

**REVIEW OF APPLICATION**  
**OF THE HUNTS POND HYDROELECTRIC FACILITY LIHI #125**  
**FOR CERTIFICATION**  
**BY THE LOW IMPACT HYDROPOWER INSTITUTE**

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**I. INTRODUCTION**

The Hunts Pond Dam Project (“the Project”) is located on the Millers River in the town of Winchendon, in Worcester County Massachusetts (Figure 1). The Project is owned and operated by Winchendon Hydroelectric, LLC (the Applicant) a Massachusetts limited liability company. The Project has a current nameplate capacity of 100 kW (0.1 MW). The Project was first granted LIHI certification in 2015. The 2015 Certification expired on September 8, 2020. The Applicant submitted their initial recertification materials in August 2020. On September 11, 2020 the Applicant was granted an extension of their Certificate to January 31, 2021. On January 22, 2021 the Applicant was granted a second certification until May 15, 2021. The applicant completed their recertification application on January 11, 2021. The Applicant is seeking a LIHI 5-year certification term.

On March 5, 2020, LIHI notified the Applicant of upcoming expiration of the Low Impact Hydropower Institute certification for the Project. The notification included an explanation of procedures to apply for an additional term of certification under the 2<sup>nd</sup> Edition LIHI Handbook, including the new two-phase process starting with a limited review of a completed LIHI application, focused on three questions:

- (1) Is there any missing information from the application?
- (2) Has there been a material change in the operation of the certified facility since the previous certificate term?
- (3) Has there been a change in LIHI criteria since the Certificate was issued?

If the answer to any question is “Yes,” the Application must proceed through a second phase, which consists of a more thorough review of the application using the LIHI criteria in effect at the time of the recertification application. The letter noted that because the new Handbook involves new criteria and a new process, all projects scheduled to renew in 2017 and beyond will be an automatic ‘YES.’ Therefore, all certificates applying for renewal in 2017 will be required to proceed through both Phase one and Phase two of the recertification application reviews.

The 2015 LIHI Certificate #125 included one condition shown below. The Applicant has demonstrated compliance with Condition 1 with their annual status report findings. To date, no passage has been requested by resource agencies.

**Condition No. 1.**

Within 30 days of LIHI Certification approval, the facility owner shall provide a letter to LIHI that commits to upstream and downstream passage protections for American Eel if and when such fish passage mitigation is determined to be necessary by the Massachusetts Division of Fish and Wildlife and/or US Fish and Wildlife Service.

Since the Applicant is recertifying the Project, there have been no material changes, and they have remained in compliance with their previous recertification condition, this recertification report warrants a shortened format.

**II. PROJECT’S GEOGRAPHIC LOCATION**

The Project is located on the mainstem of the Millers River at river mile 37.9 in the town of Winchendon, in Worcester County, Massachusetts. The Project is located in the middle of a series of dams on the Millers River. There are three dams upstream and six dams downstream of the Project. Whitney Dam (a non-powered dam,) is approximately 0.5 miles upstream and Tannery Dam (P-8895) is approximately 0.3 miles downstream. The Millers River is over 50 miles long, fed from tributaries in Rindge and New Ipswich, New Hampshire and Lake Monomonac an artificial lake that straddles the border between Rindge, New Hampshire, and Winchendon, Massachusetts, and numerous ponds feeding the main stem on its way to confluence with the Connecticut River. Figure 1 provides an overview of the Project’s location and area features.

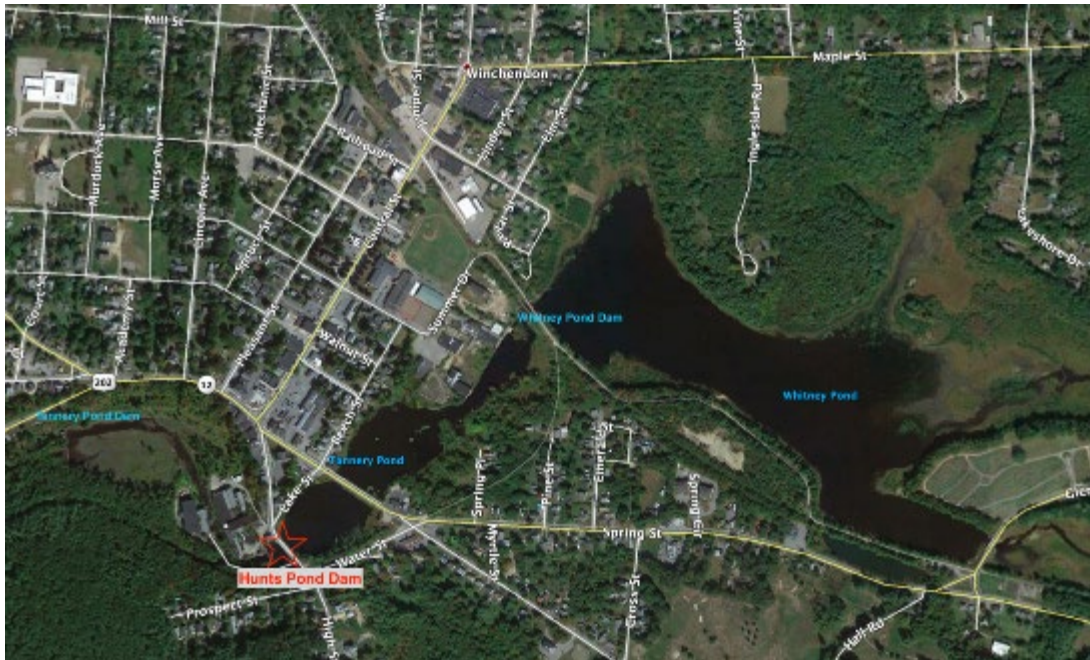


Figure 1-Project Location

### III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

The Hunts Pond Dam creates an average 7.5-foot deep, 120-acre impoundment that is 2,081 feet long, with a normal surface elevation of 954.4 feet USGS datum. The impoundment extends approximately 2,081 feet upstream of the dam, in an easterly direction; the maximum surface area is approximately 13 acres and storage capacity of 120 acre-feet. The drainage area at the facility is 54 square miles.

The Hunts Pond Dam is 184 feet long and 16 feet high, built of concrete in 1936. The concrete intake structure is approximately 25 feet long operated with a steel headgate and 1" spaced trash racks. In 2013 a FERC Exemption Amendment allowed for the installation of a Kaplan turbine and 100 KW nameplate generator in 2015. No design changes to the dam or intake structures were required for the new Kaplan unit. The powerhouse was built in 1985. Figure 2-Project Features shows the dam, powerhouse, and tailrace.

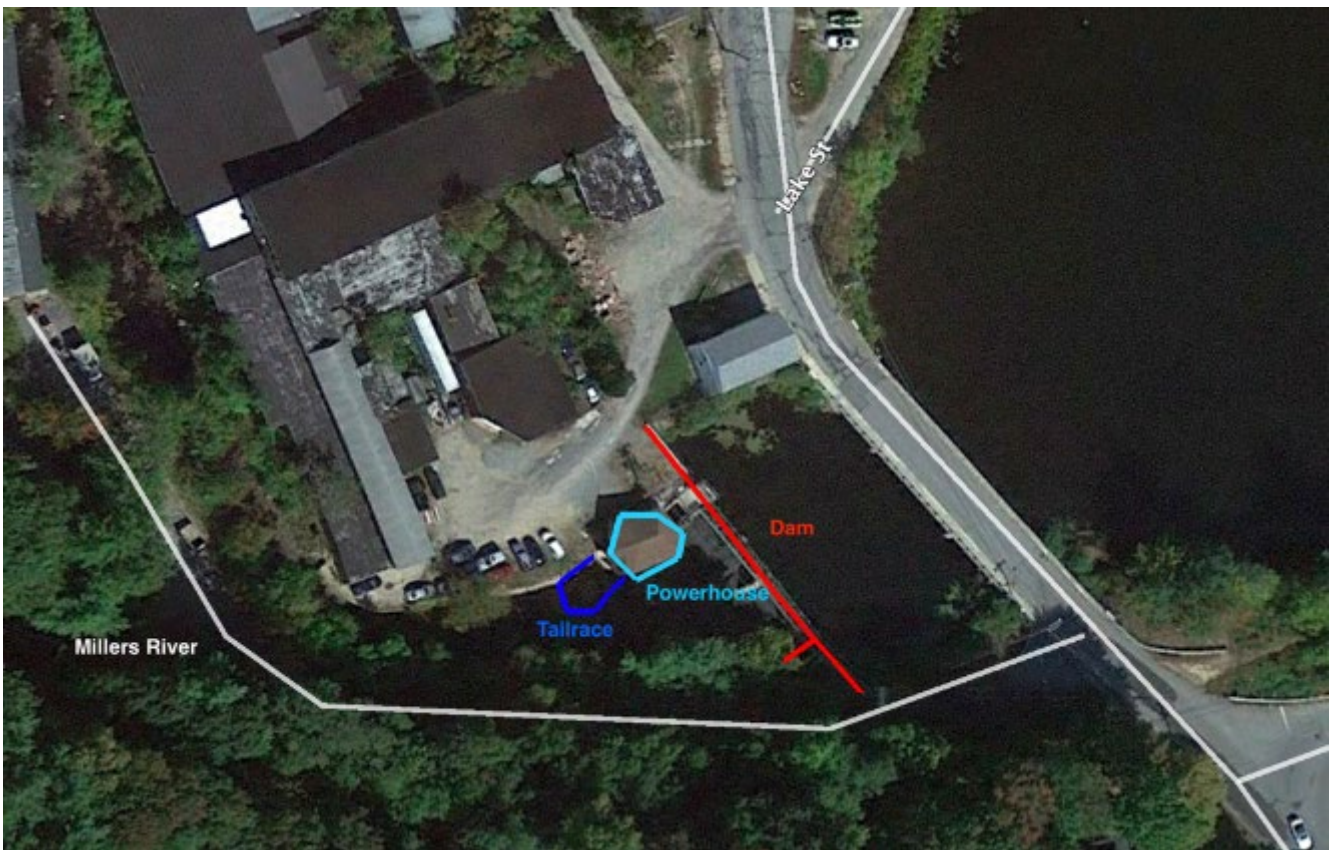


Figure 2-Project Features



The Hunts Pond elevation is controlled automatically by a PLC (Programmable Logic Controller) system, allowing the facility to operate in a run-of-river mode and maintain the minimum flow requirements (25 CFS or inflow.) The PLC enables the opening or closing of the modulating intake wicket gates automatically, regulating flow to the two cross flow turbines.

*Project Photos*



*Figure 3-Hunts Pond Dam and Powerhouse*



*Figure 4-Hunts Pond Dam*



*Figure 5-Hunts Pond Tailrace*

#### IV. ZONES OF EFFECT

The Project consists of two Zones of Effect, 1-Impoundment and 2- Tailrace/Downstream. The position of the powerhouse approximately 50 feet below the dam could be interpreted to constitute a short bypass. The US Fish and Wildlife Service stated in 2015 “The project has a short 50-foot-long bypass reach. Due to the short length of the reach and backwatering from the tailrace, no dedicated flow is required to be spilled over the dam.” This was also supported by Massachusetts Division of Fish and Wildlife in a 2015 correspondence “As the project operates as Run of River and has no significant bypass reach it is in compliance with flow recommendations.” The turbine discharge into the river creates an entrained flow within the backwatered area to the toe of the dam. Together with leakage and instantaneous minimum flow notches at the dam, the water within this area is well circulated and therefore for purposes of this review there is no bypass reach.

Figure 1 illustrates the Zones of Effect (ZoEs) and Table 1-LIHI Standards by Criterion exhibits the Alternative Standards selected by each ZoE. The Applicant demonstrated an appropriate Standard selection for each Zone and Criteria, with the exception of criterion D – Downstream Passage where this review finds Standard 1 can be used in Zone 2.

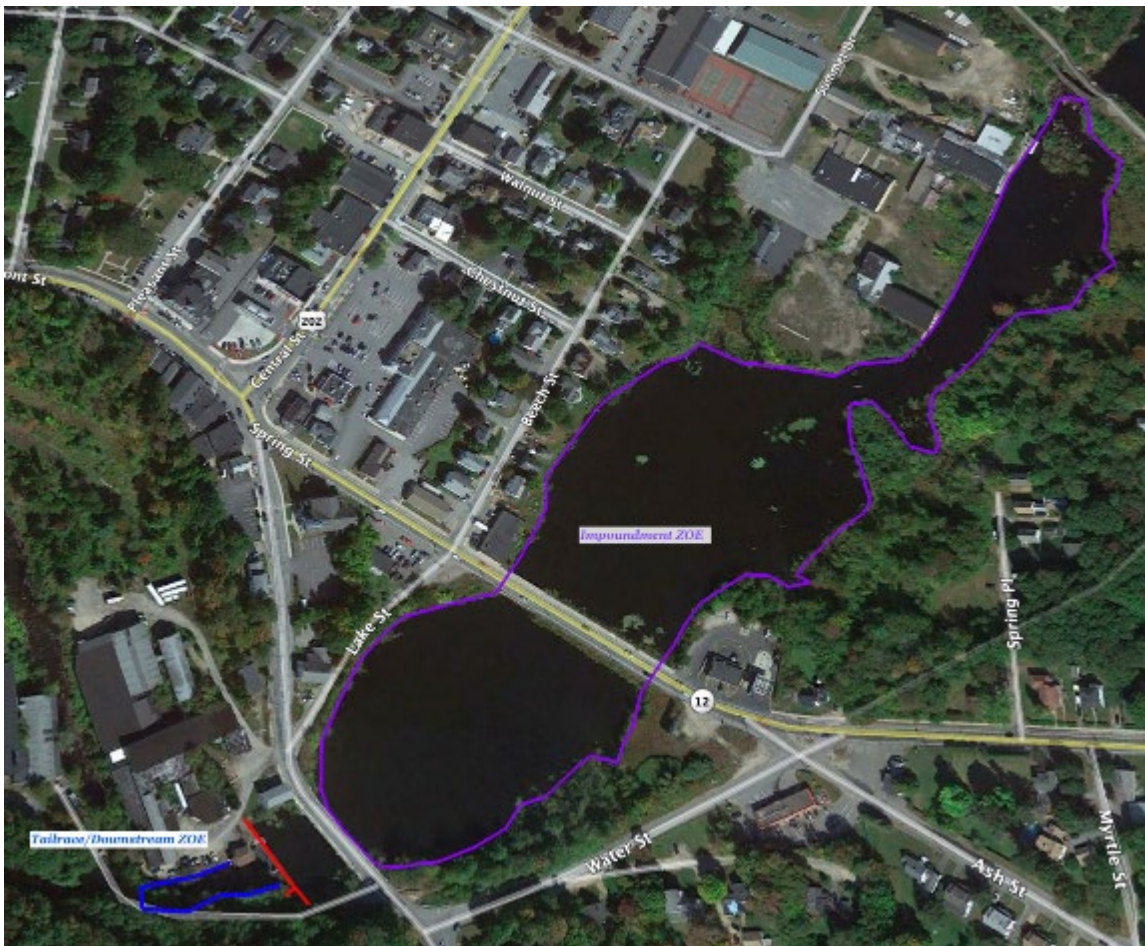


Figure 6-Zones of Effect

**Table 1-LIHI Standards by Criterion**

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

**V. REGULATORY AND COMPLIANCE STATUS**

The FERC Exemption P-8012 was issued February 19, 1985 for the Project which included these US Fish and Wildlife Service terms:

- The facility is operated in a run-of-river mode.
- The tailrace discharge is located at the base of the dam, thus there is no bypassed reach channel. The exemption requires an instantaneous minimum release of 25 cfs (historical median August flow) or inflow to the project; whichever is less.
- Fish passage is required when prescribed by US Fish and Wildlife Service and/or the Massachusetts Division of Fish and Wildlife.

The FERC Exemption was amended on June 27, 1991 that allowed for an increase in capacity from 120 kW to 320 kW. FERC records indicate the Project went offline in February 1993. The owner at the time, Behrens Energy Systems, fell into bankruptcy shortly thereafter. The increased capacity for the Project was never installed.

The Project was purchased from bankruptcy by O'Connell Development Inc. in 1996. O'Connell repaired the existing units, updated the control system, and returned the plant to operating condition. The Project is now owned by Winchendon Hydroelectric, LLC ("WH"), a wholly owned subsidiary of O'Connell. The owner amended its FERC Exemption again on August 22, 2013 following the receipt of a Massachusetts Clean Energy Center (CEC) Grant. The FERC Exemption Amendment reflected reducing the permitted installed capacity of 320 kW with a Kaplan unit rated at 100 kW. A condition of the Massachusetts CEC Grant was a requirement for LIHI Certification. Following the 2013 FERC Exemption Amendment, the owner filed its application for LIHI Certification. The effective LIHI Certification date was September 8, 2015. The Project was renovated in accordance with the terms of the 2013 FERC Exemption Amendment, Massachusetts CEC Grant and the previous LIHI Certification. The project returned to operation in 2015. On May 2, 2017 the owner filed with FERC a Stream Flow Compliance Plan for Commission approval in accordance with Paragraph E of the Order Amending Exemption for Project #8012-MA, Hunts Pond Dam. The Flow Monitoring Plan dated January 26, 2016 incorporated comments prepared and subsequently approved by the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife

The Applicant provided demonstration of regulatory agency outreach. The Applicant received comments from the US Fish and Wildlife Service, Massachusetts Division of Fisheries and Wildlife, Massachusetts Department of Environmental Protection. The applicant reached out to the Winchendon Historical Society but did not receive comments.

The US Fish and Wildlife Service comments received in 2013 and again in 2020 demonstrated that the Project is in compliance for fish passage due to multiple barriers up and downstream of the project limiting access to the Project itself. Refer to Appendix II of the LIHI application. The Massachusetts Department of Environmental Protection provided comments in 2013 and again in 2020, in Appendix III of the LIHI application. The Massachusetts Department of Environmental Protection stated they have no new requirements for the Project, and they concurred with the Massachusetts Division of Fisheries and Wildlife comments, which also stated they have no new requirements for the Project, in Appendix IV of the LIHI application.

The Applicant's regulatory outreach and response is sufficient to not warrant further outreach by the reviewer. The FERC E-library was reviewed for the last five years since the original LIHI Certificate was issued. The E-library established the Project has no outstanding compliance issues integral to recommending LIHI recertification. It was noted that the Applicant filed the Stream Flow Compliance Plan for Commission approval in accordance with Paragraph E of the Order Amending Exemption for Project #8012-MA, Hunts Pond Dam on May 2, 2017. There is no record in the FERC E-Library of the Commission issuing an approval. It is recommended that the Applicant provide documentation of Commission approval if they have it. If they do not, it is recommended that the Application request FERC to approve the plan and provide evidence of that approval to LIHI (see Section VIII below).

## **VI. PUBLIC COMMENTS RECEIVED OR SOLICITED BY LIHI**

A 60-day public notice was provided to stakeholders and the state and federal agencies on February 23, 2021 which concluded on April 24, 2021. No comments were received. No additional outreach was made to regulatory agencies nor project stakeholders as the application presented sufficient evidence in meeting the LIHI recertification standards without verification.



## VII. DETAILED CRITERIA REVIEW

The Applicant selected the same LIHI standard for each Zone of Effect. Therefore, the discussion below applies to both the Zone 1-Impoundment and Zone 2-Tailrace/Downstream

### A. Ecological Flow Regimes

Goal: The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.

The Applicant selected Standard A-1, Not Applicable / De Minimis Effect for both ZoEs. To meet this Standard, the Applicant must demonstrate there is no bypass reach, the system functions in a run-of-river mode, and for the Impoundment Zone, explain the water management (reservoir fluctuation potential) and how the fish and wildlife habitat within the zone are evaluated and managed.

The Project is operated in an instantaneous run-of-river mode, with virtually no bypass reach. The Applicant has prepared a Stream Flow Compliance Plan that demonstrates their approved flow management procedures. An instantaneous minimum release of 25 cfs (historical median August flow) or inflow is provided.

To meet the 2013 FERC Amended Exemption requirement for “instantaneous run-of-river mode, the Project has cut four 60-inch-wide notches with inverts one half inch below the head pond level. This allows for 0.5 cfs at all times. The balance of the minimum flow is provided through generation 10 to 110 cfs or inflow. Above 110 cfs, the maximum turbine hydraulic capacity, excess flows are spilled.

Based on the review of the application and supporting documentation, the Project continues to satisfy the Ecological Flow criterion.

### B. Water Quality

Goal: Water quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for both ZoEs. The Applicant demonstrated compliance with this standard through the documentation of the MADEP email dated 11/20/2020 (LIHI Application Appendix III). The agency concurred with Massachusetts Department of Fish and Wildlife’s email dated October 29, 2020 indicating no new requirements for the Project. The application did not include information on impaired waters in the Project reaches, but a check of the draft Massachusetts 2018/2020 Integrated Waters List<sup>1</sup> (p. 186) indicates that the Project reach (segment MA35-01) from Whitney Pond just upstream to the Winchendon wastewater treatment plan is listed as a Category 5 water requiring a TMDL and impaired for chronic aquatic toxicity, lack of a coldwater assemblage, and temperature. Whitney Pond itself is impaired for mercury in fish tissue, turbidity, and aquatic plants (p. 188). Given the nature of the impairments and run-of-river operation, the Project is unlikely to affect water quality in the river.

Based on the review of the application and supporting documentation, the Project continues to satisfy the Water Quality criterion.

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<sup>1</sup> <https://www.mass.gov/doc/draft-massachusetts-integrated-list-of-waters-for-the-clean-water-act-20182020-reporting-cycle/download>



### **C. Upstream Fish Passage**

Goal: The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the facility.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for both ZoEs. The Impoundment ZoE requires the Applicant to demonstrate why the facility does not present a barrier to upstream fish passage. Impoundment zones by default qualify (with the rare exception) for this standard as once above a dam there is no further facility-related barrier to upstream fish movement. No evidence is therefore required by the Applicant to demonstrate meeting this Standard.

The Applicant provided evidence for the Tailrace/Downstream ZoE for this Standard by demonstration of US Fish and Wildlife Service correspondence dated 12/9/2020 stating only American eel are present in the river but well downstream due to barriers between this Project and where eels are located. Other migratory species could have formerly been present including Atlantic salmon, American shad, blueback herring and sea lamprey based on current fish counts at Turners Falls ([https://www.fws.gov/r5crc/pdf/fish-counts/CT-River-Fishway-Count-Rpt-12\\_30\\_19.pdf](https://www.fws.gov/r5crc/pdf/fish-counts/CT-River-Fishway-Count-Rpt-12_30_19.pdf)), but again there are numerous downstream barriers that pre-date this facility and prevent all migratory species from reaching Hunts Pond.

The FERC Exemption includes Standard Article 2 which requires the Project to comply with any terms and conditions of federal and state fish and wildlife agencies. To date, no agencies have requested upstream fish passage.

**Based on the review of the application and supporting documentation, the Project continues to satisfy the Upstream Fish Passage criterion.**

### **D. Downstream Fish Passage**

Goal: The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by facility operations. Migratory species can successfully complete their life cycles and maintain healthy populations in the areas affected by the facility.

The Applicant selected Standard 2, Agency Recommendation, for the both the Impoundment and Tailrace/Downstream ZoE (although downstream zones typically can select Standard 1, Not Applicable / De Minimis Effect) which requires the Applicant to demonstrate a proceeding and source, date, and specifics of the agency recommendation applied, explain the scientific or technical basis for the agency recommendation, including methods and data used, and/or describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

The FERC Exemption includes Standard Article 2 which requires the Project to comply with any terms and conditions of federal and state fish and wildlife agencies. To date, no agencies have requested downstream fish passage. Resident fish species in the Millers River include rainbow trout (stocked), brown trout, and brook trout

along with smallmouth bass, rock bass, bluegill, pumpkinseed, redbreast sunfish, fallfish, and common shiner. None of these species typically require passage to complete their lifecycles.

The Applicant provided sufficient evidence for this Standard by demonstrating through correspondence with US Fish and Wildlife Service that the existing barriers in the Millers River do not warrant fish passage at the Project at this time. See LIHI Application Appendix II for source documentation.

**Based on the review of the application and supporting documentation, the Project continues to satisfy the Downstream Fish Passage criterion.**

#### **E. Shoreline and Watershed Protection**

**Goal:** The facility has demonstrated that sufficient action has been taken to protect, mitigate or enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for the Impoundment and Tailrace/Downstream ZoE which requires the Applicant to demonstrate there are no lands with significant ecological value associated with the facility and/or document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

The Applicant provided sufficient evidence demonstrating there are no lands associated with the facility under the direct or indirect ownership or control of the facility owner that have been identified as having significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and the facility is not subject to any Shoreline Management Plan (SMP) or similar protection plan

**Based on the review of the application and supporting documentation, the Project continues to satisfy the Shoreline and Watershed Protection criterion.**

#### **F. Threatened and Endangered Species Protection**

**Goal:** The facility does not negatively impact federal or state listed species.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for the Impoundment and Tailrace/Downstream ZoEs which requires the Applicant to demonstrate there are no listed species in the facility area or affected riverine zones downstream, or if listed species are known to have existed in the facility area in the past but are not currently present, the facility was not the cause of the extirpation of such species, or if the facility is making significant efforts to reintroduce an extirpated species, describe the actions that are being taken.

The Applicant provided sufficient evidence for this Standard by demonstrating their search of the USFWS IPaC resulting in the potential for the Northern long-eared bat (Threatened status) to be present in the Project vicinity, but the Project itself does not provide suitable habitat. In addition, the Applicant provided evidence from the Massachusetts Oliver mapping tool that there are no state-listed priority habitats for sensitive species in the Project area.

Based on the review of the application and supporting documentation, the Project continues to satisfy the Threatened and Endangered Species Protection criterion.

### **G. Cultural and Historic Resource Protection**

Goal: The facility does not unnecessarily impact cultural or historic resources that are associated with the facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for the Impoundment and Tailrace/Downstream ZoEs which requires the Applicant to demonstrate there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility and/or document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

The Applicant provided sufficient evidence for this Standard by demonstrating in Appendix F of the original LIHI application documents, the owner's attempts to get input from the MA State Historic Preservation Office, to no avail and that the Project area is not listed on the National Register of Historic Places. However, the adjacent parcel, Mason and Parker Manufacturing Company, as a whole (28 Front St) which includes the Project area is listed in Massachusetts "Inventory of Historic Assets" but the powerhouse and new intake structure were built at the time of FERC exemption at the existing dam and are not yet old enough to become eligible for listing. The dam is not included in the state inventory. <https://mhc-macris.net/Details.aspx?MhcId=WIN.3>. The Applicant also reached out to the Winchendon Historical Society but did not receive comments.

Based on the review of the application and supporting documentation, the Project continues to satisfy the Cultural and Historic Resources criterion.

### **H. Recreational Resources**

Goal: The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.

The Applicant selected Standard 1, Not Applicable / De Minimis Effect for the Impoundment and Tailrace/Downstream ZoEs which requires the Applicant to demonstrate the facility does not occupy lands or waters to which the public can be granted safe access and does not otherwise impact recreational opportunities in the vicinity of the facility.

The Applicant provided sufficient evidence for this Standard by demonstrating that the Project cannot provide safely accessible recreation facilities located in the very limited Project boundary.

## VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION

Based on this review, the LIHI Project #125, Hunts Pond Hydroelectric conditionally meets the LIHI Criteria for recertification as a Low Impact Hydropower facility and a new 5-year term is recommended, with the following condition.

**Condition 1:** By December 31, 2021 the facility Owner shall demonstrate FERC's approval of the Stream Flow Compliance Plan dated 1/26/2016 and filed with FERC on May 1, 2017 by submitting to LIHI either a copy of a pre-existing FERC approval as requested in the Plan submittal, or a letter to FERC requesting approval, and the FERC approval issuance within 60 days of receiving it from FERC.