

# REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE

## OF THE GORHAM HYDROELECTRIC FACILITY



Prepared by:

**Peter Drown**

**Cleantech Analytics LLC**

**June 3, 2019**



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## **I. INTRODUCTION**

This report reviews the application received by the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification of the Gorham Hydroelectric Facility (“Gorham” or “Facility.”) The Facility is owned by HSE Hydro NH AC, LLC and operated by Central Rivers Power NH, LLC (“Applicant” or “Owner”), both of which are owned by Hull Street Energy, a private equity firm. The Facility is located on the Androscoggin River in northern New Hampshire in the town of Gorham. The Facility consists of a low-head, 20-foot timber crib dam approximately 417 feet long, an earthen power canal approximately 415 feet long leading to a powerhouse with four vertical axis turbines with a total nameplate capacity of 2.15 MW.

The Applicant submitted an initial certification application on February 22, 2019. I completed a review of the Project using LIHI’s intake review process and noted only a minor amount of additional information was missing. The application was posted for 60-day public comment period, and the Applicant submitted a revised certification application on April 2, 2019. I have conducted a review of this application and all supporting materials, the Project record on FERC e-library, and agency comments, and conclude that the Gorham Hydroelectric Facility meets LIHI Criteria contained in the 2<sup>nd</sup> edition handbook.

## **II. PROJECT GEOGRAPHIC LOCATION**

The Facility is located on River Mile 118.5 of the Androscoggin River in the town of Gorham, located in northern New Hampshire. The Androscoggin River watershed drains over 3,500 square miles in northern New Hampshire and western Maine on its way to Merrymeeting Bay in the Gulf of Maine. The headwaters are located along the low mountains on the Canadian border, where rainfall and snowmelt combine to form the northern tributaries of the Androscoggin – the Swift and Dead Diamond, Magalloway, Cupsuptic and Kennebago – before emptying into the Rangle Lakes chain. Lake Umbagog of this chain is the official beginning of the Androscoggin River, along the New Hampshire/Maine border. The river travels from the rural and scenic areas in the north country through former industrial-focused mill towns and eventually to the populated areas along the coast, experiencing a sharp transition in forest species as it traverses one of the most mountainous regions of New England. Over 20 major dams have been constructed on the Androscoggin River. For an excellent description of the geography, history and diverse natural communities within this watershed, see the *Ecological Atlas of the Upper Androscoggin River Watershed* (Appalachian Mountain Club, 2003<sup>1</sup>.)

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<sup>1</sup> <https://www.outdoors.org/wp-content/uploads/pdf/Ecological-Atlas-of-the-Upper-Androscoggin-River-Watershed.pdf>

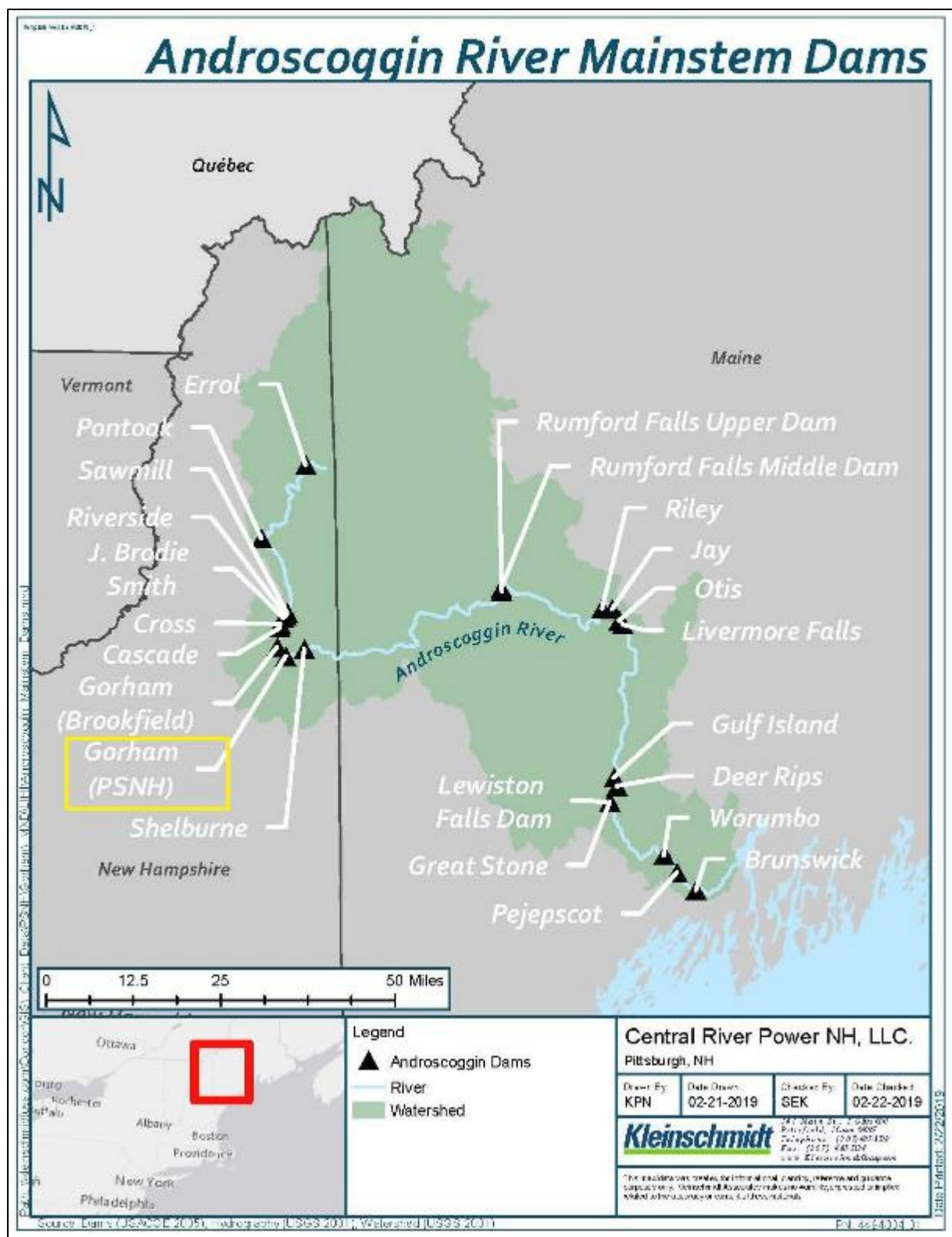


Figure 1 - Androscoggin River major dams



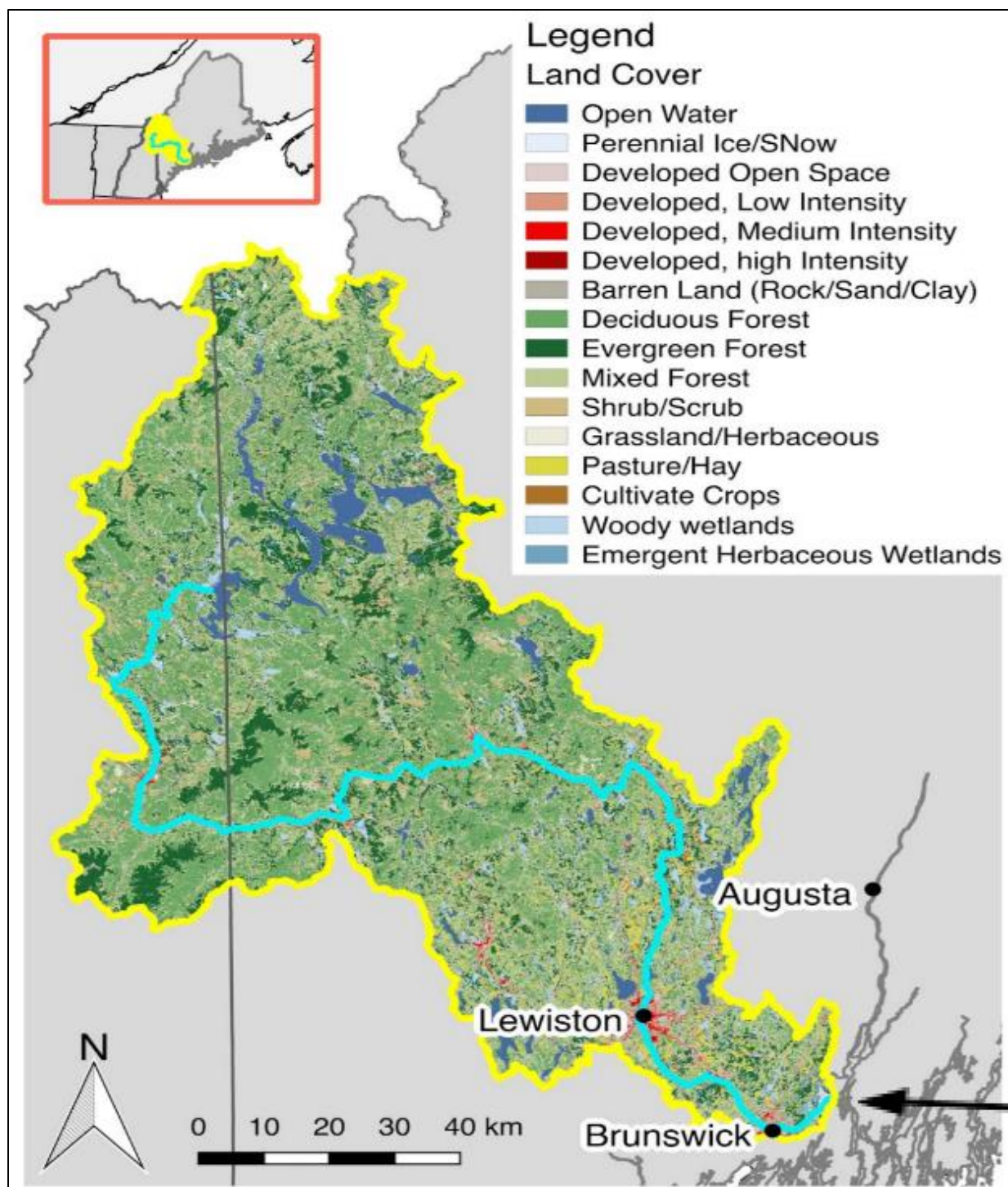


Figure 2 - Androscoggin Watershed Land Cover

### III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

The Project area includes the riverine reach downstream of the dam extending approximately 2,070 feet and the reservoir extending approximately 4,700 feet above the dam. The south shoreline of the Project includes the town of Gorham and consists primarily of developed land. The northern shoreline is primarily wooded. Patches of emergent wetland are present along the shorelines. The Project is bifurcated by an island in the Androscoggin River, with the dam extending from the north shoreline to the island, which, along with the dam on the opposing side of the island, creates an effective 1,000-foot-long power canal on the south side of the island leading to the powerhouse. The Peabody River joins the Androscoggin immediately downstream of the powerhouse, and the Gorham water treatment plant discharges into the river approximately 500 feet downstream of the powerhouse. This confluence noticeably changes the characteristics of the Androscoggin and the river appears to pick up speed at this point, delimiting the end of Zone 3.



Figure 3 – Gorham south embankment (drone footage courtesy of Kleinschmidt)





Figure 4 - Gorham north embankment (drone footage courtesy of Kleinschmidt)

#### IV. ZONES OF EFFECT

The Applicant designated three zones of effect. Zone 1 consists of the Project impoundment extending from the Gorham dam upstream approximately one mile to Buck's Island, which bisects the Androscoggin River. Zone 2 extends from the Gorham dam approximately 1,000 feet to the confluence of the power canal and Project tailrace. Zone 3 extends from this confluence approximately 1,000 feet downstream, where the Peabody River joins the Androscoggin and alters the characteristics and flow pattern of the combined reach. I agree with the zones selected by the Applicant.



Figure 5 - Zones of Effect (Blue = Impoundment, Yellow = Bypassed Reach, Red = Downstream)

Table 1 - Impoundment Zone (Zone 1) Standard Selection

CRITERION		ALTERNATIVE STANDARDS				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
<b>A</b>	<b>Ecological Flow Regimes</b>		<i>X</i>			
<b>B</b>	<b>Water Quality</b>		<i>X</i>			
<b>C</b>	<b>Upstream Fish Passage</b>	<i>X</i>				
<b>D</b>	<b>Downstream Fish Passage</b>		<i>X</i>			
<b>E</b>	<b>Watershed and Shoreline Protection</b>		<i>X</i>			<i>X</i>
<b>F</b>	<b>Threatened and Endangered Species Protection</b>	<i>X</i>				
<b>G</b>	<b>Cultural and Historic Resources Protection</b>		<i>X</i>			
<b>H</b>	<b>Recreational Resources</b>		<i>X</i>			

Table 2 - Bypassed Reach (Zone 2) Standard Selection

CRITERION		ALTERNATIVE STANDARDS				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
<b>A</b>	<b>Ecological Flow Regimes</b>		<i>X</i>			
<b>B</b>	<b>Water Quality</b>		<i>X</i>			
<b>C</b>	<b>Upstream Fish Passage</b>	<i>X</i>				
<b>D</b>	<b>Downstream Fish Passage</b>		<i>X</i>			
<b>E</b>	<b>Watershed and Shoreline Protection</b>		<i>X</i>			<i>X</i>
<b>F</b>	<b>Threatened and Endangered Species Protection</b>	<i>X</i>				
<b>G</b>	<b>Cultural and Historic Resources Protection</b>		<i>X</i>			
<b>H</b>	<b>Recreational Resources</b>		<i>X</i>			

Table 3 - Downstream Reach (Zone 3) Standard Selection

CRITERION		ALTERNATIVE STANDARDS				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
<b>A</b>	<b>Ecological Flow Regimes</b>		<i>X</i>			
<b>B</b>	<b>Water Quality</b>		<i>X</i>			
<b>C</b>	<b>Upstream Fish Passage</b>	<i>X</i>				
<b>D</b>	<b>Downstream Fish Passage</b>	<i>X</i>				
<b>E</b>	<b>Watershed and Shoreline Protection</b>		<i>X</i>			<i>X</i>
<b>F</b>	<b>Threatened and Endangered Species Protection</b>	<i>X</i>				
<b>G</b>	<b>Cultural and Historic Resources Protection</b>		<i>X</i>			
<b>H</b>	<b>Recreational Resources</b>		<i>X</i>			

## V. REGULATORY AND COMPLIANCE STATUS



The Gorham dam, water control structures and powerhouse were built in stages, beginning in 1903 and extending until 1923. The original Owner was Twin State Gas and Electric, and the Facility was acquired by Public Service of New Hampshire (PSNH) in 1943. In 1994, PSNH received a 30-year license for the continued operation of the Gorham Project. On September 10, 2018, PSNH sold their hydroelectric projects to HSE Hydro NH AC, LLC, owned by Hull Street Energy, a private equity firm. The Gorham Project license expires in July 2024, so re-licensing efforts are planned to begin later this year. I did not identify any violations of the current license on the FERC e-library in the past 20 years.

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

There were no public comments received, however I solicited and received comments from resource agencies and the Applicant as I conducted the review. The agencies include New Hampshire Department of Environmental Services (NHDES) and the New Hampshire Natural Heritage Bureau (NHNHB).

## **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 Owner selected Standard A-2, Agency Recommendation, for all zones. The Project is required to operate in a run-of-river mode, where outflows approximate inflows, and provide a 200 cfs minimum flow into the bypassed reach (the north side of the River opposite the power canal) at all times. This flow is provided over a modified flashboard panel on the west side of the dam. Operations are conducted remotely from CRP NH's Control Center Customized Energy Solutions (CES) located in Philadelphia, Pennsylvania, although manual operations are also conducted by the Upper Hydro Group, which operates several other nearby projects for this Owner in Northern New Hampshire. This minimum flow requirement is maintained by keeping the headpond elevation at 96.75 feet MSL, which is monitored and recorded (along with minimum flows) at the dispatch center. During refilling of the impoundment, the Owner is required to release Aquatic Base Flows (ABF) or 90 percent of inflow, whichever is less, into the tailrace to protect aquatic resources downstream.

The scientific and technical basis for these requirements was developed by an Instream Flow Study conducted in 1993, which found that this minimum flow would provide for adequate protection of resident aquatic species. These measures were included in a run-of-river operations and monitoring plan, which was developed in consultation with the U.S. Geological Survey (USGS), the U.S. Fish and Wildlife Service (USFWS), and the New Hampshire Fish and Game Department (NHFGD). The Owner is required to monitor minimum flow and run-of-river operations through provisions in a 1995 FERC Order approving those plans under Article 403 of the License. These monitoring provisions include: (1) a Meritape level sensor that records total water being passed by the dam<sup>2</sup>, which sends data to the Owner's

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<sup>2</sup> From the application: "The Meritape sensor assembly consists of a 2-inch removable, heated sensor/pipe within a permanent 3-inch outer pipe. The Meritape assembly (type LA-AF) has been chosen because of its operating

control center to ensure the required pool level is maintained; (2) visual inspections of the pool, bypassed reach and flashboards; and (3) daily logs of pond level, flows and outages performed by the Upper Hydro Group. The measures required in the 1993 licensing proceedings were determined to “enhance the water quality, fishery resources and aesthetics” (FERC License.) There is no record of violations of flow requirements on FERC e-library. As noted in the Water Quality criterion below, the Project will be starting re-licensing proceedings later this year. Based on my conversations with NHDES, there will be new studies required to determine whether existing operations are adequate to support water quality standards and aquatic resources.

Based on the application materials and supporting documentation, the Project satisfies the Ecological Flow Regimes 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 Owner selected Standard B-2, Agency Recommendation, for all zones. The Androscoggin River upstream and downstream of Gorham is classified as Class B, defined as “*acceptable for fishing, swimming and other recreational purposes, and, after adequate treatment, for use as water supplies.*” This reach is impaired for fish consumption due to the presence of mercury, from a legacy of former paper mill contamination<sup>3</sup>, low dissolved oxygen (DO) and pH levels (causes unknown.) The Water Quality Certificate was approved on April 25, 1991 and included a requirement to prepare and submit a DO and water temperature monitoring plan, which was designed to ensure the Project maintains a DO content of no less than 75% saturation, as measured upstream of the impoundment, downstream of the dam, and downstream of the tailrace. The plan required a final report to be provided after three consecutive years of monitoring. The final report was approved by FERC on August 13, 1998. The FERC approval concluded that “the results from sampling conducted in 1994, 1995, and 1997...did not show a strong correlation between generation and percent saturation of DO...” The NHDES stated by letter dated June 11, 1998 that no further water quality sampling is required at the two projects. The Owner received additional verbal concurrence from NHDFG and USFWS at that time.

I contacted the Watershed Management Bureau of the NHDES responsible for this region to determine whether the Facility is contributing adversely to water quality standards. The NHDES stated that there was “insufficient data” for such a determination, but due to the eminent re-licensing proceedings for the Project (license expires in 2024,) they would be “requesting various water quality and aquatic resource studies to determine appropriate Project operating conditions to ensure surface water quality standards are met,” and those studies would likely commence in the next few years. Given that these results are

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temperature range (-29 to +107° Celsius), it has no moving parts, has high mechanical shock resistance and its output is stable and dependable.”

<sup>3</sup> “Characterization of Mercury Contamination in the Androscoggin River, Coos County, New Hampshire”, USGS, 2013 [hyperlink](#)

required to demonstrate LIHI compliance with the Water Quality criterion, I am recommending a condition that the Owner provide these results to LIHI when the studies are completed, and LIHI will reserve the right to revoke certification if the results demonstrate the project contributes adversely to water quality standards.

Based on the application materials and supporting documentation (excluding the agency comment), the Project appears 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 health, sustainable fish and wildlife resources in areas affected by the facility.

The Owner selected Standard C-1, Not Applicable/De Minimis, for all zones, contending that there are no migratory fish species present in the Project vicinity, nor were there any present historically. The record supports this statement. According to the Maine Department of Marine Resources, Rumford Falls was the upstream extent of migration for both Atlantic salmon and American eel, and Lewiston Falls (~35 miles downstream of Rumford Falls) was the upstream extent of migration for other species<sup>4</sup>. In addition, the Kennebec Land Trust notes that Atlantic salmon historically migrated up the Androscoggin River to the base of the falls at Rumford, citing data from the late 1800s<sup>5</sup>. It is therefore reasonable to conclude that the Facility did not contribute to the extirpation of this species. The FERC license includes reservation of authority to prescribe fish passage in the future. See Downstream Fish Passage criterion for a discussion of a previous proposal to exercise that authority that was terminated.

In my opinion, the Owner meets Standard C-1, Not Applicable/De Minimis for all zones, and therefore, the Project satisfies 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 Owner selected Standard D-2, Agency Recommendation, for all Zones. As part of the re-licensing proceedings in 1993, the Owner was required to propose functional designs of downstream fish bypass facilities, including plans for operations and maintenance. However, FERC terminated this order upon

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<sup>4</sup> “Androscoggin River Anadromous Fish Restoration Program,” Maine Department of Marine Resources, 2006 [hyperlink](#)

<sup>5</sup> “The Kennebec Estuary: Restoration Challenges and Opportunities,” Kennebec Land Trust, 2010 [hyperlink](#)

appeal, by an order issued January 9, 2003, citing that the license burdens were not justified by the limited public benefit<sup>6</sup>.

The original basis of these passages was contained in recommendations proposed by the Department of Interior (on behalf of USFWS.) The recommendation was premised on the eventual addition of a new development (“Pulsifer Rips”) upstream of the Gorham impoundment which would create a significantly enhanced salmonid habitat in a 1.5-mile bypassed reach. FERC noted that the potential of this addition was a key decision driver for the fish passage requirement for Gorham. Prior to those proceedings, New Hampshire maintained an active fish stocking effort (trout and landlocked Atlantic salmon) upstream of the Gorham Project, and studies showed that transient salmonids would reside in the Berlin-Shelburne area (just upstream of Gorham). However, the proposal for Pulsifer Rips was eventually withdrawn, which led to a re-examination of the fish passage requirements for the downstream projects that had been proposed. FERC determined that the minimum flow requirements required by Article 402 should provide adequate passage through spillage, and deleted Article 406 (those requiring passage) from the Project license. In deleting this requirement, FERC noted that they were making the recommendation based on a record that was compiled a decade earlier, acknowledging that fishery conditions had likely changed in the Berlin-Shelburne reach. However, Article 404 remains and reserves authority for the FERC to require fish passage in the future as the Interior Department may prescribe pursuant to Section 18 of the Federal Power Act. As stated in the Water Quality criterion above, new studies pursuant to the 2024 re-licensing will be conducted over the next few years to determine operational impacts of the Project on aquatic resources.

Based on the application materials and supporting documentation, the Project satisfies 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 Owner selected Standard E-2, Agency Recommendation, for all zones, and requested the PLUS Standard for maintaining a buffer zone that protects land within 150 feet of the natural high water mark. The Town of Gorham abuts the south shoreline of the Project boundary and consists primarily of developed land, with patchy sections of deciduous forest. The northern shoreline is primarily undeveloped, and includes a mix of wooded wetlands, emergent herbaceous wetland, and forest (see Figure 6.) Article 408 of the License required a Shoreline Management Plan, which FERC approved on April 19, 1999. The Plan was prepared in consultation with the Town of Gorham, New Hampshire Fish and Game Department, and the National Park Service, and requires practices for managing vegetation,

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<sup>6</sup> The reason for the delay between the time the re-licensing went into effect and the termination of order was because FERC determined these specific recommendations could wait until an Environmental Assessment was completed for upstream projects, which were also going through re-licensing at that time.



maintaining aesthetics and submitting annual shoreline inspection reports. The application included links to these reports which have been filed consistently for the past five years.

The Plan adopted provisions from the New Hampshire Shoreland Water Quality Protection Act (SWQPA). Enacted in 1991, the SWQPA establishes minimum standards for the subdivision, use and development of shorelands adjacent to the state's public water bodies<sup>7</sup>. The Act has been modified several times since its enactment, and one of those changes was to include shoreline buffer zones where vegetation removal is limited and protecting the shoreline of rivers through enhanced oversight methods. All land within 250 feet of the high water mark is defined as protected shoreland with restricted uses, and a natural woodland buffer is maintained within a 150 foot buffer of that mark.

LIHI allows PLUS certification for shoreline protection criterion under either of the following circumstances:

- Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors.
- In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

The Owner calculated that approximately 77% of the Project shoreline is undeveloped and subject to the woodland buffer zone which has been adopted into its Shoreline Management Plan. The Shoreline Management Plan states that the licensee only owns 35% of the area within the Project boundary. The LIHI requirement states that the plan must protect 50% or more of the undeveloped shoreline *that the facility owns*, so the buffer zone applies only to that portion. FERC noted that the licensee should not be required to acquire the 150-foot buffer around the entire reservoir in order to comply.) The Owner visually inspects the shoreline annually and files a report with FERC to determine whether any violations of the SWQPA have occurred. None have been recorded. Finally, the Owner is required to file request for amendment of the plan if changes to state or local law are made that may provide a more stringent ordinance.

LIHI's PLUS certification is designed to reward applicant's for "making substantial investments in the environment around their facilities." The SWQPA is state law in New Hampshire, and therefore is not a voluntary effort of the Applicant and it is difficult to justify this as a "substantial investment" from the Applicant. Therefore, I am recommending against PLUS certification for this Project.

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<sup>7</sup> For more information on the SWQPA, including its history and modifications, see the following link: <https://www.des.nh.gov/organization/divisions/water/wetlands/cspa/categories/overview.htm>

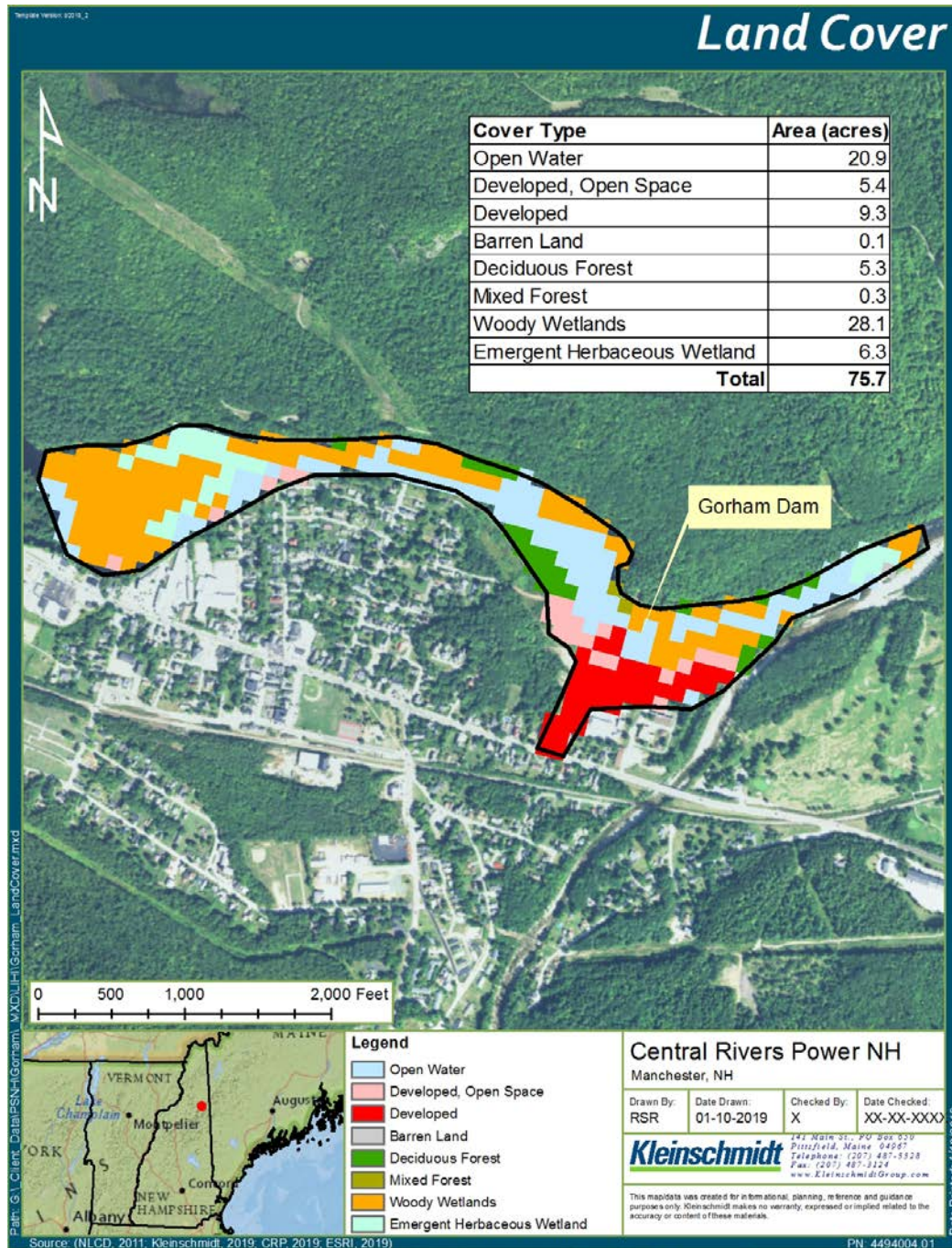


Figure 6 - Gorham Land Cover Map

## F. Threatened and Endangered Species Protection

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

The Owner selected Standard F-1, Not Applicable/De Minimis, for all zones. The application included correspondence from the USFWS from February 1, 2019 stating that Northern long-eared bat and Canadian lynx may occur in the Project area. The USFWS noted the Project is outside of critical habitat

for the Canadian lynx<sup>8</sup>. In addition, a review of the state threatened and endangered species list found that three additional species of listed bats may occur in the Project area – the Eastern small-footed bat, Little brown bat, and Tri-colored bat. Based on numerous LIHI reviews and correspondence with state and federal agencies, the only potential impact to bat populations from hydropower operations occur if tree-clearing activity takes place in roosting areas. As noted in Criterion E, the SWQPA establishes a woodland buffer zone within 150 feet of the ordinary high water mark. I contacted the consultant who prepared the LIHI application and he confirmed that no tree clearing occurs as part of routine maintenance. The trees that do exist near the east end of the dam are set back from the Project structures.

On January 29, 2019 the NH Natural Heritage Bureau confirmed the location of a floodplain forest consisting of sugar maple, silver maple and white ash both upstream and downstream of the Project, one of only two such forests documented in New Hampshire. The impact to these forests from the Project operation is unknown, but the application noted that “the presence of the dam may contribute to the current condition of these communities, for example maintaining the headpond at elevation 96.75 feet may alter downstream flood regimes to unknown effect.” I reviewed the most recent Rare Plant List for New Hampshire (March 2018) and none of these species are listed as either threatened or endangered. I contacted NHNHBB to address this issue and was informed that “natural communities” is a term used to define a natural assemblage of plants, and since they include more than one species, are not listed on the threatened and endangered species list<sup>9</sup>. However, the species listed in this natural community are not on the threatened and endangered species list, and therefore, they do not meet LIHI’s definition of “Listed Species” as described in the Handbook. Based on the application materials and supporting documentation, the Project satisfies 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 Owner selected Standard G-2, Agency Recommendation, for all zones. A Phase I archaeological study conducted in 1991 found two historical sites within the Project boundary. These include the Eddy Bridge site comprised of abutments for a suspension bridge built in 1877-1921 and the Logging Boom site containing logging cribs and boom. Both sites are continuously inundated. The Project was required to file a Cultural Resources Management Plan, which they did in 1994. The Plan includes management strategies, action plans and consultation procedures to protect existing and any new cultural and historic resources and was executed by the Owner and the New Hampshire Division for Historic Preservation in 1996. The Owner has filed subsequent reports as required by the plan, and the FERC noted the

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<sup>8</sup> The Recovery Plan for Canadian Lynx states that “a lynx population can only persist in a large boreal forested landscape that contains appropriate forest types, snow depths and high snowshoe hare densities.”

[https://ecos.fws.gov/docs/recovery\\_plan/final%20draft%20Lynx%20Recovery%20Outline%2009-05.pdf](https://ecos.fws.gov/docs/recovery_plan/final%20draft%20Lynx%20Recovery%20Outline%2009-05.pdf)

<sup>9</sup> I was also informed that although not listed on the threatened and endangered species list, they are protected under New Hampshire’s Rare Plant Protection Act.



cooperative efforts of the applicant to maintain cultural resources at the projects<sup>10</sup>. Based on the application materials and supporting documentation, the Project satisfies the Cultural and Historic Resource Protection 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 Owner selected Standard H-2, Agency Recommendation for all zones. As documented in the recreational reports filed for the site, the most popular recreational activities include (in descending order) walking, hiking, fishing and biking. During the last licensing proceedings, the Owner was required to implement a number of recreational enhancement measures, including a walking trail, a picnic area, a canoe portage, a fishing area downstream of the powerhouse, parking, and an information kiosk (Figure 7). The 2015 recreational report shows that the Owner provides free access to all recreational points, and documented 870 visitors during the most recent recreational year<sup>11</sup>. Based on the application materials and supporting documentation, the Project satisfies the Recreational Resources criterion.

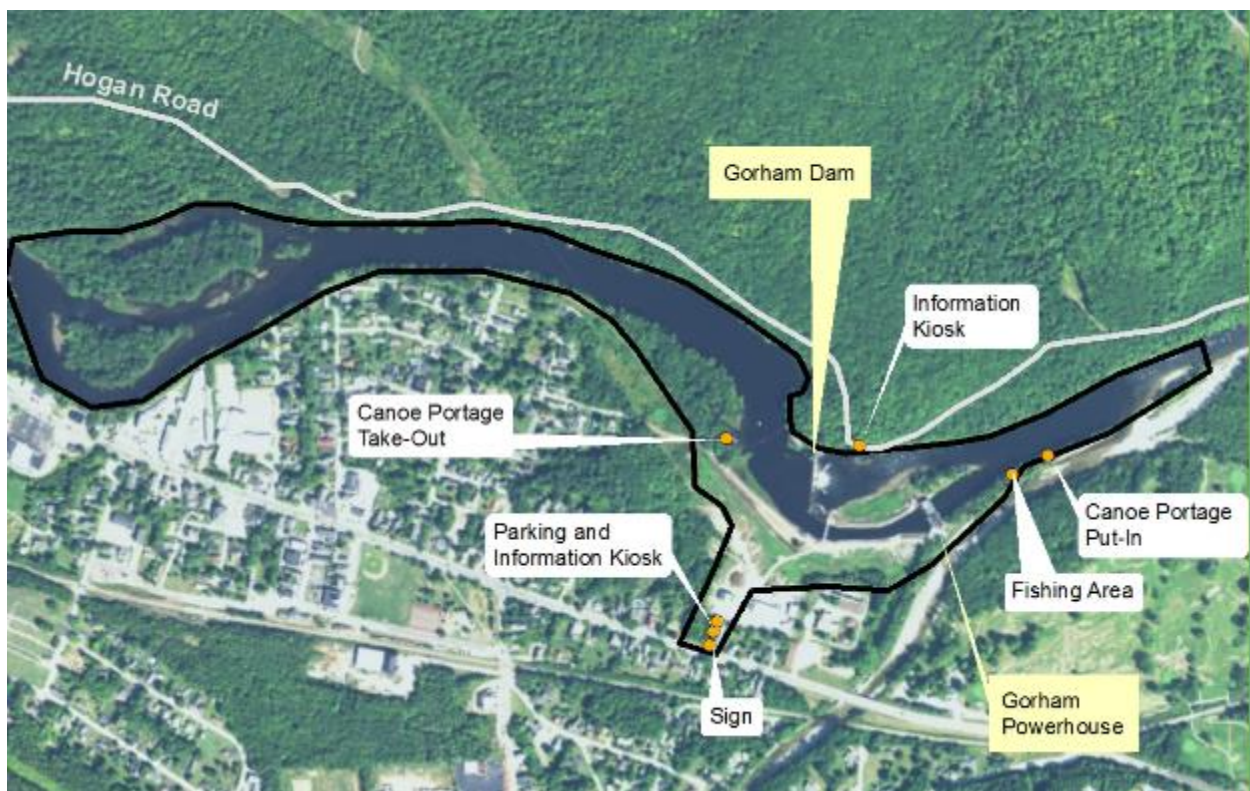


Figure 7 - Gorham Recreational Facilities

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<sup>10</sup> <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12292257>

<sup>11</sup> <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13801790>



## **VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATIONS**

Based on this review, the Gorham Hydroelectric Project meets the LIHI criteria for certification as a Low Impact Hydropower facility. A five-year term is recommended, with the following condition:

**Condition 1:** If the facility Owner completes water quality studies during the certification term, results shall be provided to LIHI in annual compliance submittals along with NHDES approval of results. LIHI reserves the right to modify or revoke the certification if the water quality results demonstrate that the Project contributes adversely to water quality standards.

## APPENDIX A AGENCY COMMUNICATIONS

**Date:** May 10, 2019

**Contact:** Amy Lamb

**Agency:** Department of Natural and Cultural Resources

**Criteria Affected:** Watershed Protection, Threatened and Endangered Species Protection

5/21/2019

Gmail - Gorham - Sugar Maple Forest



Peter Drown <peter.drown@gmail.com>

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### Gorham - Sugar Maple Forest

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Lamb, Amy <Amy.Lamb@dncr.nh.gov>  
To: Peter Drown <peter.drown@cleantechanalytics.com>

Fri, May 10, 2019 at 10:17 AM

Peter,

A natural community is a recurring assemblage of plants and animals found in particular physical environments. A natural community is identified and classified based on 1) plant species composition, 2) vegetation structure (e.g., forest, shrubland, or marsh), and 3) a specific combination of physical conditions (e.g., water, light, nutrient levels, and climate). NHB identifies "exemplary" examples of specific natural communities that are deserving of protection. Since natural communities are made up of more than one species, they are not included on the T & E species list. However, they are still protected by NH's Rare Plant Protection Act: <http://www.gencourt.state.nh.us/rpa/html/XIX/217-A/217-A-mrg.htm>

Best,

Amy

Amy Lamb  
Ecological Information Specialist  
(603) 271-2834  
[amy.lamb@dncr.nh.gov](mailto:amy.lamb@dncr.nh.gov)

NH Natural Heritage Bureau  
DNCR - Forests & Lands  
172 Pembroke Rd  
Concord, NH 03301

[Quoted text hidden]

**Date:** May 21, 2019  
**Contact:** Gregg Comstock, P.E.  
**Agency:** New Hampshire Department of Environmental Services  
**Criteria Affected:** Flows, Water Quality

5/21/2019

Gmail - Request for Feedback - Gorham Hydroelectric Project



Peter Drown <peter.drown@gmail.com>

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## Request for Feedback - Gorham Hydroelectric Project

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**Comstock, Gregg** <Gregg.Comstock@des.nh.gov>

Tue, May 21, 2019 at 1:08 PM

To: Peter Drown <peter.drown@cleantechanalytics.com>

Cc: "Walsh, Ted" <Ted.Walsh@des.nh.gov>, "Wood, Matt" <Matthew.Wood@des.nh.gov>, "Henderson, Carol" <Carol.Henderson@wildlife.nh.gov>, "Rosset, Julianne" <julianne\_rosset@fws.gov>

Hello Peter.

There is currently insufficient data for the New Hampshire Department of Environmental Services (NHDES) to determine if the Gorham Hydroelectric Project (FERC No. 2288) is, or is not, causing or contributing to violations of our surface water quality standards (Env-Wq 1700 and RSA 485-A:8). It is my understanding that FERC license for this project expires in 2024 and that the Owner will soon be starting the FERC relicensing process. As part of that process, the NHDES, the New Hampshire Fish and Game Department (NHFGD) and most likely the U.S. Fish and Wildlife Service (USFWS) will be requesting various water quality and aquatic resource studies to determine appropriate Project operating conditions to ensure surface water quality standards are met. Those studies would likely be conducted within the next few years.

Thank you for the opportunity to comment.

Best regards,

Gregg

Gregg Comstock, P.E.

Supervisor, Water Quality Planning Section

Watershed Management Bureau

Water Division, NH Department of Environmental Services

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**From:** Peter Drown <peter.drown@cleantechanalytics.com>

**Sent:** Monday, May 20, 2019 6:01 PM

<https://mail.google.com/mail/u/0/?ik=4642cf9445&view=pt&search=all&permmsgid=msg-f%3A1634162190487044884&simpl=msg-f%3A16341621904...> 1/2

**Date:** May 10, 2019  
**Contact:** Andy Qua  
**Agency:** N/A (Applicant's LIHI Consultant)  
**Criteria Affected:** Threatened and Endangered Species

5/22/2019

Gmail - Bats at Gorham



Peter Drown <peter.drown@gmail.com>

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## Bats at Gorham

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**Andy Qua** <Andy.Qua@kleinschmidtgroup.com>  
To: Peter Drown <peter.drown@cleantechanalytics.com>

Fri, May 10, 2019 at 10:35 AM

Hey Peter –

There are a few trees near the east end of the dam but set back from structures. Otherwise there are no trees surrounding project structures and no tree clearing occurs as part of routine maintenance. The attached file contains a couple stills from our drone footage to give you a sense of the layout.

Best,

Andy

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**From:** Peter Drown <peter.drown@cleantechanalytics.com>  
**Sent:** Friday, May 10, 2019 4:55 AM  
**To:** Andy Qua <Andy.Qua@KleinschmidtGroup.com>  
**Subject:** Bats at Gorham

Hi Andy,

Do you know whether any tree-clearing activity occurs at Gorham? I'm trying to determine whether there are any potential impacts to T&E bat species.

Thanks,

–

**Peter Drown | President**

Mobile: (202) 815-2336

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Skype: peter.r.drown

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