhibit cited above and more specifically shown and described by certain other exhibits that also form a part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>FERC No. 3342-</u>	<u>Title</u>
F-1	1	Powerhouse & Equipment
F-2	2	Powerhouse & Equipment
F-3	3	Auxiliary Spillway
F-4	4	Spillway
F-5	5	Diversion Structure

Exhibit A

Section 1, paragraphs (i, ii), filed on February 22, 1982.

Exhibit E

Page 29 of Exhibit E, Report on Fish, Wildlife, and Botanical Resources (Section III) filed on February 22, 1982. Exhibit E, Report on Recreation Resources (Section VII), filed on February 22, 1982 consisting of two pages of text and one figure entitled "Boat Ramp", FERC No. 3342-7.

(iii) All of the structures, fixtures, equipment, or facilities used or useful in the operation or maintenance of the project and located within the project boundary, all portable property that may be employed in connection with the project, located within or outside the project boundary, as approved by the Commission, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Those portions of Exhibit A, E, F and G designated in ordering paragraph (B) above, are approved and made a part of the license.

(D) This license is also subject to the terms and conditions set forth in Form L-11 (revised October, 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting the Interests of Interstate or Foreign Commerce," Articles 1 through 23, except Article 20, attached to and made a part of this license. The license is also subject to the following additional articles:

Article 24. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 25. The Licensee shall pay the United States the following annual charges, effective the first day of the month in which this license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 5,480 horsepower.

Article 26. Pursuant to Section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency shall be deducted from the amount of any surplus earnings subsequently

accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock shall be their respective weighted average costs for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for year in question plus four percentage points (400 basis points).

Article 27. (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable State and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the Licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the Licensee's costs of administering the permit program. The Commission reserves the right to require the Licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The Licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for:

- (1) construction of new bridges or roads for which all necessary State and Federal approvals have been obtained;
- (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and State water quality certificates or permits have been obtained;
- (3) other pipelines that cross project lands or waters but do not discharge into project waters;
- (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and State approvals have been obtained;
- (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina;
- (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and
- (7) other uses, if:
 - (i) the amount of land conveyed for a particular use is five acres or less;
 - (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and
 - (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year.

At least 45 days before conveying any interest in project lands under this paragraph (d), the Licensee must file a letter to the Director, Office of Electric Power Regulation, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or State agency official consulted, and any Federal or State approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the Licensee to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the Licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do

not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

(4) The Commission reserves the right to require the Licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

Article 28. The Licensee shall commence the construction of the project within 1 year of the date of issuance of the license, and shall complete construction within 2 years from the start of construction.

Article 29. The Licensee shall review and approve the design and construction procedures for contractor designed cofferdams and deep excavations prior to the start of construction. The Licensee shall file with the Commission's Regional Engineer and Director, Office of Electric Power Regulation, one copy of the approved construction drawings and specifications, and a copy of the letter of approval.

Article 30. The Licensee shall file with the Commission's Regional Engineer and the Director, Office of Electric Power Regulation, one copy each of the contract drawings and specifications for pertinent features of the project such as water retention structures, powerhouse and water conveyance structures, at least 60 days prior to start of construction. The Director, Office of Electric Power Regulation may require changes to the plans and specifications to ensure a safe and adequate project.

Article 31. The Licensee shall within 90 days of completion of construction, file in accordance with the Commission's Rules and Regulations revised Exhibit F drawings showing the project as-built.

Article 32. Licensee shall provide fish passage facilities at the Penacook Lower Falls Dam within 3 years after completion of fish passage facilities at the downstream Sewalls Falls Dam (FERC No. 3040). Within 6 months following completion of the proposed fish passage facilities at Sewalls Falls Dam, Licensee shall file for Commission approval functional design drawings of the proposed fish passage facilities at the Penacook Lower Falls Project Dam, Prepared in consultation with the U.S. Fish and Wildlife Service and the New Hampshire Fish and Game Department. Further, Licensee shall file with the Commission within 6 months after construction of the Penacook Lower Falls fish passage facilities, as-built drawings.


Article 33. Licensee shall discharge from the Penacook Lower Falls Project, a continuous minimum flow of 338 cubic feet per second or the inflow to the reservoir, whichever is less, for the purpose of protecting and enhancing aquatic resources in the Contoocook River. These flows may be temporarily modified if required by operating emergencies beyond the control of the Licensee, and for short periods for fishery management purposes upon mutual agreement between the Licensee and the New Hampshire Fish and Game Department.

Article 34. Licensee shall, during development and operation of the project, continue to consult and cooperate with the National Park Service of the U.S. Department of the Interior, New Hampshire Department of Resources and Economic Development, and other appropriate environmental agencies for the protection and development of the natural, scenic, and aesthetic resources and values of the project area.

Article 35. Prior to commencement of any construction or development of any project works or other facilities at the project, the Licensee shall consult and cooperate with the State Historic Preservation Officer (SHPO) to determine the need for,

and extent of, any archeological or historic resource surveys and any mitigative measures that may be necessary. The Licensee shall provide funds in a reasonable amount for such activity. If any previously unrecorded archeological or historic sites are discovered during the course of construction, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensee shall consult with the SEPO to develop a mitigation plan for the protection of significant archeological or historic resources. If the Licensee and the SEPO cannot agree on the amount of money to be expended on archeological or historic work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

(E) Failure of the Licensee to file an application for rehearing shall constitute acceptance of this license. In acknowledgment of acceptance of this license, the license shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.


Lawrence R. Anderson
Director, Office of Electric
Power Regulation

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this Order, New Hampshire Hydro Associates this _____ day of _____, 19____, has caused its corporate name to be signed hereto by _____, its _____ President, and its corporate seal to be affixed hereto and attested by _____ its _____ Secretary, pursuant to a resolution of its Board of Directors duly adopted on the _____ day of _____ 19____, a certified copy of the record of which is attached hereto.

By _____
President

Attest:

Secretary

(Executed in quadruplicate)

99 FERC ¶ 62, 192
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

New Hampshire Hydro Associates
Briar Hydro Associates

Project No. 3342-013

ORDER APPROVING TRANSFER OF LICENSE

(Issued June 14, 2002)

By application filed May 8, 2002, as supplemented May 23 and June 12, 2002, New Hampshire Hydro Associates (NHHA or transferor) and Briar Hydro Associates (Briar or transferee) jointly request Commission approval for a transfer of the license for the Penacook Lower Falls Project No. 3342¹ from NHHA to Briar. The project is located on the Contoocook River, in Merrimack County, New Hampshire. The application will be granted, as described below.

Briar is the licensee for two other licensed hydroelectric projects (Rolfe Canal Project No. 3240² and Penacook Upper Falls Project No. 6689³) located immediately upstream of the Penacook Lower Falls Project. NHHA and Briar are both limited partnerships that have as a general partner Essex Hydro Associates, L.L.C. The purpose of the transfer is to restructure the current ownership and to consolidate and simplify the ownership and operation of the three projects.

Public notice of the transfer application was issued. No comments, protests, or motions to intervene were filed.

CONCLUSIONS

¹21 FERC ¶ 62,282 (1982).

²29 FERC ¶ 62,229 (1984).

³The license was issued to Penacook Hydro Associates at 29 FERC ¶ 62,230 (1984) and transfer of the license to Briar was approved at 62 FERC ¶ 62,003 (1993).

NHHA has generally complied with the terms and conditions of the license and agrees to pay annual charges that may accrue until the transfer is complete.

Briar is a licensee of the Commission, and has established a satisfactory compliance record. Briar is qualified to hold the license and to operate the property under the license, and has agreed to accept all of the terms and conditions of the license and to be bound by the license as if it were the original licensee.

Transfer of the license for this project is consistent with the Commission's regulations and is in the public interest.

The Director orders:

(A) Transfer of the license for the Penacook Lower Falls Project No. 3342 from New Hampshire Hydro Associates to Briar Hydro Associates is approved.

(B) New Hampshire Hydro Associates shall pay all annual charges that accrue up to the effective date of the transfer.

(C) Approval of the transfer is contingent upon: (1) transfer of title of the properties under license and delivery of all license instruments to Briar Hydro Associates, which shall be subject to the terms and conditions of the license as though it were the original licensee; and (2) Briar Hydro Associates acknowledging acceptance of this order and its terms and conditions by signing and returning the attached acceptance sheet. Within 60 days from the date of this order, Briar Hydro Associates shall submit certified copies of all instruments of conveyance and the signed acceptance sheet.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR 385.713.

J. Mark Robinson
Director
Office of Energy Projects

Project No. 3342-013

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this order, Briar Hydro Associates, this _____ day of _____, 20____, has caused its corporate name to be signed hereto by _____, its President, and its corporate seal to be affixed hereto and attested by _____, its Secretary, pursuant to a resolution of its Board of Directors duly adopted on the _____ day of _____, 20____, a certified copy of the record of which is attached hereto.

By _____

Attest:

Secretary

(Executed in quadruplicate)

New Hampshire Water Resources Board Order No. 26.07HB

ORDER NO. 26.07HB
RE-CONSTRUCTION OF A DAM
FOR THE PURPOSE OF WORKING A MILL
(RSA 482:16)

NEW HAMPSHIRE WATER RESOURCES BOARD
37 PLEASANT STREET
CONCORD, NEW HAMPSHIRE 03301

At a meeting of the New Hampshire Water Resources Board (the Board) held on July 28, 1983, the Board voted affirmatively as follows:

WHEREAS, New Hampshire Hydro Associates (Associates) has filed with the Board on May 6, 1983, an application for approval for the reconstruction of a dam across the Contoocook River in the Town of Boscawen, Merrimack County, New Hampshire; and

WHEREAS, the Board has considered the application and finds that based on the preliminary plans as submitted by the Applicant that the dam, if properly maintained, would not be a menace to public safety; and

WHEREAS, in accordance with RSA 482:20 notice was given; and

WHEREAS, in accordance with RSA 482:21 a public hearing has been held for the purpose of determining if said project will be of public use and benefit; and

WHEREAS, the Board finds that the tax benefits to the city and state, and energy production considerations are in the public interest; and

WHEREAS, the Board finds that there will be no adverse impacts upon scenic or recreational values; and

WHEREAS, the Board finds that there will be no major adverse impacts upon fish and wildlife; and

WHEREAS, the Board finds that there will be no adverse effect upon navigation; and

B 1451P0156

WHEREAS, the Board finds that there will be no adverse effect upon bathing and other public uses; now therefore

The Board finds that said project is of public use and benefit.

IT IS ORDERED that the request be and is approved and said reconstruction is hereby registered and authorized subject to the following terms and conditions:

1. The dam shall only be reconstructed (the addition of 1 1/2 feet high flashboards) after submission and approval of the complete set of "final plans and specifications" and shall be operated and maintained in compliance with the provisions of the Revised Statute Annotated Chapter 482.
2. The elevation of the "operating pool" shall be as stated on the Statement of Intent application and other material submitted; that being 280 MSL.
3. The Applicant shall receive the appropriate permits, if required, from the Federal Energy Regulatory Commission, and any of their requirements that are inconsistent with this Board Order will be subject to the Board's review and approval.
4. The Applicant shall cut any trees growing in the proposed impoundment area.
5. The Applicant shall be required to pass the prevailing river flow either through the turbine and/or gates of this facility continuously with a minimum discharge of inflow equalling outflow.
6. Registration of the dam by the Board does not relieve the owner from meeting the requirements of public safety or other provisions of the law.
7. Registration of the dam by the Board does not convey a property right nor authorize any injury to property or invasion of other rights.
8. The proposed dam reconstruction shall be completed within a period of two years after issuance of this Order unless otherwise extended.

B 1451P0158 -

9. The Applicant shall have the responsibility to coordinate this project with that of the New Hampshire Public Works & Highways bridge project in the same area.

NEW HAMPSHIRE WATER RESOURCES BOARD

By Delbert F. Downing
Delbert F. Downing, Chairman

Date August 9, 1983

DFD/GLK/mdw

cc: Town of Boscawen, City of Concord

N.H. Public Works & Highways, Bridge Section

File 26.07/51.08

MERRIMACK COUNTY RECORDS
Recorded Aug. 12, 8-00A.M., 1983

B 1451P0158



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
P.O. Box 1518
Concord, New Hampshire 03301

Mr. Thomas A. Tarpey
New Hampshire Hydro Associates
Three Capitol Street
Concord, New Hampshire 03301

MAR 31 1981

Dear Mr. Tarpey:

This responds to your letter dated March 23, 1981, requesting our comments on your proposal to apply for an exemption from Federal licensing for the Penacook Lower Falls hydroelectric project, Contoocook River, Merrimack County, New Hampshire. The following comments pertain to Exhibit E (environmental report) of your draft application, which was included with your letter. We have also included the terms and conditions which we will ask the Federal Energy Regulatory Commission (FERC) to apply to your exemption pursuant to Article 2 of Section 4.105 of the Energy Security Act of 1980.

Comments on Exhibit E

A specific section is lacking on the expected environmental impacts of the project. Apparently, your discussion of impacts is included in your section on the environmental setting, which accounts for almost all of your environmental report. We call your attention to FERC Order 106 (instructions for exemption applications) which specifically calls for a description of impacts and measures to mitigate these impacts. (See page 65 of FERC Order 106). Furthermore, several impacts of the project are identified in your March 23 letter. However, none of these is discussed in the report itself. We, therefore, recommend that your final environmental report conform to the format described in FERC Order 106, and specifically include a section on environmental impacts.

Project Impacts to Fish and Wildlife Resources

You indicate in your March 23 letter that the project will divert water from a 250- to 350-foot stretch of the Contoocook River for roughly 75 percent of the year. Furthermore, because a tailrace channel will be excavated below the project dam, roughly one-quarter to one-half of an acre of streambed adjacent to the tailrace will be dried up. These actions will result in habitat losses. We are willing to accept these losses, however, in exchange for efficient fish passage facilities, which you have agreed to construct at the dam. Being the first dam on a river slated for restoration of American shad, such passage facilities are critical.

The project is also likely to congregate and/or delay upstream migrating shad as they negotiate passage facilities at the dam. It is expected that the massing of shad below the dam will make the area particularly suitable for angling. To improve access by fishermen to the river below the dam, we suggest that every effort be made to include public access in the project plan. This might include constructing a boat launching ramp and small parking area on project lands below the dam.

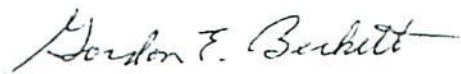
Terms and Conditions of Exemption

Pursuant to Article 2 of Section 4.105 of the Energy Security Act of 1980, we will be specifying terms and conditions for inclusion by FERC in your exemption from licensing. So that you can incorporate these into the final environmental report, they are:

1. The applicant will provide suitable fish passage facilities for anadromous fish one year following the completion of the Sewalls Falls fishway(s) on the Merrimack River. (Fish passage facilities at Sewalls Falls are presently expected to be operational in 1987). Both up- and downstream passage are to be included at the Penacook Lower Falls project. The applicant will be responsible for design and construction of passage facilities. However, final design should be approved by the appropriate State and Federal agencies.
2. The applicant will provide an instantaneous flow of 338 cubic feet per second (cfs) below the project. Whenever inflows to the project area fall below 338 cfs, outflows should be no less than inflows.
3. The applicant will provide access to anglers across project lands to the Contoocook River. Such access will include a boat launching ramp below the dam and small parking area, unless access to project lands from public roads is not available.

We recommend that you include a copy of this letter in your application as documentation of your coordination with this Service.

Sincerely yours,



Gordon E. Beckett
Supervisor



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Robert R. Scott, Commissioner

November 20, 2017

Shannon Ames, Executive Director
Low Impact Hydropower Institute
329 Massachusetts Ave., Suite 2
Lexington, MA 02420

RE: Water Quality Status of the Contoocook River for Low Impact Hydropower Institute Recertification of the Penacook Lower Falls Hydroelectric Project (FERC License No. 3342) Contoocook River – Penacook, NH

Dear Ms. Ames:

Essex Hydro Associates (EHA), on behalf of Briar Hydro Associates, is applying for recertification from the Low Impact Hydropower Institute (LIHI) for the Penacook Lower Falls Hydroelectric Project (FERC License No. 3342) on the Contoocook River in Penacook, NH. We understand that for the applicant to receive LIHI recertification, you require a statement from the New Hampshire Department of Environmental Services (NHDES) stating that the project is complying with state water quality standards. On October 5, 2015, NHDES sent EHA a letter outlining what would be needed to determine if the Contoocook River in the vicinity of the Penacook Lower Falls Hydroelectric Project was or was not attaining water quality standards. The letter stated that "In order for NHDES to determine if the subject hydroelectric project is causing or contributing to water quality standard violations, additional monitoring and information is needed. In general, data / information is needed to address the following water quality concerns that are typically associated with hydropower projects:

1. Impact on ambient water quality criteria and thresholds;
2. Impact of pond fluctuations on aquatic habitat;
3. Maintenance of adequate minimum flows to protect downstream aquatic life; and
4. Adequate upstream and downstream fish passage."

The purpose of this letter is to provide you with our assessment of the data and information received from EHA in response to our letter of October 5, 2015 and our conclusions as to whether or not the Penacook Lower Falls Hydroelectric Project is complying with New Hampshire surface water quality standards in the Contoocook River.

Water quality data was collected for dissolved oxygen, water temperature, total phosphorus, and chlorophyll-a. Monitoring locations in the upstream impoundment (02-CTC) and in the downstream tailrace section of the river (01G-CTC) were monitored continuously for water temperature and dissolved oxygen using multi-parameter dataloggers for three periods of time (August 2015, July 2016 and August 2017). NHDES specified that the multi-parameter continuous water quality data should be collected under critical low flow ($< 3 \times 7Q_{10}$) and higher water temperature conditions ($> 23^{\circ} \text{C}$). There is a USGS stream gage (# 01085500) on the Contoocook River in Hopkinton, NH approximately eight miles upstream from the Penacook Lower Falls Hydroelectric Project. NHDES uses this gage as a surrogate to estimate low flow conditions in the vicinity of the project.

During the datalogger deployment in August of 2015 the flows at the gage were above the target conditions of $3 \times 7Q_{10}$ (108 cfs) for a majority of the days. The datalogger deployed at station 02-CTC indicated that there were no violations of the dissolved oxygen water quality standard but the datalogger at 01G-CTC failed to record any accurate dissolved oxygen data. The discharge levels during the

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datalogger deployment in July of 2016 were below the target conditions of 108 cfs on all days of the deployment. The datalogger deployed at station 01G-CTC indicated that there were no violations of the dissolved oxygen water quality standard but the datalogger at 02-CTC showed erratic readings of dissolved oxygen. It is unclear if the readings that were below the water quality standard were due to the true water quality conditions of the river or a failure of the dissolved oxygen sensor. In August of 2017 NHDES deployed dataloggers at stations 02-CTC and 01G-CTC. Station 02-CTC is a NHDES River Trend Monitoring Station. During the 2017 deployment the discharge levels were just above the target of 108 cfs for a majority of the deployment. Both dataloggers provided full datasets that passed all quality control requirements and showed no violations of state water quality standards for dissolved oxygen.

The daily average water temperature in the Contoocook River was above or just below the target of 23° C for the majority of days during the deployments in 2015, 2016 and 2017. EHA has stated that during the collection of the continuous water quality data the Penacook Lower Falls Hydroelectric Project was operating under normal operating procedures during all three deployments. Between June and August 2015, EHA also collected ten weekly samples of total phosphorus and chlorophyll-a at stations 02-CTC (upstream) and 01G-CTC (downstream). Additional chlorophyll-a and total phosphorus data was collected at station 02-CTC by NHDES during 2016 and 2017 as part of the River Trend Monitoring Program.

NHDES has assessed the water quality data collected in 2015, 2016 and 2017, and based on this assessment concludes that the water quality in the impoundment and downstream section of the Contoocook River, under the project operating conditions and flow conditions during which the data was collected, is meeting existing water quality criteria or thresholds for dissolved oxygen, total phosphorus and chlorophyll-a. At the time of the deployment and retrieval of the dataloggers, vertical profiles of dissolved oxygen and water temperature was measured at the station in the impoundment (02-CTC) in 2015 and 2016 to determine if thermal stratification was present. The vertical profiles collected at 02-CTC indicate that the impoundment was not thermally stratified at the time sampling occurred.

In the October 5, 2015 letter NHDES provided the assessment status for the parameters of concern for the reaches of the Contoocook River upstream and downstream of the Penacook Lower Falls Hydroelectric Project. Table 1 provides an update to the current assessment status of the river reaches in question for the parameters collected in 2015, 2016 and 2017. The assessments are based on the methodology described in the NHDES Consolidated Assessment and Listing Methodology (CALM)¹. This information will be used in the next Section 305(b)/303(d) Water Quality Assessment report which is expected to be issued by NHDES in 2018. Please note that the assessment status listed in Table 1 could change if water quality criteria or thresholds change and/or if additional data indicate water quality violations. For example, data collected at lower flows and/or higher temperatures might result in a different assessment.

¹ NHDES. 2016. Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. NH Department of Environmental Services, Watershed Management Bureau, Concord, NH

Table 1. Assessment Status for Water Quality Monitoring Parameters – Penacook Lower Falls Hydroelectric Project

Assessment Unit and Monitoring Station	Location	Parameter	Designated Use	Assessment Status based upon 2015 - 2017 sampling
NHIMP700030507-07 02CTC	Penacook Lower Falls Hydroelectric Project - Impoundment	Dissolved Oxygen (mg/L)	Aquatic Life	Fully Supporting
		Dissolved Oxygen (% Sat.)	Aquatic Life	Fully Supporting
		Chlorophyll-a	Primary Contact Recreation	Fully Supporting
			Aquatic Life	Potentially Supporting ^A
		Total Phosphorus	Aquatic Life	Indeterminate ^A
NHRIV700030507-10 01G-CTC	Downstream of Penacook Lower Falls Hydroelectric Project - Tailrace	Water Temperature	Aquatic Life	No numeric criteria ^C
		Dissolved Oxygen (mg/L)	Aquatic Life	Fully Supporting
		Dissolved Oxygen (% Sat.)	Aquatic Life	Fully Supporting
		Chlorophyll-a	Primary Contact Recreation	Fully Supporting
		Total Phosphorus	Aquatic Life	No numeric criteria ^B
		Water Temperature	Aquatic Life	No numeric criteria ^C

^A NHDES does have numeric water quality thresholds for the aquatic life designated use for total phosphorus and chlorophyll-a in lakes/ponds and impoundments with characteristics similar to lakes/ponds but it can only be applied to waterbodies where the trophic class is known. For waterbodies where the trophic class is known the median total phosphorus and chlorophyll-a value is used to make the threshold comparison. The aquatic life designated use nutrient and chlorophyll-a thresholds are depicted below with the median values for each parameter for the data collected at station 02-CTC in assessment unit NHIMP700030507-07 and station 01G-CTC in assessment unit NHRIV700030507-10 during the summer of 2015.

	TP (ug/L)	Chl-a (ug/L)
Median 02-CTC (2015)	19	2.14
Median 01G-CTC (2015)	18	2.01
Oligotrophic	< 8	< 3.3
Mesotrophic	≤ 12	≤ 5
Eutrophic	≤ 28	≤ 11

^B NHDES does not have numeric water quality criteria for nutrients in rivers or streams. The narrative criteria states that "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring."

^C Although there is currently no numerical water quality criteria for water temperature, NHDES is in the process of collecting biological and water temperature data that will contribute to the development of a procedure for assessing rivers and stream based on water temperature and its corresponding impact to the biological integrity of the waterbody.

EHA has confirmed with NHDES that the minimum flow operations have not changed since the original LIHI certification in 2010. The FERC license for this project requires that the facility be operated as a run of river operation with a continuous minimum flow of 338 cfs or the inflow to the reservoir, whichever is less. EHA has provided NHDES with the 2010 - 2014 annual reports to FERC that certify compliance with the required minimum flows. In 2015 FERC notified the project that they no longer require annual certifications of minimum flow and only need to be notified if there is a deviation that occurs from the required minimum flow. No deviations occurred in 2015 or 2016.

Regarding the issue of fish passage circumstances have not changed since certification when EHA received confirmation of compliance from John Warner of the U.S. Fish and Wildlife Service (USFWS) and Carol Henderson of New Hampshire Fish and Game (NHFG) for downstream fish passage. Regarding upstream fish passage, NHDES has also received documentation from EHA that barring changes to river conditions or fish management plans, the schedule for design and installation of upstream fish passage infrastructure will be governed by the construction and successful function of upstream fish passage facilities located on the Merrimack River downstream of the confluence with the Contoocook

River. NHFG and the USFWS have indicated their concurrence with the current status of upstream fish passage.

Eel passage at the Penacook Lower Falls Hydroelectric Project is contingent on downstream passage at the upstream Rolfe Canal Hydroelectric Project and Penacook Lower Falls Hydroelectric Project. In February of 2017 EHA staff met with USFWS and NHFG staff to discuss design of a permanent downstream eel passage measure, a sloping screen and eel traps at the Rolfe Canal Hydroelectric Project. EHA is continuing to coordinate with USFWS and NHFG to determine the best structure designs to address eel passage issues. .

In summary, based on the current operation of the facility, current water quality standards, water quality data collected in 2015-2017 and information provided to NHDES by EHA, the Contoocook River immediately upstream and downstream of the Penacook Lower Falls Hydroelectric Project is meeting water quality standards or thresholds for dissolved oxygen, total phosphorus and chlorophyll-a under the conditions during which the data was collected. As previously noted, the above water quality assessment could change in the future should a change in water quality criteria or thresholds and/or new data indicate water quality violations or the potential for water quality violations. It could also change if the NHDES, USFWS and/or NHFG conclude in the future that the project is not in compliance with upstream or downstream fish/eel passage requirements or minimum flow requirements.

As you may know, the Applicant has begun the relicensing process with the Federal Energy Regulatory Commission (FERC) since the current FERC license for this project expires in 2022. It's likely that additional studies (including, but not limited to, water quality sampling) will be required as part of relicensing effort. Information collected from these studies, which are anticipated to be done by October 2019, could result in a different assessment than stated above.

Should you have any questions or require additional information please contact me at (603)271-2083 or ted.walsh@des.nh.gov.

Sincerely,



Ted Walsh, Surface Water Monitoring Coordinator
NHDES Watershed Management Bureau

Cc (via email): Dr. Michael J. Sale, Low Impact Hydropower Institute
Elise Anderson, Essex Hydro Associates, LLC
Andrew Locke, Essex Hydro Associates, LLC
Carol Henderson, NHFG
John Magee, NHFG
John Warner, USFS

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

37 FERC ¶ 62,828

DAVID B. WARD, P.C.

Copy J. J. Wolf
W. H. W.
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RECEIVED OCT 20 1986

5300

OCT 16 1986

Lower Penacook Project

Project No. 3342-004

ORDER AMENDING LICENSE ARTICLE

(Issued October 10, 1986)

On August 5, 1986, New Hampshire Associates (licensee) filed an application for amendment of the license for the Lower Penacook Project, to amend article 32 to reflect an agreement between Public Service of New Hampshire (PSNH) and the state and federal fishery agencies regarding the construction of fish passage facilities at mainstem dams on the Merrimack River. 1/ The Lower Penacook Project is located on the lower Contoocook River, which is a tributary stream proposed for anadromous fish restoration and that enters the Merrimack River upstream of the fifth mainstem dam.

The revision of article 32 will provide for construction of fish passage facilities at the Lower Penacook Project on a schedule consistent with the agreement on mainstem fish passage, and based on the success of the anadromous fish restoration program on the Merrimack River.

The Director orders:

(A) Article 32 of the license is amended to read:

Article 32. The licensee, within 2 years after the annual passage of 15,000 adult American shad through the fish passage facilities at the Garvins Falls Project (FERC No. 1893), or through the fish

1/ The agreement is entitled, A Comprehensive Plan for Provision of Anadromous Fish Passage Measures and Facilities at PSNH's Merrimack-Pemigewasset River Hydroelectric Dams, FERC Project Nos. 1893, 2456, and 2457, and was signed by PSNH, the New Hampshire Fish and Game Department, the Massachusetts Division of Fisheries and Wildlife, the Massachusetts Division of Marine Fisheries, the National Marine Fisheries Service, the U.S. Forest Service, and the U.S. Fish and Wildlife Service.

facilities of the proposed Sewalls Falls Project (FERC No. 7216) if constructed, but in no case later than July 1, 2004, shall file for Commission approval functional design drawings of fish passage facilities for the Lower Penacook Project, prepared after consultation with the New Hampshire Fish and Game Department and the U.S. Fish and Wildlife Service. The licensee shall provide upstream and downstream fish passage facilities at the Lower Penacook Project within 5 years after the annual passage of 15,000 adult American shad through the fish facilities at the Garvins Falls Dam, or Sewalls Falls Dam if constructed, consistent with the agreement entitled, A Comprehensive Plan for Provision of Anadromous Fish Passage Measures and Facilities at PSNH's Merrimack-Pemigewasset River Hydroelectric Dams, FERC Project Nos. 1893, 2456, and 2457. Further, the licensee shall file as-built drawings of the Lower Penacook Project fish passage facilities within 6 months after completion of construction.

(B) This order is issued under authority delegated to the Director and is final unless appealed to the Commission under Rule 1902 within 30 days from the date of this order.

Richard T. Hunt
Richard T. Hunt
Director, Office of
Hydropower Licensing

Memo



NH NATURAL HERITAGE BUREAU NHB DATACHECK RESULTS LETTER

To: Elise Anderson
55 Union Street
Boston, MA 02108

From: Amy Lamb, NH Natural Heritage Bureau

Date: 5/30/2017 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB17-1637 Town: Boscawen and Concord

Location: Tax Maps: Map P1 Block 7 Lot 8

Description: The project is an existing hydroelectric plant. No new construction.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: This site is within an area flagged for possible impacts on the state-listed *Alasmidonta varicosa* (brook floater) in the Merrimack River. Please contact NH Fish & Game.

Invertebrate Species

	State ¹	Federal	Notes
Brook Floater (<i>Alasmidonta varicosa</i>)	E	--	Contact the NH Fish & Game Dept (see below).
Riverine Clubtail (<i>Stylurus amnicola</i>)	SC	--	Contact the NH Fish & Game Dept (see below).

Plant species

	State ¹	Federal	Notes
long-leaved pondweed (<i>Potamogeton nodosus</i>)*	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
Sessile-fruited Arrowhead (<i>Sagittaria rigida</i>)*	E	--	Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.

Vertebrate species

	State ¹	Federal	Notes
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	--	Contact the NH Fish & Game Dept (see below).
Fowler's Toad (<i>Bufo fowleri</i>)	SC	--	Contact the NH Fish & Game Dept (see below).
Northern Leopard Frog (<i>Rana pipiens</i>)	SC	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (<i>Clemmys guttata</i>)	T	--	Contact the NH Fish & Game Dept (see below).
Vesper Sparrow (<i>Pooecetes gramineus</i>)	SC	--	Contact the NH Fish & Game Dept (see below).

Memo



NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

Wood Turtle (*Glyptemys insculpta*)

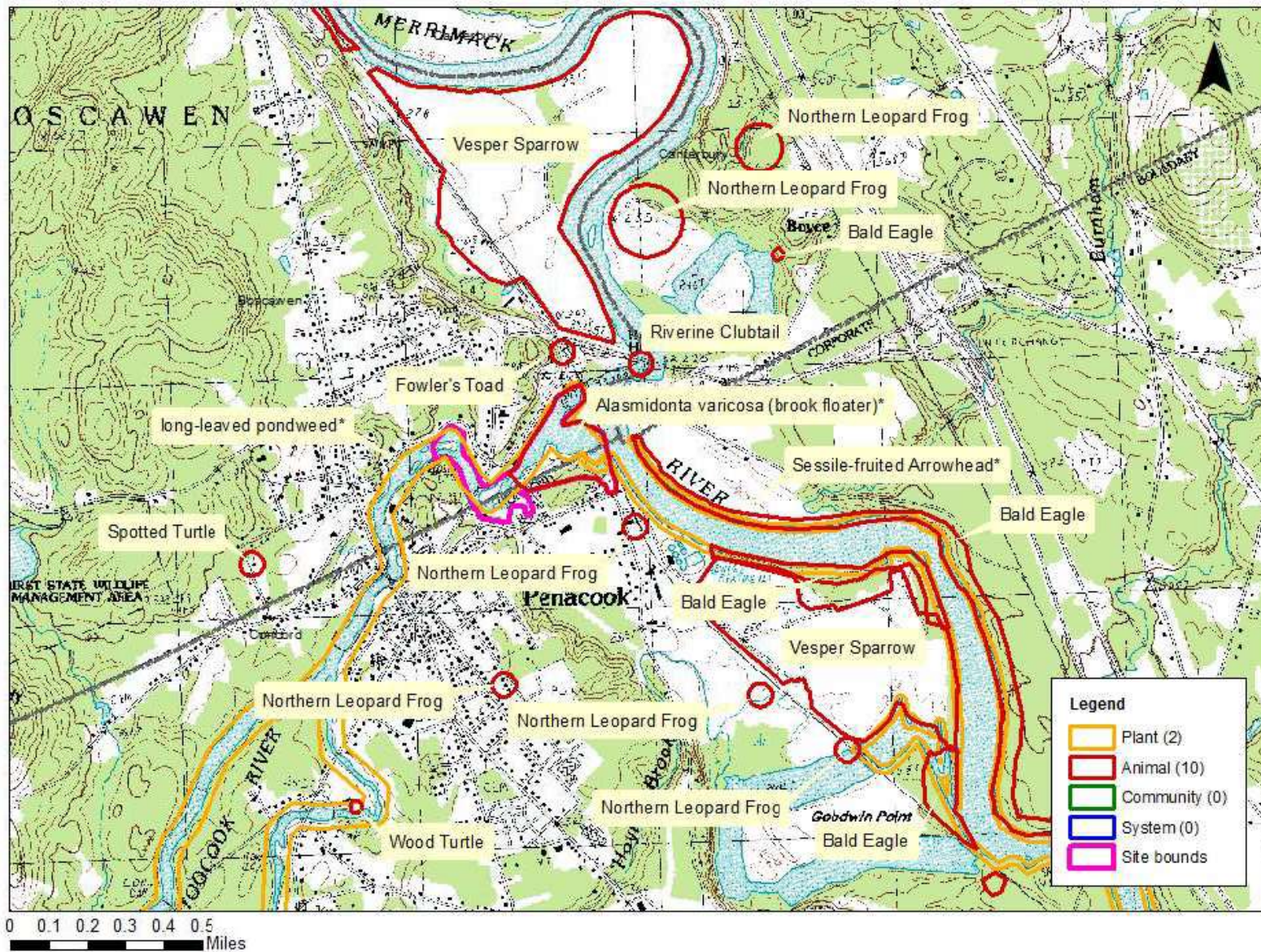
SC -- Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

NHB17-1637



New Hampshire Natural Heritage Bureau - Animal Record

Riverine Clubtail (*Stylurus amnicola*)**Legal Status**

Federal: Not listed
State: Special Concern

Conservation Status

Global: Apparently secure but with cause for concern
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2009: Uncommon (<5); exuvia, also emerging adult(s) on 7/19.
General Area: 2009: Large River.
General Comments:
Management
Comments:

Location

Survey Site Name: Merrimack River, Rte. 4 bridge
Managed By: Hannah Dustin Historic Site

County: Merrimack
Town(s): Boscawen
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2009-07-19 Last reported: 2009-07-19

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Plant Record

Sessile-fruited Arrowhead (*Sagittaria rigida*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
Comments on Rank:

Detailed Description: 1939: Specimen collected.
General Area: 1939: Sandy river shore.
General Comments:
Management
Comments:

Location

Survey Site Name: Concord
Managed By: Sewall Falls WMA

County: Merrimack
Town(s): Concord
Size: 377.3 acres Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Sandy shore of Merrimack River in Concord.

Dates documented

First reported: 1939-08-28 Last reported: 1939-08-28

New Hampshire Natural Heritage Bureau - Animal Record

Bald Eagle (*Haliaeetus leucocephalus*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2002-2012: Wintering eagles regularly observed at locations along the Merrimack River, day perching and night roosts:2013: 1 eagle observed on 1/4. 1 eagle observed on 1/12. 3 eagles observed at a single location 1/29. 2 eagles observed at a single location on 2/1. 2 eagles observed at a single location on 2/15. 1 eagle observed on 2/23. 1 eagle observed on 3/4.2012: Solitary eagles observed at 3 separate locations on 1/7. 1 eagle observed on 1/12. 1 eagle observed on 1/17. 1 eagle observed on 1/19. Solitary eagles observed at 3 separate locations on 1/23. 1 eagle observed on 1/25. 1 eagle observed on 2/2. 1 eagle observed on 2/9. 1 eagle observed on 2/14. 2 eagles observed at a single location, and solitary eagles observed at 5 separate locations on 2/25. 2 eagles observed at a single location on 2/28. Solitary eagles observed at 2 separate locations on 3/6. 1 eagle observed on 12/11. 2011: 1 eagle observed on 1/5. 1 eagle observed on 1/6. 1 eagle observed on 1/8. Solitary eagles observed at 2 separate locations on 1/9. 1 eagle observed on 1/11. Solitary eagles observed at 2 separate locations on 1/13. 1 eagle observed on 1/20. 2 eagles observed at a single location on 1/31. Solitary eagles observed at 2 separate locations on 2/3. Solitary eagles observed at 2 separate locations on 2/7. 1 eagle observed on 2/9. 2 eagles observed at a single location and solitary eagles observed at 2 separate locations on 2/15. Solitary eagles observed at 2 separate locations on 2/17. 1 eagle observed on 2/22. 2 eagles observed at 2 separate locations and a solitary eagle at a separate location on 2/26. 1 eagle observed on 2/28. 1 eagle observed on 3/2. Solitary eagles observed at 2 separate locations on 3/8. 2 eagles observed at a single location, and a solitary eagle observed at a separate location on 3/15. 1 eagle observed on 12/27. 1 eagle observed on 12/29.2010: 3 eagles observed at a single location, 2 observed at a single location, and a solitary eagle observed at a separate location on 1/9. 1 eagle observed on 12/3. 1 eagle observed on 12/17. 1 eagle observed on 12/22. 2 eagles observed at a single location on 12/28. 2 eagles observed at a single location on 12/30.2009: 2 eagles observed at a single location, and a solitary eagle observed at a separate location on 1/10. 3 eagles observed at a single location on 2/28.2008: 2 eagles observed at a single location, and solitary eagles observed at 3 separate locations on 1/12. 2 eagles observed at a single location and a solitary eagle observed at a separate location on 2/23.2007: Solitary eagles observed at 2 separate locations on 1/13. 1 eagle observed on 2/24.2006: 1 eagle observed on 2/25.2005: 2 eagles observed at a single location on 1/8. 2 eagles observed at a single location and a solitary eagle observed at a separate location on 2/24. 2 eagles observed at a single location on 2/26.2004: Solitary eagles observed at 5 separate locations on 1/10. 1 eagle observed on 1/27.2003: 1 eagle observed on 1/7. 1 eagle observed on 1/9. 1 eagle observed on 2/2. Solitary eagles observed at 2 separate locations on 2/5. 1 eagle observed on 3/4.2002: 1 eagle observed on 1/12. 1 eagle observed on 12/18.1993: Sightings near Hannah Dusting parking area, but no defined roost or perch site. Perching on east side of Sewall's Falls Dam area. Perching near Horseshoe Pond. Perching on both sides from Bridge Street to Manchester Street. Perching on east side of the river near Blue Seal Feeds. No perching in last few years near Garvins Falls Dam. Bow Power Plant: On River Road on west side of river, possible roosting just north of liquor store. Perching in Hooksett on both sides of river just north of Route 3 bridge.1991: The most active locations are Sewalls Falls, wetlands near I-393, Bow Power Plant and Hooksett boat ramp. Location of eagles depends on availability of open water and other factors.

General Area:

General Comments:

Management

Comments:

Location

Survey Site Name: Merrimack River at Concord

Managed By: Merrimack River State Forest

County: Merrimack

Town(s): Concord

Size: 418.7 acres

Elevation: 190 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Various locations along both banks of the Merrimack River, from Franklin south to Hooksett.

Dates documented

First reported: 198?

Last reported: 2013-03-04

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Bald Eagle (*Haliaeetus leucocephalus*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2016: Nest 1: 1 chick fledged. 2015: Nest 1: 2 chicks fledged. 2014: Nest 1: 1 chick fledged.

General Area:

General Comments:

Management

Comments:

Location

Survey Site Name: Canterbury Oxbow
Managed By:

County: Merrimack

Town(s): Canterbury

Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2014

Last reported: 2016

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Fowler's Toad (*Bufo fowleri*)**Legal Status**

Federal: Not listed
State: Special Concern

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2012: Area 12924M: 3-5 adult males heard. 2011: Area 12924M: 1 adult male observed.
Additional males heard calling from nearby wetland.

General Area: 2012: Area 12924M: Site is connected to both rivers [Merrimack and Contoocook] at high flows, but becomes more isolated in the summer. Lack of rain in spring of 2012 has reduced it to a grassy pool. 2011: Area 12924M: Road adjacent to gravel pit near Merrimack River.

General Comments:
Management
Comments:

Location

Survey Site Name: Hannah Dustin Historic Site
Managed By: Hannah Dustin Historic Site

County: Merrimack
Town(s): Boscawen
Size: 1.9 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: Area 12924M: River Road, Boscawen, near Route 4 overpass.

Dates documented

First reported: 2011-05-26 Last reported: 2012-04-21

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Leopard Frog (*Rana pipiens*)

Legal Status

Federal: Not listed
State: Special Concern

Conservation Status

Global:	Demonstrably widespread, abundant, and secure
State:	Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2008: Area 11615: Adults and young. Too many to count.2004: 1 observed. (Obs_id 1913).
General Area: 2008: Area 11615: Seen in mowed field.2004: The leopard frog was located underneath some alder habitat with dense, grassy/herbaceous ground cover. The spot is within a few hundred feet of some vernal pools (Obs_id 1913).

General Comments:
Management
Comments:

Location

Survey Site Name: Boyce, west of
Managed By: Booth

County: Merrimack
Town(s): Canterbury
Size: 25.6 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2008: Area 11615: 34 Oxbow Road, Canterbury.2004: Riverland Conservation Area, Canterbury, 0.1 miles from Merrimack River, about 0.4 miles northeast of the Route 4 bridge between Canterbury and Boscawen (Obs_id 1913).

Dates documented

First reported:	2004-06-03	Last reported:	2008-09-30
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The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Leopard Frog (*Rana pipiens*)**Legal Status**

Federal: Not listed
State: Special Concern

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2011: Area 12909: 2 adults observed. Area 12910: 1 adult observed. Area 13151: 1 adult observed. 2009: Area 12409: Frogs observed. Too many to count.

General Area: 2011: Area 12909: Turf lawn grass. Area 12910: Grasses and sedges along water's edge at oxbow pond. Area 13151: Wildflower garden with small pond.

General Comments:
Management
Comments:

Location

Survey Site Name: Hoyt Brook
Managed By:

County: Merrimack
Town(s): Concord
Size: 7.7 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: Area 12909: Backyard of 1834 Abiel Rolfe House. Area 12910: Edge of Merrimack River oxbow near Goodwin Point. Area 13151: 68 Community Drive, Penacook. 2009: Area 12409: Morrill's Farm (43 16'37.87 N / 71 34'55.24 W).

Dates documented

First reported: 2009-10-04 Last reported: 2011-09-03

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Vesper Sparrow (*Pooecetes gramineus*)**Legal Status**

Federal: Not listed
State: Special Concern

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2014: Canterbury Sod Farm: 3 observed on 5/17. Martin's Field: 2 observed on 6/19. Morrills' Farm: 2 observed between 5/3 and 8/31. 2013: Morrill's Farm: 1 observed on 5/5. 2012: Canterbury Sod Farm: 1 observed between 5/19 and 5/31. Crete's Field: 1 observed between 6/9 and 7/14. Morrill's Farm: 1 observed between 5/16 and 5/19. 2011: Morrill's Farm: 1 observed between 5/22 and 6/28. 2010: Morrill's Farm: 1 observed between 5/2 and 7/5. 2009: Morrill's Farm: 4 observed between 5/9 and 6/7. 2008: Morrill's Farm: 4 observed between 5/18 and 8/17. 2007: Morrill's Farm: 2 observed between 5/23 and 6/17. 2006: Morrill's Farm: 2 observed between 5/18 and 7/15.

General Area:

General Comments:

Management

Comments:

Location

Survey Site Name: Merrimack River Fields
Managed By: Gold Star Sod Farms, Inc

County: Merrimack

Town(s): Boscawen

Size: 770.7 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2006-05-18

Last reported: 2014-08-31

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Wood Turtle (*Glyptemys insculpta*)**Legal Status**

Federal: Not listed
State: Special Concern

Conservation Status

Global: Rare or uncommon
State: Rare or uncommon

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank:

Detailed Description: 2006: Area 11662: 1 adult female seen.
General Area: 2006: Area 11662: On lawn behind old mill building.
General Comments:
Management
Comments:

Location

Survey Site Name: Contoocook River, Penacook
Managed By:

County: Merrimack
Town(s): Concord
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Behind Briar Pipe Apts, Washington St, Penacook.

Dates documented

First reported: 2006-06-19 Last reported: 2006-06-19

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location


Merrimack County, New Hampshire



Local office

New England Ecological Services Field Office

☎ (603) 223-2541

 (603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

<http://www.fws.gov/newengland>

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds>

</pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Dec 1 to Aug 31

Black-billed Cuckoo *Coccyzus erythrophthalmus*

Breeds May 15 to Oct 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Bobolink *Dolichonyx oryzivorus*

Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Canada Warbler *Cardellina canadensis*

Breeds May 20 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cape May Warbler *Setophaga tigrina*

Breeds Jun 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Evening Grosbeak *Coccothraustes vespertinus*

Breeds May 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle *Aquila chrysaetos*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Olive-sided Flycatcher *Contopus cooperi*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3914>

Prairie Warbler *Dendroica discolor*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird *Euphagus carolinus*

Breeds May 10 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

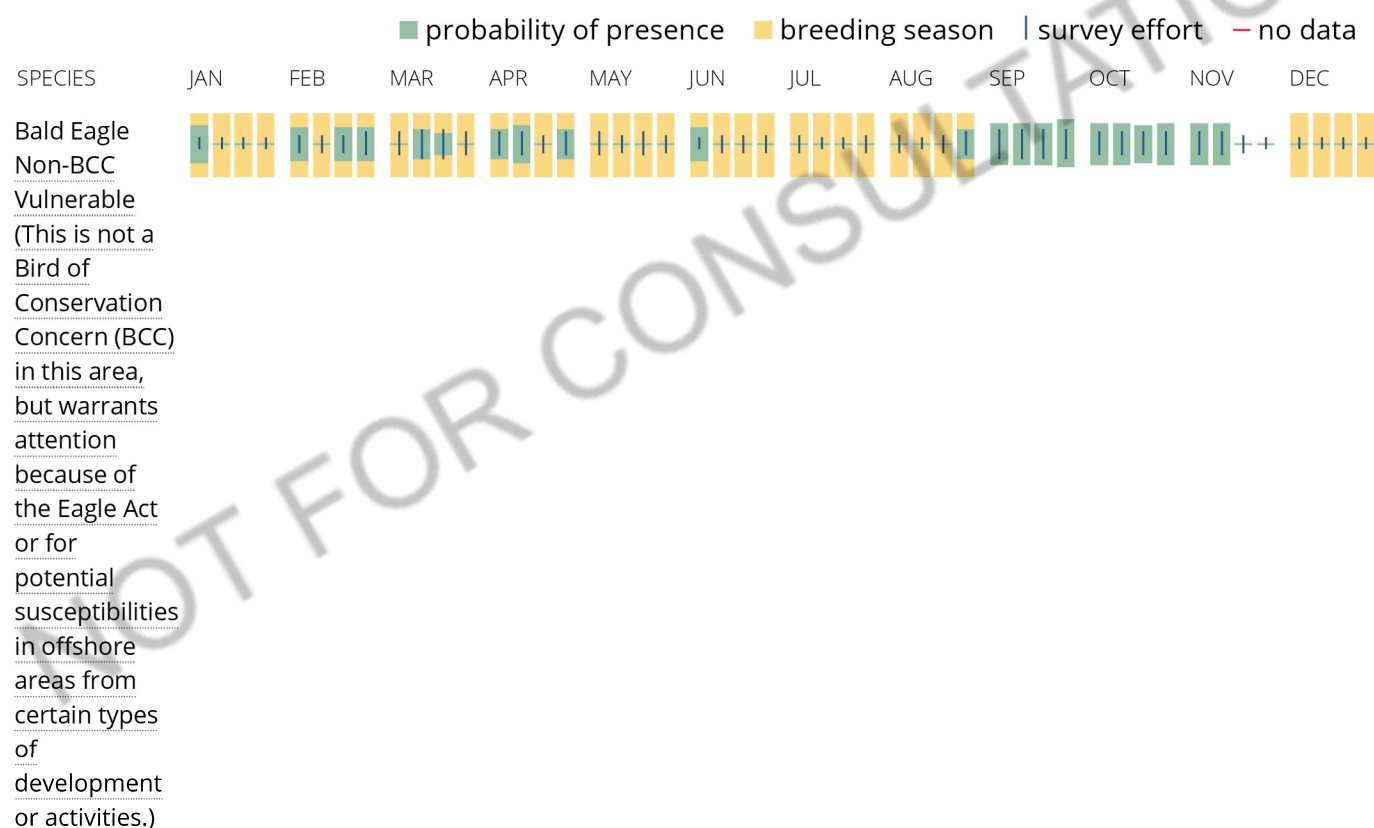
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

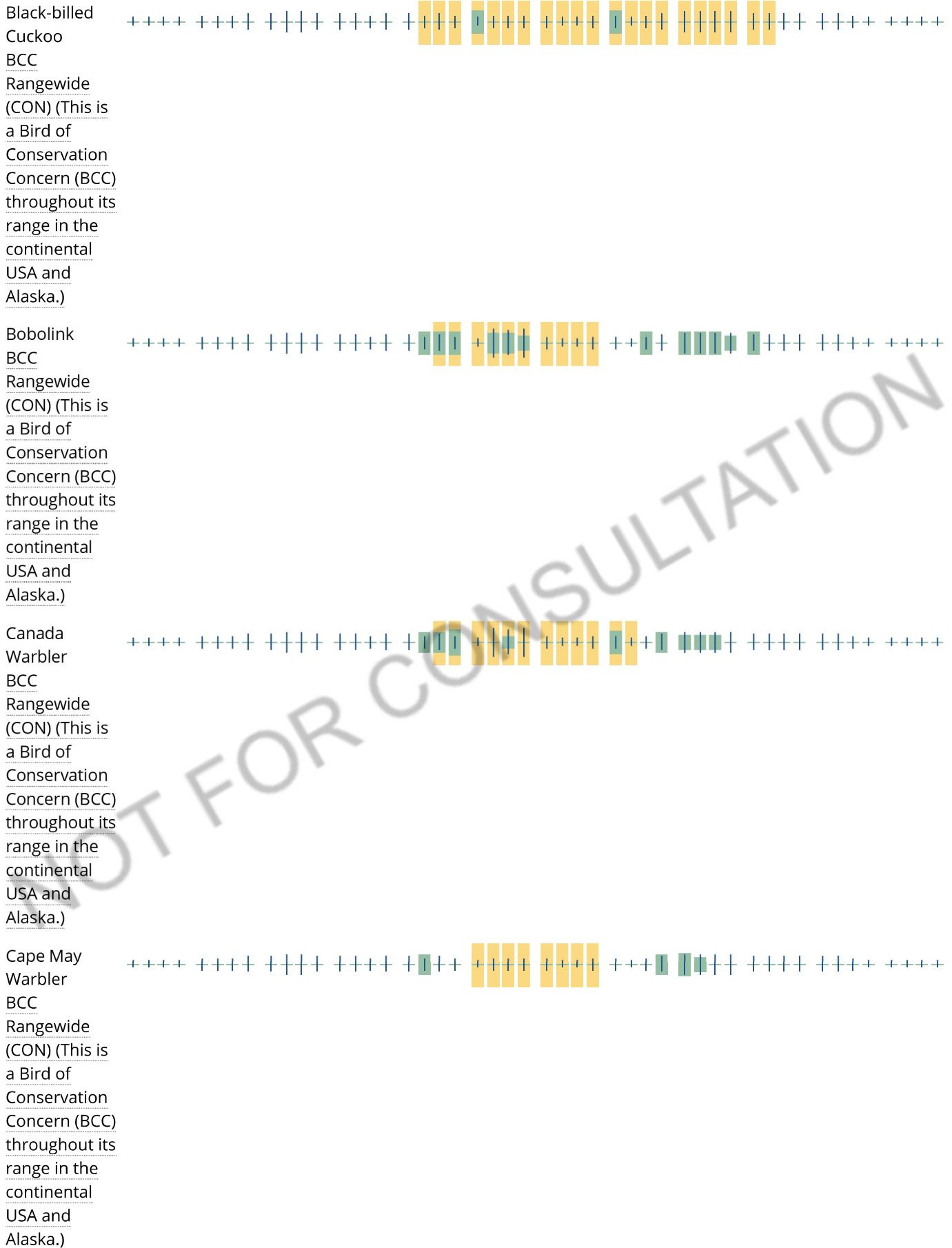
No Data (—)

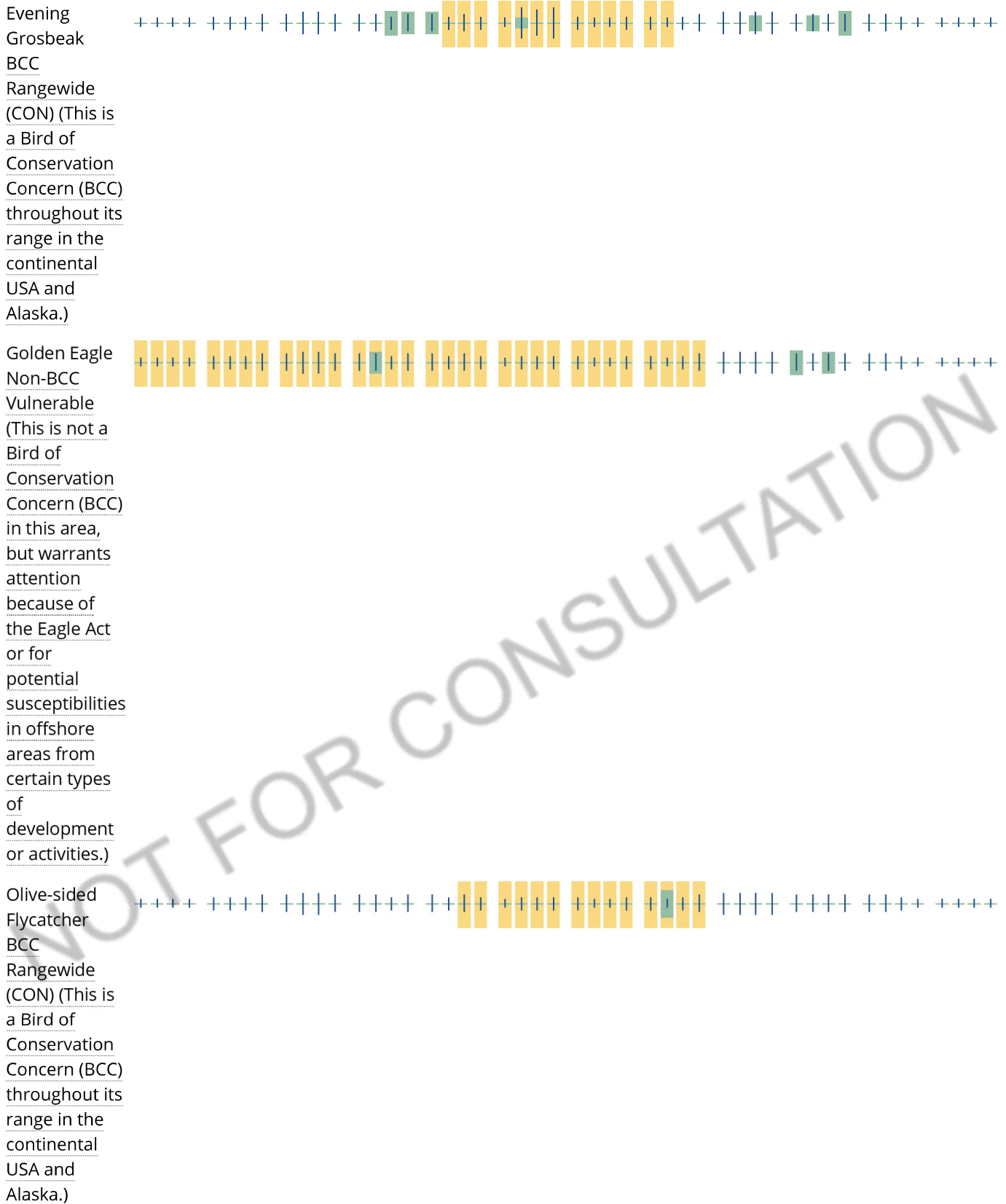
A week is marked as having no data if there were no survey events for that week.

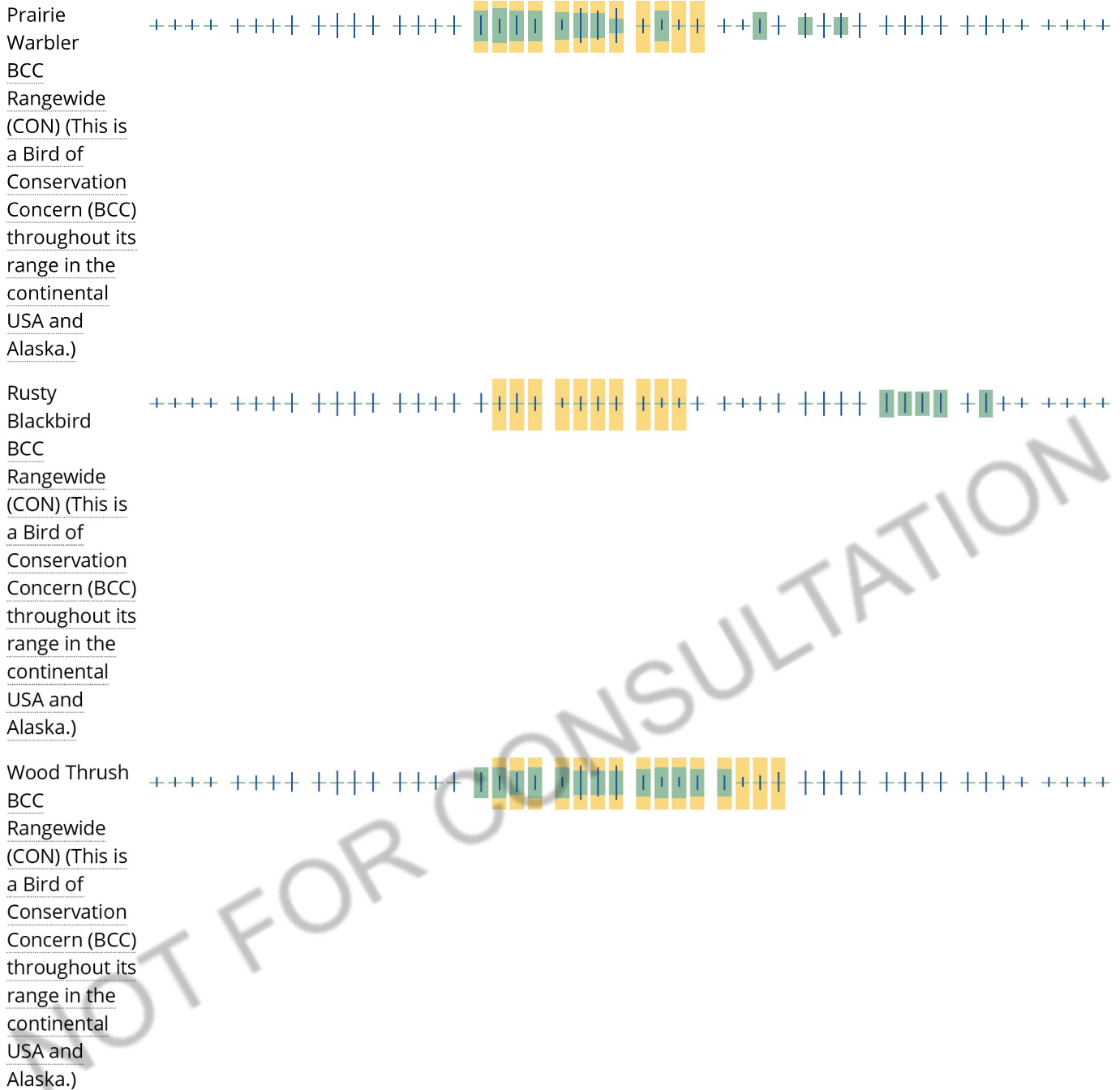
Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or

longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO4C](#)

FRESHWATER POND

[PUBHh](#)

RIVERINE

[R2UBH](#)

[R2USC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



NEW HAMPSHIRE DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT

GEORGE GILMAN
COMMISSIONER

TELEPHONE 603 271-2411

April 2, 1981

Thomas A. Tarpey
Project Manager
New Hampshire Hydro Associates
Three Capitol Street
Concord, NH 03301

Dear Mr. Tarpey:

The Department of Resources and Economic Development has no objection to the granting of a license exemption by the Federal Energy Regulatory Commission for development of hydroelectric facilities at the Allied Leather Dam on the Contoocook River in Penacook, New Hampshire.

Based upon the application received March 5, 1981, it has been determined that:

About one quarter of a mile downstream from the project site is a one acre island at the confluence of the Contoocook and Merrimack rivers which is the location of the Hannah Dustin Monument. This is a granite statue and historical marker commemorating the story of a colonial women who overcame her Indian captives by killing them, and who then escaped up the Merrimack River. The statue and landscaped site around it is managed by the Division of Parks and Recreation, NH Department of Resources and Economic Development. The site is potentially eligible for the National Register of Historic Places. The proposed project does not appear to affect this site in any way. However, project planning, management and operation should insure that there are no adverse impacts upon the Hannah Dustin Memorial Site.

The proposed project will have no effect upon state or local outdoor recreation projects or sites funded in part by the federal Land and Water Conservation Fund program.

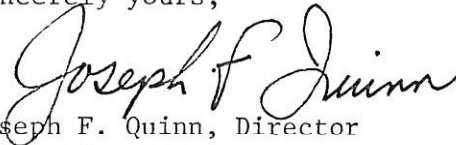
The proposed project will have no effect upon architectural, historical, archeological, or other cultural resources within the project area on the National Register of Historic Places, or potentially eligible for the National Register. Should such resources be discovered as a result of project planning or implementation, appropriate surveys, determinations of National Register eligibility, redesign, protective mitigative, salvage, or other measures should be undertaken according to 36 CFR 800 and other federal laws and regulations. However, it is requested that 8x10 black & white photographic documentation (general views and close-ups) of the dam, bridge abutments, and control gate be sent to the Historic Preservation Office with plans of earlier facilities to complete the historical record for the project site.



Thomas A. Tarpey, from J. Quinn for Commissioner Gilman, April 2, 1981, page 2

Your incorporation of these comments into the application material submitted to the Federal Energy Regulatory Commission will be appreciated.

Sincerely yours,

A handwritten signature in cursive script, reading "Joseph F. Quinn". The signature is written in dark ink and is positioned above the typed name and title.

Joseph F. Quinn, Director
Recreation Services
for Commissioner George Gilman
NH State Historic Preservation Officer

JFQ;gwh

cc: NH State Historic Preservation Office

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED
OCT 22 2020

DHR Use Only	
R&C #	12178
Log In Date	10, 22, 20
Response Date	10, 29, 20
Sent Date	11, 3, 20

Request for Project Review by the New Hampshire Division of Historical Resources

- ☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Penacook Lower Falls Hydroelectric Project

Project Location 2 Commercial Street

City/Town Boscawen Tax Map 183C and 183D Lot # 44 and 149

NH State Plane - Feet Geographic Coordinates: Easting 1003079 Northing 286376.524
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) Federal Energy Regulatory Commission
(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference # License No. 3342

State Agency and Contact (if applicable)

Permit Type and Permit or Job Reference #

APPLICANT INFORMATION

Applicant Name Briar Hydro Associates

Mailing Address 55 Union Street, 4th floor Phone Number 617-367-0032

City Boston State MA Zip 02108 Email sburge@essexhydro.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Sheila Burge

Mailing Address c/o Essex Hydro Associates, L.L.C. Phone Number 6173670032

City Boston State MA Zip 02108 Email sburge@essexhydro.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.labash@dnrc.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and R&C FAQs for guidance.)
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.)
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 10/20/2020.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☒ Yes ☐ No

If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): 38

- ☒ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☒ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

- ☐ **Insufficient information to initiate review.** ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☒ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments:

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature:

Nadine Melton, DSHPO

Date:

10/29/2020