

**REVIEW OF APPLICATION
OF THE DODGE FALLS HYDROELECTRIC PROJECT, LIHI #42
FOR CERTIFICATION
BY THE LOW IMPACT HYDROPOWER INSTITUTE**

Prepared by Peter Drown, Cleantech Analytics LLC
December 18, 2019

I. INTRODUCTION

In November 2018, LIHI notified the Applicant of upcoming expiration in June 2019 of the Low Impact Hydropower Institute certification for the Dodge Falls Hydroelectric Project. The notification included an explanation of procedures to apply for an additional term of certification under the 2nd Edition LIHI Handbook, including the new two-phase process starting with a limited review of a completed LIHI application, focused on three questions:

1. Have there have been changes in LIHI's criteria or review process since the last certification?
2. Have there have been material changes in the Project design or operation, in the affected environment, or in compliance with the current LIHI Certification or with LIHI conditions since the last certification?
3. Is there additional technical information needed to complete a full application review?

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. There have been no material changes at the Project. 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, this Project was required to proceed through both phase one and phase two of the recertification application reviews. This review was conducted in accordance with the 2nd Edition LIHI Handbook, Rev. 2.03 issued December 30, 2018. The review included evaluation of the application materials, FERC elibrary documents from 2014 to present, and other publicly available information.

The Dodge Falls Hydroelectric Project ("Project") was originally certified as "Low Impact" on August 29, 2009, and subsequently re-certified effective June 1, 2014, with a term expiring on June 1, 2019. The current certification was extended to November 1, 2019 and again to December 31, 2019 to allow time for processing the recertification application which was received on September 6, 2019 and supplemented on October 22, 2019. The current certification included the following condition:

Condition 1. *The facility owner shall consult with the NHDES to develop a water quality monitoring plan to define current water quality conditions at the Dodge Falls dam and powerhouse, shall implement that plan, and shall report the results to NH DES and to LIHI within six months of the date of recertification. If the facility is found to be the cause of any violations of state water quality standards, the facility owner shall notify LIHI within 30 days of such a finding and shall develop a remediation plan to correct the violations. LIHI reserves the right to suspend or rescind its certification if successful remediation is not implemented.*

This condition was satisfied in 2017. Essex Hydro Associates collected water quality data in 2014 including dissolved oxygen, water temperature, total phosphorous, and chlorophyll-a and provided it to NHDES. Ted Walsh, Surface Water Monitoring Coordinator for NHDES provided a letter on January 3, 2017 confirming that

the Connecticut River immediately upstream and downstream of the Facility met water quality standards during the conditions during which data was collected.

II. PROJECT'S GEOGRAPHIC LOCATION

The Project is located at River Mile (RM) 268 on the Connecticut River between the towns of Bath, New Hampshire and Ryegate, Vermont (Figure 1). The Connecticut River is the longest river in New England at 410 miles and serves as the boundary between New Hampshire and Vermont. The history of human impact on the Connecticut is primarily focused on dams for industrial development, leading to the growth in the New England economy, and according to American Rivers, the Connecticut remains “among the most extensively dammed rivers in the nation.”

This region in the vicinity of the Project is situated within a landscape of farms and undeveloped woodlands. Forests in this region consists of a mix of maples, birches, elm and basswood with occasional white pine and hemlock. Coniferous forest stands are located northwest of the Project along Manchester Brook, and in the hills on the New Hampshire side of the river.

As with many other regions in New England, the watershed has more forested land today than it did 150 years ago, and with other efforts to improve ecological resources (such as coordinated water releases among the watershed's largest 54 dams and fish ladders at multiple dams,) the river and watershed continue to experience a rebound¹.

The Project is located about 4 river miles downstream from the McIndoes development, the downstream-most facility in the Fifteen Mile Falls Project (LIHI #39), and about 51 river miles upstream of the Wilder Project.

¹ <https://www.americanrivers.org/river/connecticut-river/>

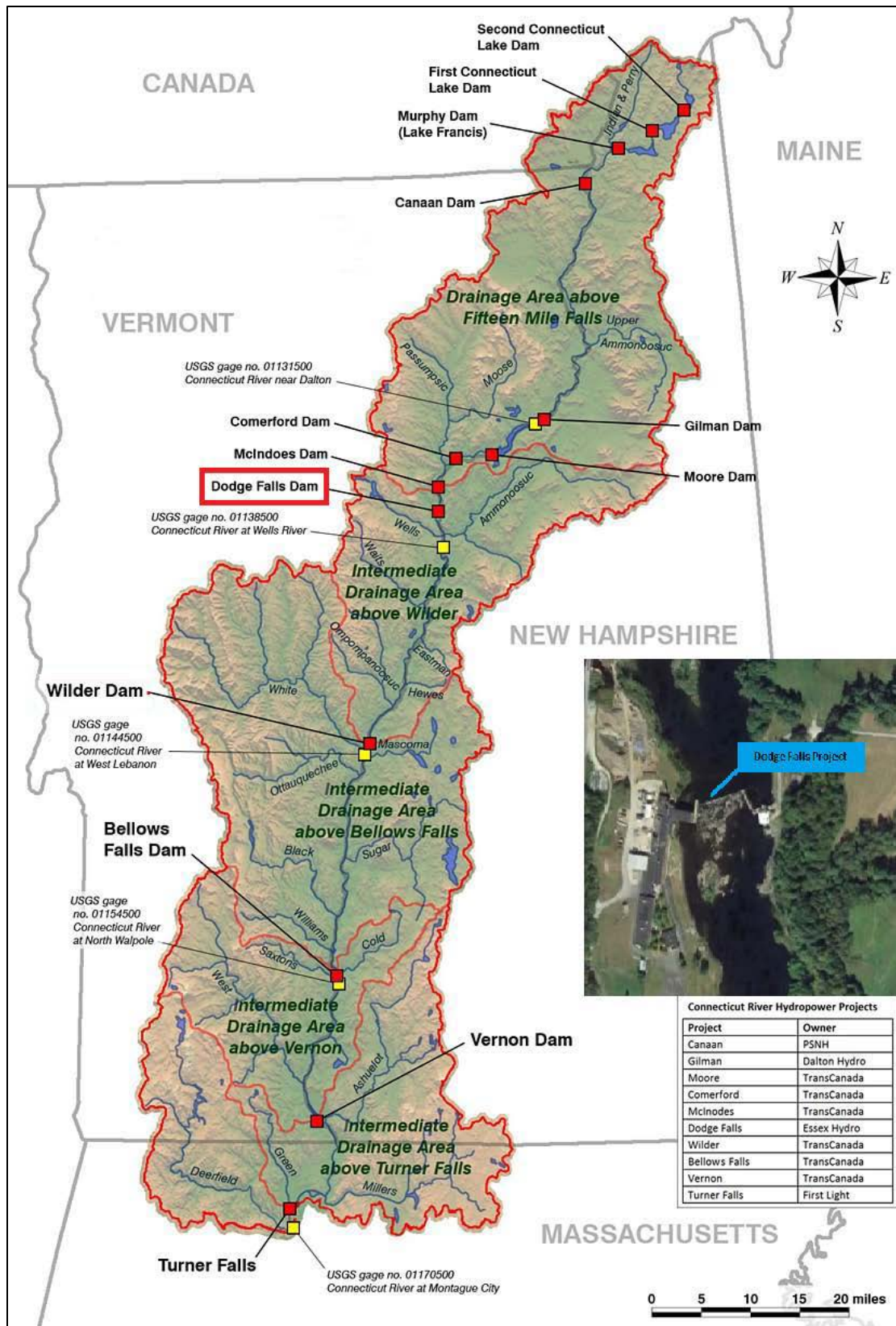


Figure 1 - Dams on Connecticut River Drainage Area

III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

The Dodge Falls Hydroelectric Project is located on the Connecticut River between the towns of Bath, New Hampshire and Ryegate, Vermont. The New Hampshire side (east) of the shoreline consists almost entirely of undeveloped forest, except for the appurtenant structures for the Project and an access road. The Vermont side (west) of the shoreline consists of a paper mill which was shut down in 2001, an access road and appurtenant structures. Upstream and downstream of these structures are primarily undeveloped forest, with cleared pastures and fields in the narrow region between the highway and river, on river terraces some 60-80 feet above the river. Small streams created narrow wooded ravines as they make their way to the Connecticut.



Figure 2 - Dodge Falls Dam

The Project works consist of a grouted, rock fill, timber crib dam about 15.5 feet tall and 485 feet long, originally constructed in 1905. There is also a 75-foot-long concrete spillway on the NH side. Wooden flashboards were replaced in 1993 and 1997 with a 2-foot-tall rubber pneumatic flashboard system on both the dam and spillway. The impoundment extends about 4 miles upstream with a surface area of about 290 acres and a storage capacity of about 4,940 acre-feet. The powerhouse on the NH side contains a single double-regulated Escher Wyse turbine rated at 5 MW. The Project generates about 25,000 MWh annually and is operated in a run-of-river mode with a pond level control system to maintain the impoundment water level. The Project has a minimum flow requirement of 1,108 cubic feet per second (cfs), or inflow if less. Key Project features are shown in Figure 3.

The figure shows what appears to be a bypassed reach on the west bank at the old mill where water was formerly provided to and discharged from the mill. Based on information provided by the Applicant prior to recertification and in the application, all entrances have been sealed and no water passes through that reach. There are gates on the upstream side that remain closed at all times and are likely to be inoperable. Concrete was poured inside the building downstream of the gates to help prevent leakage that used to make its way through to the discharge area.



Figure 3 – Project Features

IV. ZONES OF EFFECT

The Owner selected two zones of effect. Zone one consists of the impoundment, which extends from the Dodge Falls dam upstream approximately four miles to the upstream McIndoes dam, part of the Fifteen Mile Falls Project (LIHI #39). Zone two consists of the tailrace and downstream reach, which extends from the Dodge falls tailrace approximately 51 miles to the downstream Wilder dam. In my opinion, the downstream zone of impact should only extend to the towns of Haverhill, New Hampshire (a few miles downstream). At that point, the confluence of the Ammonoosuc River and islands in the Connecticut River would likely impact flows more than the run-of-river operations at Dodge Falls. My review focuses on this modified zone. The Applicant selected the standards shown in Figure 4 below and I concur with those selections.

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 –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			

Figure 4 - Applicant's selected Zones of Effect

V. REGULATORY AND COMPLIANCE STATUS

The Dodge Falls Project was originally constructed to provide power to the adjacent paper mill, which it did until 1966. From 1966 to 1990, the Project was used to supply process water to the mill. Between the early 1980s and 1990, hydropower was explored at the site and the Federal Energy Regulatory Commission (FERC) initially issued an exemption in 1982 for a Project to be located on the New Hampshire side of the river but that proceeding was abandoned. A subsequent exemption proceeding proposed a powerhouse located on the Vermont side and on June 11, 1984 FERC granted the exemption. The planned location of the powerhouse was later moved back to the New Hampshire side of the river, and there were no objections from environmental agencies or FERC and the work was approved with no required amendment to the exemption. The Project began operation in 1990 and the exemption was amended in 1993 to allow the owner to replace a section of the wooden flashboards with an inflatable rubber dam and that amendment was amended again in 1993 by FERC to correct the Project description. In 1997, the Applicant requested another amendment to replace the remainder of the flashboards with the rubber dam, and FERC allowed the change without amendment. The Project received Section 401 Water Quality Certifications (WQC) from both Vermont and from New Hampshire issued in 1986, and 1985, respectively as part of the exemption process. The Project was most recently inspected by FERC on September 17, 2019, and was noted to be in generally satisfactory condition, with only minor follow up items needed. There have been no additional regulatory or compliance issues documented on the FERC e-library since the Project's most recent LIHI certification in 2014.

VI. PUBLIC COMMENTS RECEIVED OR SOLICITED BY LIHI

The application was posted for public comment on October 14, 2019. No comments were received during the 60-day comment period which ended on December 13, 2019. No additional outreach to resource agencies or stakeholders was deemed necessary.

VII. DETAILED CRITERIA REVIEW

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 for both zones. The powerhouse is located on the New Hampshire side of the river with a 75-foot concrete spillway constructed on the right side of the forebay. The spillway is connected to the original timber crib dam that spans the river. There are no bypassed reaches at the facility. While the timber crib dam connects to a mill building on the Vermont side of the river, all entrances into the mill have been sealed, making the upstream side of the mill effectively part of the dammed area and the downstream side effectively part of the tailrace.

The Project is operated as a run-of-river facility. Impoundment level is maintained by means of a pond level control system. River flow is passed through the turbine or over the pneumatic flashboards. The Project is required to maintain a minimum flow of 1,108 cfs, which is equivalent to 0.5 cubic feet per second per square mile of drainage, or inflow, whichever is less. The minimum flow was based on the summertime New England Aquatic Base Flow methodology.² The McIndoes development of the Fifteen Mile Falls Project is located

² https://pubs.usgs.gov/wri/wri034332/pdf/wrir034332_ver1.2.pdf

approximately 4 miles upstream of the Project and available river flow for the Dodge Falls Project is determined by the discharge from McIndoes. That Project was relicensed in 2002 with seasonally varying minimum flows from McIndoes of 1,105 cfs from June 1 to September 30, 2,210 cfs from October 1 to March 31, and 4,420 cfs from April 1 to May 31, or inflow if less.

The Applicant filed annual minimum flow certification letters with FERC until 2015 when FERC determined that such letters were no longer necessary; however, reporting of any flow deviations is still required. No deviations have been reported to FERC since that time. The Applicant submitted annual operating data on September 16, 2019 to the Vermont Department of Environmental Conservation (VDEC) to confirm run-of-river operations. VDEC often requests such data during LIHI recertification and the Applicant was proactive in submitting it. On November 5, 2019 VDEC sent an email to the Applicant and LIHI (Appendix A) concurring that the Project is operating as required.

Based on the review of the application, supporting documentation, and other publicly available information the Project continues to satisfy the Ecological Flows 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 B-3, Site-Specific Monitoring Studies for both zones. In the vicinity of the Project, the Connecticut River is classified as a Class B water by both Vermont and New Hampshire. Class B waters are acceptable for fishing, swimming, and other recreation purposes and for water supply after suitable treatment. Neither of the EPA-approved New Hampshire or Vermont lists of Impaired Waters^{3,4} indicate that the Connecticut River is impaired in the Project area. There is however a new England-wide impairment and TMDL for mercury due to air deposition.

Water quality monitoring was conducted in 2014 at the request of NH Department of Environmental Services (NHDES) as part of the last LIHI recertification. Monitoring included continuous samples of dissolved oxygen, water temperature over a 10-day summertime low flow period, and grab samples of total phosphorus and chlorophyll-a. In a 2017 letter to LIHI, NHDES confirmed that based on the sampling, water quality in the Project vicinity meets water quality standards. The state boundary is the historical low-water mark on the Vermont side of the river, thus the Project primarily occupies NH waters, so the NH confirmation was deemed sufficient to verify the Project's status relative to water quality.

Project operations have not changed since the last LIHI recertification, and the river is not impaired in the vicinity. Therefore, based on the review of the application, supporting documentation, and other publicly available information the Project continues to satisfy the Water Quality criterion.

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, sustainable fish and wildlife resources in areas affected by the facility.

³ <https://www.des.nh.gov/organization/divisions/water/wmb/swqa/2016/index.htm>

⁴ <https://www.epa.gov/sites/production/files/2019-02/documents/2018-vt-303d-list-report.pdf>

The Applicant selected Standard C-1, Not Applicable/De Minimis for both zones. Other than American eel, there are no migratory species present. Historically, Atlantic salmon may have been present, but dams constructed earlier well downstream of Dodge Falls created barriers to passage. A trap and truck facility for Atlantic salmon to be installed by 1992 was requested by resource agencies during exemption proceedings. In 1990, the US Fish and Wildlife Service (FWS) sent a letter that acknowledged that it was not necessary to install the fish trap facility unless notified of a need to do so in the future.

Upstream fish passage is tied to the passage of fish through the downstream Wilder Project which is the nearest downstream dam. It has an upstream fish ladder, but operation is dependent on passage of adult Atlantic salmon at Bellows Falls, the next downstream dam. The Wilder fish ladder has not operated for the last several years since no salmon had passed upstream of Bellows Falls. The long-running Connecticut River Atlantic salmon restoration program was terminated in 2012 so few if any salmon are expected to return to the downstream dams in the future and upstream passage for salmon at Dodge Falls is no longer needed.

It is possible that some American eels may be present in the Connecticut River and tributaries. The Applicant contacted NH Fish and Game (NHFG) in July 2019 and received an email response on July 26, 2019 that reported a very low density of eels above Wilder and stated that upstream passage is not warranted for Dodge Falls unless and until passage improvements are made at the downstream dams and the eel population increases in the upper watershed (see recertification application).

Based on the review of the application, supporting documentation, and other publicly available information 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. All migratory species can successfully complete their life cycles and to maintain healthy, sustainable fish and wildlife resources in the areas affected by the facility.

The Applicant selected Standard D-2, Agency Recommendation in the impoundment zone and Standard D-1, Not Applicable/De Minimis in the downstream zone since there is no facility-related barrier to downstream passage below the dam.

As noted above, after cessation of the Atlantic salmon program the only migratory species that could be present is American eel. The Applicant provided information on resident fish species in an application supplement. The information was retrieved from the NH Fish Survey Map⁵ which reports the following fish species upstream of the Project: banded killifish, bluegill, white sucker, fallfish, longnose dace, smallmouth bass, tessellated darter, and yellow perch.

Downstream fish passage was installed at the Project at the time of construction in accordance with agency prescriptions. Passage facilities consist of a steel collection box with a slide gate that allows water to flow through a 24-inch pipe that discharges to the tailrace. In addition, trashrack clear spacing is 1-inch in the top 10 feet of the rack, and 3 inches in the lower 30 inches of the rack, effectively excluding most fish from becoming

⁵ <https://nhfg.maps.arcgis.com/apps/MapJournal/index.html?appid=d6549e90155b441fa0e29bdc44eebc2b>

entrained. Eels, if present and migrating downstream, could become entrained as they tend to swim near the bottom of the water column.

On February 11, 2016 CRASC notified FERC that following the cessation of the Atlantic salmon stocking program in 2012 it was no longer necessary to provide downstream passage for salmon smolts or adult salmon, barring certain triggers. The downstream passage was not operated in 2016, 2017, 2018, or 2019. Unless requested by an agency, the downstream passage will not be run in the future. The July 26, 2019 email from NHFG also did not indicate a need for downstream passage for resident species.

Based on the review of the application, supporting documentation, and other publicly available information the Project continues to satisfy the Downstream Fish Passage and Protection 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 E-1, Not Applicable/De Minimis for both zones, stating that the Project has no lands of significant ecological value. The land-use cover map for the Project area is shown in Figure 5. The land use in both zones consists primarily of undeveloped woodlands and cleared farmlands, with limited development along the shoreline until the town of Bath just south of the Project and small areas of development in East Ryegate. In addition, no Shoreline Management Plans are required or in place.

The run-of-river and headpond elevation requirements are in place to maintain aquatic and fisheries habitat in the impoundment. As noted in Criterion A, above, the Applicant provided pond level and flow records to the VDEC during the re-certification application and VDEC confirmed that upon review the Project was in compliance with the terms of its certification. Based on the review of the application and supporting documentation the Project continues to satisfy the Shoreline and Watershed Protection criterion.

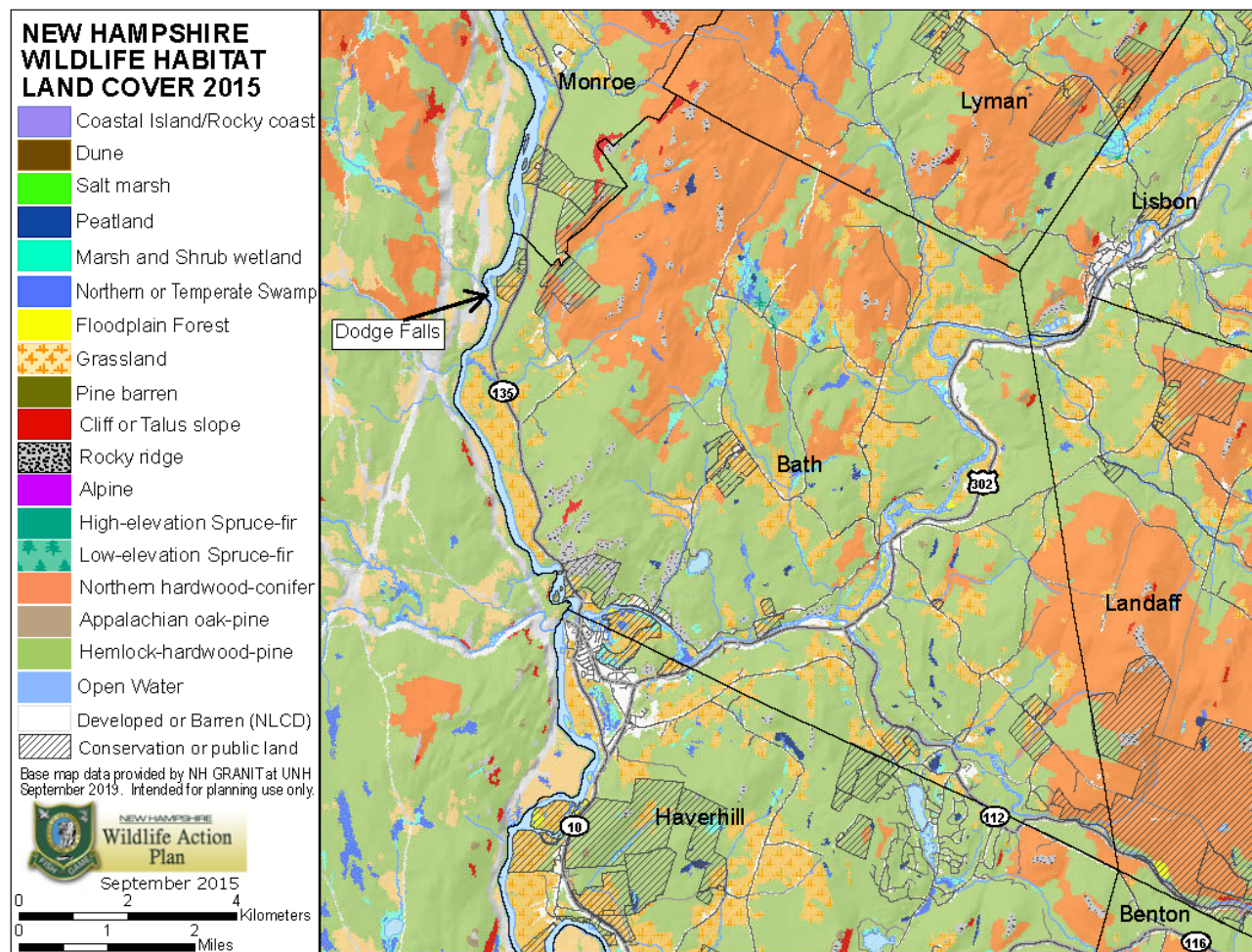


Figure 5 - New Hampshire Land Cover Map

F. Threatened and Endangered Species Protection

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

The Applicant selected standard F-1, Not Applicable/De Minimis, for both zones. The Applicant conducted outreach to several resource agencies to identify any updated threatened and endangered species listings within the Project vicinity and provided the following input:

Northern Long-Eared Bat – this federally-listed species (also listed in NH and VT) was identified as potentially occurring in the vicinity of the Project during an online inquiry in September 2019 to the USFWS iPAC database using the Project map.

USFWS has not designated critical habitat for this species but issued regulations in 2016 under Section 4(d) of the ESA (50 C.F.R. 20161201-5412) § 17.40(o)). Those regulations prohibit incidental take of the species within the zone where white-nose syndrome occurs and related actions that could result in incidental take, such as tree removal (except for removal of hazard trees) within 0.25 mile of a known hibernaculum, or that cuts or destroys

known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree, during the pup season (June 1 through July 31).

As noted in numerous prior LIHI reviews, bat species are typically only impacted when tree clearing occurs. The Applicant stated that they have, at times, cut down dead tree which would have fallen if left alone (Appendix A). I am including a condition that the Applicant follow the Best Management Practices for Hazard Tree Removal contained in the report “Beneficial Forest Management Practices for WNS-affected Bats.”⁶

Dwarf Wedgemussel – The application included a Vermont Department of Fish & Wildlife comment from August 20, 2019 that although the Project area has not been well-surveyed for mussels, a 2005 survey of a site about 1.5 miles downstream of the dam (in zone two) did note that the habitat “seemed excellent for Dwarf Wedgemussel (a federally and state-listed endangered species) and it seemed likely that the species was present somewhere within or near the survey location.” The author of that report responded to an inquiry by LIHI staff stating that more recent surveys have been conducted in this region, and none have expanded the known range of the species in the Middle and Upper macrosites, and he does not believe that the species has been located in the vicinity of Dodge Falls. Based on this communication and the survey results, it does not appear that this species is present in the immediate Project vicinity.

Balsam Groundsel – The New Hampshire Natural Heritage Bureau (NHNHB) provided a letter on October 17, 2019 that documented the state-threatened species balsam groundsel (*Packera paupercula*), *Figure 6*, downstream of the dam on the NH Side of the Connecticut River on a rocky riverside outcrop. The letter noted that the population may be subject to scour and flooding during high flows and releases, and recommended a survey being conducted during re-licensing efforts for the Project. As an exempted Project, Dodge Falls is not subject to re-licensing requirements as the exemption is issued in perpetuity so the NHNHB may have been referencing LIHI recertification.



Figure 6 - Balsam Groundsel

The Project operates in run-of-river mode, so any scour due to high flows is beyond the scope of Project operations. However, in the event that any ground-disturbing activity takes place in the area where the balsam groundsel is located it could potentially have an impact on this threatened species. Therefore, I am including a condition that the Applicant consult with NHNHB on the need to conduct a survey for balsam groundsel prior to any ground-disturbing activity downstream of the dam, according to the recommendations included in the NHHB letter.

Based on the review of the application, supporting documentation, and other publicly available information the Project continues to satisfy the Threatened and Endangered Species criterion with the conditions referenced above.

⁶ Johnson, C.M. and R.A. King, eds. 2018. Beneficial Forest Management Practices for WNS-affected Bats: Voluntary Guidance for Land Managers and Woodland Owners in the Eastern United States. A product of the White-nose Syndrome Conservation and Recovery Working Group established by the White-nose Syndrome National Plan (www.whitenosesyndrome.org). 39 pp.

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 standards G-1, Not Applicable/De Minimis for all zones. During the FERC exemption process, the Vermont Division for Historic Preservation issued a letter noting that the paper mill site and associated facilities *"appear to be eligible for inclusion in the National Register of Historic Places...[but] the proposed Project, as presently planned, will not affect the qualities that make this property eligible."* However, the Project works were ultimately moved to the New Hampshire side of the river. During the original LIHI certification, an official with New Hampshire Division of Historical Resources stated that New Hampshire did not have any concerns with the Project because the eligible historic properties were on the Vermont side of the river (see 2009 review report on LIHI website.) During this current re-certification, the Applicant sought feedback from Vermont's state archaeologist and the Advisory Council on Historic Preservation, and no comments were received. However, there have been no Project changes that would impact any eligible resources.

Based on the review of the application, supporting documentation, and prior input from agencies/stakeholders, the Project appears to continue 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 applied Standard H-2, Agency Recommendation, for both zones. Recreational facilities include a canoe portage trail on the NH side of the river, fishing access, and camping shelter for through paddlers (Figure 7)⁷. During the recreational season, a boater restraint cable is installed in the vicinity of Marshall Island upstream of the DF dam (Figure 8). Access to all facilities is provided free of charge. There have been no changes to the recreational access requirements or issues with compliance noted on FERC e-library since its most recent LIHI certification. Based on the review of the application, supporting documentation, and other publicly available information) the Project continues to satisfy the Recreational Resources criterion⁸.

⁷ <https://www.connecticutriverpaddlerstrail.org/crpt7/>

⁸ In the 2008 Connecticut River Management Plan, one recommendation on pg. 10 suggests the then current signage at the upper takeout is "misleading" and requesting the Upper Valley Land Trust work with the owner to provide better signage at the upstream takeout above the dam. This recommendation was never provided to the owner and was not identified in the 2009 or 2015 certifications. I am therefore not including a condition here, but I bring it to the owner's attention as a possible item to address if it re-emerges in the future.



Figure 7 – Camping Shelter near portage



Figure 8 - Boater safety cable in impoundment

VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION

Based on this review, the Dodge Falls Hydroelectric Project continues to meet the LIHI criteria for certification as a Low Impact Hydropower facility and a new 5-year term is recommended with the following condition:

Condition 1: Prior to undertaking any ground-disturbing activity in the region below the dam, the Owner shall consult with NH Natural Heritage Bureau and if needed, conduct a survey for balsam groundsel and develop any necessary mitigation measures. Prior to felling any trees, the Owner shall consult with US Fish and Wildlife Service to review and ensure compliance with the Best Management Practices for Hazard Tree Removal contained in the report *“Beneficial Forest Management Practices for WNS-affected Bats.”*⁹

⁹ Johnson, C.M. and R.A. King, eds. 2018. Beneficial Forest Management Practices for WNS-affected Bats: Voluntary Guidance for Land Managers and Woodland Owners in the Eastern United States. A product of the White-nose Syndrome Conservation and Recovery Working Group established by the White-nose Syndrome National Plan (www.whitenosesyndrome.org). 39 pp.

Appendix A. Supporting Documentation

From: [Davis, Eric](#)
To: [Andrew Locke](#); [Crocker, Jeff](#)
Cc: [Maryalice Fisher](#)
Subject: RE: Dodge Falls ROR Data
Date: Tuesday, November 5, 2019 10:46:37 AM

Good morning Andrew,

Thanks again for engaging proactively and early on in the recertification process. VTDEC has reviewed the data provided by Dodge Falls Associates, LP and determined that operations for the time period demonstrate compliance with the terms of the certification issued for the project.

Thank you,
Eric

Eric Davis, *River Ecologist*

1 National Life Drive, Main 2
Montpelier, VT 05620-3522
802-490-6180 / eric.davis@vermont.gov
<http://www.watershedmanagement.vt.gov/rivers>



See what we're up to on our [Blog](#), [Flow](#).

From: Davis, Eric
Sent: Monday, September 16, 2019 1:03 PM
To: 'Andrew Locke' <alocke@essexhydro.com>; Crocker, Jeff <Jeff.Crocker@vermont.gov>
Cc: Maryalice Fisher <mfischer@lowimpacthydro.org>
Subject: RE: Dodge Falls ROR Data

Hello Andrew,

Thank you for engaging with us early in the process and providing the operations data. We'll review it and let you know if we have any questions.

Thanks,
Eric

Eric Davis, *River Ecologist*



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DIVISION OF FORESTS & LANDS - DNCR

172 PEMBROKE ROAD, CONCORD, NH 03301

(603) 271-2214 <https://www.nh.gov/nhdfl/>

October 17, 2019

Low Impact Hydropower Institute
329 Massachusetts Avenue
Suite 6
Lexington, MA 02420
comments@lowimpacthydro.org

RE: Dodge Falls Hydroelectric Project (LIHI #42) Low Impact Recertification

To Whom it May Concern:

Thank you for contacting the NH Natural Heritage Bureau to solicit comments relative to the Low Impact Recertification of the Dodge Falls Hydroelectric Project in Bath, NH.

The NH Natural Heritage Bureau (NHB) finds, tracks, and facilitates the protection of New Hampshire's rare plants and exemplary natural communities. Our mission, as mandated by the Native Plant Protection Act of 1987 (RSA 217-A), is to determine protective measures and requirements necessary for the survival of native plant species in the state, to investigate the condition and degree of rarity of plant species, and to distribute information regarding the condition and protection of these species and their habitats.

NHB also maintains information on rare wildlife in cooperation with the NH Fish & Game Department's Nongame & Endangered Wildlife Program, which has legal jurisdiction over New Hampshire wildlife. Please note that all comments contained herein pertain only to State or Federally-listed Threatened and Endangered plant species and/or exemplary natural communities, as wildlife is outside of NHB's jurisdiction. NHB recommends contacting the NH Fish & Game Department for comments relative to wildlife impacts.

The NHB database contains a record for a State Threatened plant species in the immediate vicinity of the Dodge Falls Hydroelectric Project. This species, balsam groundsel (*Packera paupercula*), is documented downstream of the dam on the NH side of the Connecticut River, on a rocky riverside outcrop. Due to its location, the population may be subject to scour and flooding during high flows and releases; this rare plant population was last inventoried in 1994, and its current status is unknown. NHB recommends that the relicensing effort include an inventory of the balsam groundsel population, in order to:

- a. Determine the current size and condition of the population, and remove its "historical" status (i.e., a population last reported over 20 years ago);
- b. Record observations of any stressors on the population;
- c. Analyze whether any observed stressors have resulted from or are exacerbated by operation of the Dodge Falls Hydroelectric Project; and
- d. Develop measures, as appropriate, to mitigate any negative effects of the dam on the balsam groundsel population.



NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DIVISION OF FORESTS & LANDS - DNCR
172 PEMBROKE ROAD, CONCORD, NH 03301
(603) 271-2214 <https://www.nh.gov/nhdfl/>

Prior to undertaking such a survey, NHB recommends obtaining an official environmental review letter through the NHB DataCheck Tool, at https://www2.des.state.nh.us/nhb_datacheck/tool.htm. Such a letter will provide additional information about the rare species population, including a map of its precise location, details from previous survey(s), and habitat information. NHB recommends that rare plant location information remain confidential and be omitted from public documents.

Sincerely,

Amy Lamb, Ecological Information Specialist
NH Natural Heritage Bureau

cc: Peter Drown, application reviewer, CleanTech Analytics, LLC,
peter.drown@cleantechanalytics.com