

# Full Application Review for Low Impact Hydropower Certification of Comtu Falls Hydroelectric Facility



Prepared by Peter Drown, Cleantech Analytics LLC

October 2, 2015

**Cleantech**  
analytics LLC

## I. Executive Summary

This report reviews the Full Original Application for the Comtu Falls Hydroelectric Facility (“Comtu Falls”, FERC #P-7888) located at River Mile 4.4 on the Black River in Springfield, Vermont. The original LIHI Intake Review application was submitted in January 2014 by Comtu Falls Corporation, which has since been acquired by Gravity Renewables, the current Applicant. After resolving several of the issues raised during the Intake Review (discussed further in report,) Gravity Renewables submitted a timely and complete application on July 1, 2015. Comtu Falls is a 460 KW project operated as an instantaneous run-of-river facility and consists of a concrete gravity dam, flashboards, intake structure, concrete penstock, powerhouse, turbine/generator, transmission line, fish passage system and other appurtenances. The project is described in detail in Section II, Facility Description. Comtu Falls received an original FERC License on July 18, 1986, which was subsequently amended on June 1, 1995 to incorporate downstream fish passage facilities.

The Black River runs for approximately 40 miles from its origin at the Black Pond in Plymouth, Vermont until the confluence with the Connecticut River near Charleston, New Hampshire. The Black River is classified as “Good” water quality, with the exception of the 2.5-mile stretch prior to the confluence with the Connecticut, which is impaired for municipal sewer discharges. Comtu Falls is located in Springfield, Vermont, where approximately 5 additional hydropower facilities make use of the river’s significant drop through this small industrial town. No state or federal threatened or endangered species exist in the area impacted by the project, and limited recreational activities are available due to safety concerns and access limitations. No license violations were recorded on FERC e-library.

The original fish passage requirements for Comtu Falls only required passage during the spring migration season to support the Atlantic Salmon restoration program. In 2005, the Vermont Department of Fish and Wildlife requested the former owner, Comtu Falls Corporation, operate the fish passage during the fall period (September 15 – November 15) as well, and the applicant declined this request, citing the lack of record of success of the program. However, the new owner of the project, Gravity Renewables, re-engaged the Department after assuming ownership of the project and expressed support to meet the agency’s management objectives, including operating the passage facilities in the Spring and Fall to benefit riverine species as well as any remaining salmonids. In response to this proactive effort from the applicant, the Vermont Department of Environmental Conservation (VDEC) provided a letter of support for the LIHI application, concluding: “the Department believes the Comtu Falls hydroelectric project meets the intent of the LIHI’s criteria for certification as a low impact project,” and requesting the fall and spring operation be included as a condition of certification. The applicant also provided a record of communications between VDEC and USFWS from summer 2015 which supported the LIHI application and commended the owner for taking steps to steward the river resource and support management objectives.

Further outreach to resource agencies was limited as the applicant provided sufficient documentation of recent conversations to pass the LIHI criteria. In my opinion, the documentation provided is sufficient to determine the Comtu Falls Hydroelectric Project is in compliance with LIHI criteria and represents a strong candidate for certification.

## II. Recommendation

Based on a thorough review of the application and supporting documentation, public records, and communications with resource agencies, in my opinion the Comtu Falls Hydroelectric Project meets the requirements for LIHI certification for one, five-year term. The project has taken strong measures to promote environmental compatibility of the project, as mentioned by the Vermont Department of Environmental Conservation. I am including the following condition, which was requested by VDEC:

- The applicant shall operate the downstream fish passage facilities from April 1 through June 15 and from September 15 through November 15.

## III. Facility Description

The Comtu Falls Hydroelectric Project is located on the Black River on Mile 4.4 in Springfield, Vermont. Throughout a  $\frac{3}{4}$  stretch of Black River in Springfield, there are 5 hydro facilities. The project is located approximately  $\frac{1}{4}$  mile upstream of the Slack (P-8014) and Lovejoy (P-9649) impoundments, and  $\frac{1}{3}$  miles downstream of the Fellows (P-9648), Gilman (P-9650) project. The Facility is 4.5 miles upstream of the confluence of the Black River with the Connecticut River. The Black River is 40 miles long, and drains a basin of approximately 202 square miles. The River originates in the Black Pond in the town of Plymouth, VT, and is joined by several tributaries before it enters the Connecticut at Hoyt's Landing. Flows on the Black River are impacted by release schedule from the upstream U.S. Army Corps of Engineers North Springfield Lake Dam, and the existence of the hydroelectric facilities along the reach. The average flows are approximately 345 CFS, and the rapids and dams immediately upstream of Comtu Falls create high dissolved oxygen (DO) levels in the project area.

The Project has a rated capacity of 460 KW and **produces an average of 2,300,000 KWh annually.** The reservoir occupies 0.4 acres of surface area, and the total footprint of the physical facility is approximately 2,500 square feet. The project is located directly in the urban center of downtown Springfield, Vermont, and is surrounded by industrial buildings up to the water's edge on all sides.



Figure 2 – Comtu Falls Location on Black River



Figure 1 – Adjacent Dams on Black River

Project works consist of: (a) the 4-foot high, 128-foot long concrete gravity dam (low-hazard) with crest elevation of 392 feet mean sea level, tapering from 5.5 feet high at its western end to nothing with irregular bedrock comprising the last 17-18 feet, situated on the top of a natural falls; (b) 2-foot high flashboards over 74 feet of the dam; (c) impoundment of 0.4 acres; (d) intake structure at west side of the dam having 1.5-inch clear bar spacing and set at 45 degree angle to intake; (e) 6x6-foot, 65-foot long reinforced concrete penstock; (f) powerhouse with a 250-KW and 150-KW turbine-generator units; (g) 600-volt induction generator leads, a 600/4, 160-volt, 300-kVA transformer bank, 2,400 volt synchronous generator lead, 2,400/4,160-volt, 500-kVA transformer bank, 20-ft long, 4,160-volt transmission line; (h) fish passage facility consisting of a 2.5 foot wide by 2.0 foot high discharge weir at west abutment of dam and trashrack, leading to 3-foot deep plunge pool; and (i) other appurtenances.



Figure 3 - Comtu Falls Project Aerial View



Figure 4 - Comtu Falls Impoundment looking across from powerhouse

#### IV. Regulatory Status

On July 18, 1986, FERC issued a License for Minor Project jointly to the Comtu Falls Corporation (CFC) and Comtu Falls Associates to construct, operate, and maintain the 400 KW Comtu Falls Project at the existing Comtu Falls Dam on the Black River in Windsor County, Vermont. The Environmental Assessment (EA) process resulted in a Finding of No Significant Impact, with several agencies commenting to include requirements for flow requirements, water quality control, and the future need for fish passage. These requirements were included as articles in the FERC license, along with the Standard Terms and Conditions included for Minor Projects. Additional requirements were included as part of the Water Quality Certificate issued in 1983. The WQC was amended in 1989 after applicant requested amendment to reflect project's increased capacity from 250 KW to 400 KW. The 1989 amendment reaffirmed original WQC by requiring run-of-river operation, instantaneous streamflow of no less than 0.5 inches of water discharged over full crest of dam at all times, and all inflows passed over dam when they fall below 44 CFS.

On November 5, 1993, USFWS notified FERC and the applicant that downstream fish passage would be required at the project to support Atlantic Salmon restoration efforts on the Connecticut River. The FERC issued a Commission Order on September 22, 1994, pursuant to its authority under standard article 11 in the project license, requiring the Applicant to file a plan and schedule for installation of a downstream fish passage facility at the Project. Subsequent to FERC's order, the Comtu Falls

Corporation expressed opposition to installing the facility, citing ineffectiveness of the Atlantic Salmon stocking program. Nevertheless, the project complied by developing plans for a downstream fish bypass system and a Draft EA was published for comments on January 20, 1995. The Final EA was issued on June 1, 1995, with two alternative designs of the fish bypass system proposed by FERC and the USFWS. FERC agreed with the licensee's proposed bypass system and issued an order June 1, 1995 issuing an Order Amending License to authorize the construction of the system.

FERC issued an additional amendment on February 21, 1995, authorizing an increase in the installed capacity from 400 KW – 460 KW. This action was simply to reflect that during excessive spring runoff and infrequent storm events, the generating unit can produce a maximum output of 460 KW.

On September 6, 2005, the Vermont Agency of Natural Resources sent notification to CFC requesting that the project operate downstream passage facilities during the fall period, in addition to the spring migration operation. CFC objected by letter on September 15, 2005, citing the deliberate decision-making process used in the original FERC requirements. After nearly two decades of inadequate adult salmon returns, the Connecticut Atlantic Salmon Restoration Program was discontinued in 2012. On November 30, 2012, CFC requested comments from the VT Department of Environmental Conservation in support of their LIHI application. The VDEC responded on March 1, 2013 and again raised the issue of fall passage at the project site and questioning the spill conditions necessary for safe fish passage.

In September of 2014, Comtu Falls Project was acquired by Gravity Renewables. In the year since the acquisition, Gravity Renewables has provided adequate record of communications with resource agencies to suggest a new, more proactive and conciliatory approach to responsibly stewarding the environmental resource at their Project. On March 2015, Gravity Renewables voluntarily agreed to extend the operational period of downstream fish bypass facility to Fall, as requested by resource agencies. This new approach has been commended by the agencies, who noted: "Gravity Renewables has engaged the Department in productive discussions regarding fish passage needs at the project and expressed a willingness to work in collaboration with the Agency of Natural Resources (Agency) to meet its management objectives." (VDEC, June 1, 2015.) Furthermore, the Applicant provided record of email communications with USFWS and VDEC showing the iterative and attentive approach they have taken to support agency priorities.

## **V. Detailed Criteria Review**

### **A.) Flows**

- 1. Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?*

**Yes – PASS.** Flow requirements at the site were included in the Water Quality Certificate, issued in 1983, and subsequent Amendment issued on January 12, 1989. The 1989 amendment reaffirmed original

WQC by requiring run-of-river operation, instantaneous streamflow of no less than 0.5 inches of water discharged over full crest of dam at all times, and all inflows passed over dam when they fall below 44 CFS. The project maintains a headpond pressure transducer that accurately regulates water intake to the turbine and automatically controls minimum flow. When river flow drops below the minimum hydraulic capacity plus minimum flow requirement (44 CFS) the unit is automatically shut down and all river flow is passed over the dam. The project appears to be “true” run-of-river as the powerhouse is located adjacent to the dam with no bypass reach.

On November 5, 1993, USFWS notified FERC and the applicant that downstream fish passage would be required at the project to support fish restoration efforts. The FERC issued a License Amendment on June 1, 1995 to approve the installation of the proposed fish passage facility. The operations of this fish passage facility affect flows at the project and are therefore included in this criterion.

The applicant has successfully demonstrated compliance with this criterion by obtaining a letter from Vermont Department of Fisheries and Wildlife that clearly states the agency believes the Comtu Falls facility meets LIHI criteria for certification. They further state that the “Department does not have any information suggesting that the project is not operating in compliance with the conditions in its water quality certification.” Operation of the downstream fish passage facilities during the fall period is considerable progress for the site, as the original owner of the site declined previous agency requests to operate the fish passage facilities during the fall period (September 15 – November 15,) to support fish passage. VDFW further noted that although the passage is only required through 2016 for salmon, the operation of the passage facilities also benefits resident trout population. They requested Gravity Renewables continue to operate the passage facilities during Spring and Fall, and Gravity agreed to the condition. VDFW requested LIHI include this as a condition of certification, and I am therefore including this as requested.

Finally, the applicant provided annual certification of minimum flow requirements to FERC through 2012. FERC notified the applicant on May 6, 2014, that they are no longer responsible for providing the reports and the applicant was permitted to discontinue that practice.

**B.) Water Quality**

1. *Is the Facility either:*

a. *In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or*

**Yes – Go to B2.** See response for A.1. Vermont Department of Environmental Conservation has confirmed the facility is in compliance with the latest Water Quality Certification Amendment issued January 12, 1989.

b. *In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?*

N/A

2. *Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?*

**No – PASS.** Applicant responded “Yes,” due to an impairment occurring 2.5 miles downstream of the site. The impaired segment is impaired for Swimming and listed probable cause is municipal discharge/sewage. However, the impaired downstream segment is significantly further downstream of the project and does not include the bypass reach of the site; in fact, the 2012 Waterbody Report for the Black River segment impacted by Comtu Falls, VT 10-11, is classified as “Good,” and is not on the Section 303(d) list. In my opinion the answer to this question should read “No,” and applicant can move to Criteria C.

**On This Page**

- [Water Quality Assessment Status](#)
- [Causes of Impairment](#)
- [Probable Sources Contributing to Impairments](#)
- [TMDLs That Apply to This Waterbody](#)

**State:** [Vermont](#)

**Waterbody ID:** VT10-11

**Location:** Black River mainstem from rm 2.5 up to dam at North Springfield Reservoir

**State Waterbody Type:** River

**EPA Waterbody Type:** Rivers and Streams

**Water Size:** 6.3

**Units:** miles

**Watershed Name:** [Black-Ottawaquechee](#)

[Waterbody History Report](#)

**Data are also available for these years:**  
[2010](#)

**2012 Waterbody Report for Lower Black River**



**Water Quality Assessment Status for Reporting Year 2012**

**The overall status of this waterbody is Good.**

3. *If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?*

**Not Applicable – move to C.**

**C.) *Fish Passage and Protection***

1. Are anadromous and/or catadromous fish present in the Facility area or are they know to have been present historically?

**Yes – Go to C2.** Atlantic Salmon were stocked in the Black River to support restoration efforts to the Connecticut River. Although the efforts have been discontinued, the species still exist in the area and passage is required. Eel passage (Catadromous Species) is anticipated in the next 5-10 years.



2. Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?

**Yes – Go to C6.** See response to A.1. Vermont Department of Fisheries and Wildlife have provided letter supporting the LIHI certification and commending the new owner, Gravity Renewables, for working to comply with agency recommendations to support fish passage measures for both migratory and riverine fish species. The original License did not require passage, although reservation to require fish passage in the future was reserved. On November 5, 1993, USFWS notified FERC and the applicant that downstream fish passage would be required at the project to support Atlantic Salmon restoration efforts. After consultation with agencies, and environmental review, the FERC issued a License Amendment on June 1, 1995 to approve the installation of the proposed fish passage facility, the operations of which affect flows at the project and are therefore included in this criterion.

The Fish Passage facility required replacing 33 feet of flashboards with fixed concrete crest, installation of a 2.5 foot wide by 2 foot high discharge weir to produce a 20 CFS attraction flow to attract/convey emigrating smolts. The flow discharges into a 3-foot-deep plunge pool. In the License Amendment, the facility was required to be operated annually from April 1 through June 15. On September 6, 2005, the Vermont Agency for Natural Resources sent a request to the former owner of Comtu Falls requesting they also operate the facility during Fall migration seasons. The owner declined the request. During a LIHI certification request, this issue was again raised by the Vermont Department of Environmental Conservation. Since that time, the project was acquired by Gravity Renewables. In a letter supportive of their LIHI application, VDEC commended Gravity for their willingness to work with the agency regarding fish passage needs and mentioned the importance of operating the passage facilities during Spring and Fall for other riverine species. The VDEC concluded: “Given Gravity Renewables commitment to provide passage for both Atlantic salmon and resident species through both the spring and fall, the Department believes that the Comtu Falls hydroelectric project meets the intent of the LIHI’s criteria for certification as a low impact project. If the project is certified by LIHI, any certification should include a condition that states “the applicant shall operate downstream fish passage facilities from April 1 through June 15 and from September 15 through November 15” to reflect the agreement reached between the Agency and the applicant.” (Jeff Crocker, River Ecologist, VDEC, June 1 2015)

On June 1, 2015, in support of LIHI application USFWS sent notification to Gravity that it is likely the agencies will be seeking passage for American Eel (Catadromous species) in the next 5-10 years.: “As the Black River enters the CT River upstream of the Bellows Falls Project, and there is only one other obstruction between BF and Comtu Falls it is likely that the agencies will be seeking eel passage at Black River projects within the next 5 to 10 years.” (Melissa Grader, June 5, 2015). Comments were solicited from Melissa Grader on the specifics of when this would be required, but no response was received during the review period. Given that the term of LIHI certification is 5 years, and the applicant is required per Standard Article 11 to install fish passage facilities when required to do so by agencies, I do not find it necessary to include this as a condition of certification.

The Applicant has demonstrated a history of working responsibility with local agencies to support statewide resource management objectives, and in my opinion the condition regarding operation of downstream fish passage facilities requested by the agency should be included as a condition of certification.

6. Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?

**Yes – Go to C7.** See response to C1. Vermont Department of Fisheries and Wildlife have provided letter supporting the LIHI certification and commending the new owner, Gravity Renewables, for working to comply with agency recommendations to support fish passage measures for both migratory and riverine fish species.

7. Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?

**Yes – PASS.** See C1.

***D.) Watershed Protection***

1. Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?

**No – Go to D2.** The project is located in the heart of downtown Springfield, and due to the surrounding topography buffer zones are not feasible.

2. Has the Facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1, and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?

**No – Go to D3.**

3. Has the Facility owner/operator established through a settlement agreement with appropriate stakeholders, with state and federal resource agencies agreement, an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)?

**No – Go to D4.**

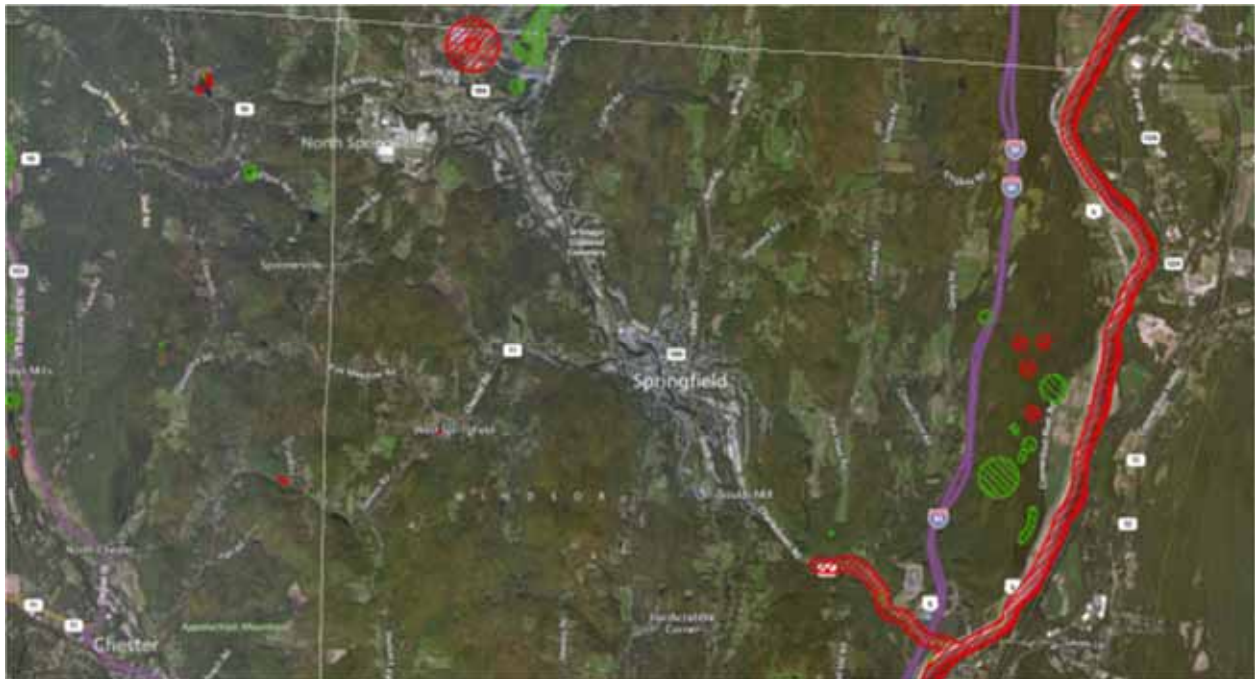
4. Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project?

**Not Applicable – PASS.** No license approved shoreland management plan is required. Article 14 of the Standard Terms and Conditions requires the Licensee to take reasonable measures to prevent soil erosion on adjacent lands. The project is located in an urban setting in downtown Springfield, VT, and no record of violation exists. Land use in the project vicinity is described in the 1995 Environmental Assessment as primarily urban development of the town, which is influenced by light industry and small retail businesses. As shown in the pictures provided under Criterion F. Recreation below, the project vicinity is bordered by commercial buildings including a bowling alley, light industry and office space.

**E.) Threatened and Endangered Species Protection**

1. Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?

**No – Pass.** The Applicant provided a letter from USFWS dated January 7, 2015, which states no federally listed or proposed, threatened or endangered species or critical habitat are known to occur in the project areas. The Vermont Biofinder tool was used to identify the possible existence of any state-listed species, and none occur in the project footprint or downstream reach of the project.



**F.) Cultural Resource Protection**

1. If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?

**Yes – PASS.** On November 17, 1988, the Vermont Agency of Development and Community Affairs sent a letter to Comtu Falls Corporation stating they reviewed the proposed activity at the site and concluded

“we have determined that this course of action will not affect any properties of historic, architectural or archeological significance that are listed on or eligible for inclusion in the National Register of Historic Places.” During the 1995 License Amendment process to install fish passage at the site, the Agency commented on the Environmental Assessment, disagreeing with the applicant’s finding of “No Effect,” as the project involved altering a dam listed as a contributing historic structure within the Springfield Historic District. However, the Agency concluded that altering the historic dam would result in an effect but that effect would not be adverse, provided the Applicant provide (1) documentation of the dam prior to project implementation (including prescribed set of photographs and site plan); and (2) comply with DOI’s standards for rehabilitation and alteration of the facility. The required documentation was submitted on October 14, 1995, and the Agency reviewed and found the documentation package “complete and excellent,” and accepted as compliance with their Agency’s requirements. Therefore, in my opinion the applicant has met this criterion.

**G.) Recreation**

1. *If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?*

**Yes – Go to G3.** Article 13 requires the Facility to allow free access to public to a reasonable extent. Note the pictures below that demonstrate lack of safe public access to the immediate project facilities. In 1997 FERC exempted the project from filing Form 80 recreation reports, noting: “available information indicates that there is no potential for recreational use at the project.”



2. *If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?*
3. *Does the Facility allow access to the reservoir and downstream reaches without fees or charges?*

**Yes – PASS.** Article 13 requires the Facility to allow free access to public to a reasonable extent. The Applicant confirmed they do not charge for access, although based on available information recreational access is very limited due to safety and accessibility concerns.

***H.) Facilities Recommended for Removal***

1. *Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?*

**No – Pass, Facility is Low-Impact.**

**VI. Public Comments**

No public comments were received for this project.

**Appendix A – Supporting Communications Log**

Note: The applicant provided a list of email communications between the US Fish and Wildlife Service and the Vermont Department of Environmental Conservation in support of the LIHI application (see below). In addition, the applicant obtained a letter (see below) from the VTDEC in support of the LIHI application. Given the comprehensive nature of this letter, the recency of agency comments submitted in the application (2015), and general lack of any environmental issues with the project identified during the review process, my contact with resource agencies was limited to one email to USFWS. As of the date of this report, USFWS has not replied. However, given the comprehensive and supportive nature of the comments provided by the agencies and included with the application, I do not find it necessary to withhold certification recommendation until a reply has been received.



**Vermont Department of Environmental Conservation**

Watershed Management Division

1 National Life Drive, Main 2

Montpelier, VT 05620-3522

<http://www.vtwaterquality.org>

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*Agency of Natural Resources*

**DISTRIBUTED ELECTRONICALLY**

June 1, 2015

Mark Boumansour  
Gravity Renewables Inc.  
1401 Walnut Street, Suite 220  
Boulder, Colorado 80302

RE: Comtu Falls Hydroelectric Project (FERC No. 7888)  
Comments on Low Impact Certification

Dear Mr. Boumansour:

Thank you for this opportunity to comment on Gravity Renewables Inc.'s application to the Low Impact Hydropower Institute (LIHI) for certification of the Comtu Falls Hydroelectric Project as a low impact hydroelectric project.

The Comtu Falls Hydroelectric Project originally received a water quality certification from the Department of Water Resources and Environmental Engineering (now the Department of Environmental Conservation – herein the Department) in 1982. In 1983, the certification was amended to authorize the project to install an additional generator and turbine to operate at minimum flows. In 1989, a second certification amendment was issued to reflect the project would install a single generator with a higher producing capacity than originally proposed. Conformance with the conditions of the certification and amendment would assure that the project does not violate Vermont Water Quality Standards. At this time, the Department does not have any information suggesting that the project is not operating in compliance with the conditions in its water quality certification.

Fish passage has been a longstanding issue at the Comtu Falls project. Pursuant to Condition F of the Comtu Falls water quality certification, the project is required to provide downstream fish passage for Atlantic salmon for the Connecticut River restoration effort. The previous owner of the project, the Comtu Falls Corporation, historically operated the downstream fish passage only during the spring season. The fall is an important period of downstream movement for fish. Salmon "pre-smolts" typically initiate their downstream movements during the preceding fall. In 2005, the Vermont Department of Fish and Wildlife requested that Comtu Falls Corporation operate the fish passage during the fall period (September 15 – November 15) similar to other hydroelectric projects located both upstream and downstream. The Comtu Falls Corporation had declined this request.

The new owner of the Comtu Falls Corporation, Gravity Renewables, has engaged the Department in productive discussions regarding fish passage needs at the project and expressed a willingness to work in collaboration with the Agency of Natural Resources (Agency) to meet its management objectives. While federal support for Atlantic salmon restoration program has ended, salmon were stocked through 2013 and will require downstream passage to be provided through at least 2016. However, passage needs could persist longer depending upon state management decisions. In light of

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*To preserve, enhance, restore, and conserve Vermont's natural resources, and protect human health, for the benefit of this and future generations.*

Mark Boumansour  
June 1, 2015  
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the passage needs for Atlantic salmon, Gravity Renewables has committed to operating passage facilities in both the spring and fall, as necessary to support restoration efforts.

While the water quality certification issued for the Comtu Falls project focused on passage for Atlantic salmon, maintaining passage from April 1 through June 15 and from September 15 through November 15 each year will also benefit other riverine species. Resident salmonids have the propensity to actively migrate throughout the year for a multitude of purposes; be it for spawning and rearing in the spring, to seek overwintering habitat in the fall, or in search of cold water refugia in the summer. The Agency recognizes the value of maintaining connectivity as it allows fish to seek the best available habitat and food resources, avoid predator interactions, and promotes genetic diversity. The Vermont trout management plan, further underlines the importance of habitat connectivity by stating, "the ability of trout to migrate within their environment is at a minimum important to their survival, and at most, essential to it".<sup>1</sup> Additionally, the water quality management plan for the Ottauquechee and Black River basin recognizes the impacts associated with dams, and specifically cites blocking aquatic organism passage, as a stress on rivers and streams.<sup>2</sup> After discussions with the Agency, the applicant has agreed to operate fish passage for riverine species during both the spring and fall, if passage is no longer required for Atlantic salmon. This agreement supports the Agency's management objective, to provide a recreational trout fishery in this reach, and is consistent with statewide and basin specific comprehensive plans.

Given Gravity Renewables commitment to provide passage for both Atlantic salmon and resident species through both the spring and fall, the Department believes that the Comtu Falls hydroelectric project meets the intent of the LIHI's criteria for certification as a low impact project. If the project is certified by LIHI, any certification should include a condition that states "the applicant shall operate downstream fish passage facilities from April 1 through June 15 and from September 15 through November 15" to reflect the agreement reached between the Agency and the applicant.

Sincerely yours,

Jeff Crocker  
River Ecologist

c: Rod Wentworth, VT DFW  
Lael Will, VT DFW  
Ken Cox, VT DFW  
John Warner, USFWS  
Melissa Grader, USFWS

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<sup>1</sup> The Vermont Department of Fish and Wildlife. 1993. The Vermont Management Plan for Brook, Brown and Rainbow Trout. Waterbury, Vermont.

<sup>2</sup> The Vermont Agency of Natural Resources. 2012. Basin 10 Water Quality Management Plan. Montpelier, Vermont.

From:

**From:** Grader, Melissa  
**Sent:** Friday, June 05, 2015  
**To:** Jon Petrillo  
**Cc:** Brittany Hinz; Eric Davis; Crocker, Jeff  
**Subject:** Re: FW: Comtu Falls: LIHI Follow---Up

Hi Jon,

Looking through the email chain and letter from ANR, I think the Service is fine with that particular issue (operating the d/s bypass in spring and fall for riverine species). However, if Gravity will be seeking PLUS certification, the extended timeframe for certification raises the issue of eel passage. As you probably know, TransCanada's CT River mainstem projects (Vernon, Bellows Falls and Wilder) are undergoing relicensing. We anticipate that eel passage will be a requirement of any new licenses issued for those projects.

As the Black River enters the CT River upstream of the Bellows Falls Project, and there is only one other obstruction between BF and Comtu Falls, it is likely that the agencies will be seeking eel passage at Black River projects within the next 5 to 10 years. Therefore, in order for FWS to support extended "PLUS" LIHI certification, we would want assurances that Gravity will agree to implement eel passage measures when requested by the agencies. Given that you will be operating the bypass in the fall anyway for riverine species, any requests likely will focus on upstream passage measures.

We'd be more than happy to discuss this issue further with you if needed.

Regards,  
Melissa Grader  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service - New England Field Office  
103 East Plumtree Road  
Sunderland, MA 01375  
413-548-8002 x124  
[melissa\\_grader@fws.gov](mailto:melissa_grader@fws.gov)

On Wed, Jun 3, 2015 at 12:40 PM, Jon Petrillo <[jon@gravityrenewables.com](mailto:jon@gravityrenewables.com)> wrote:

Hi Melissa,  
As a follow up to our conversation I am forwarding along the correspondence and comment letter from the VT ANR on our application for LIHI certification for the Comtu Falls project on the Black R., in Springfield, VT (P-7888).  
We will be re-submitting our application to LIHI next week and will include the response from VT and what you put together from the Service as part of the package. As we discussed, e-mail is fine.

Give me a call if you have any questions.  
Thanks in advance,  
Jon



**From:** Davis, Eric [<mailto:Eric.Davis@state.vt.us>]  
**Sent:** Wednesday, May 20, 2015 3:09 PM  
**To:** 'Jon Petrillo'; 'Mark Boumansour'; 'Jonathan Miller'; 'Brittany Hinz'  
**Cc:** Crocker, Jeff  
**Subject:** RE: Comtu Falls: LIHI Follow-Up

Hi Jon,

Apologies for the delayed response. I'd like to propose an alternative to the addition of explicit language supporting PLUS in this letter. I view this letter as a project review letter that precedes the LIHI application. I'd argue that it sets the stage for Gravity to request the PLUS criteria certification (i.e. Gravity Renewables has committed to operating passage facilities in both the spring and fall, as necessary to support Atlantic Salmon restoration efforts & This agreement...is consistent with statewide and basin specific comprehensive plans)

Rather than modifying this pre-application letter, would it be acceptable to Gravity, that after your application to LIHI and your request for PLUS certification, we file a letter concurring with your request and references our review letter?

Please let me know your thoughts,  
Eric

**Eric Davis, River Ecologist**  
1 National Life Drive, Main 2  
Montpelier, VT 05620-3522

**From:** Jon Petrillo [<mailto:jon@gravityrenewables.com>]  
**Sent:** Monday, May 04, 2015 11:42 AM  
**To:** Davis, Eric; 'Mark Boumansour'; 'Jonathan Miller'; 'Brittany Hinz'  
**Cc:** Crocker, Jeff  
**Subject:** RE: Comtu Falls: LIHI Follow-Up

Hi Eric,

Thanks for the chance to review the ANR's LIHI letter for Comtu Falls.  
A couple of observations/requests:

- Pg. 1 para. 3 & 4: Comtu Falls Corporation is still the owner of the project, however the Corporation is now owned by Gravity.
- Can you add more explicit language supporting our request for PLUS criteria certification as it relates to LIHI Condition D (Fish Passage) and F (Rare Species)? Descriptions of those criteria are provided in a previous message on this chain.

Happy to discuss more if desired.

Thanks,  
Jon

**From:** Davis, Eric [<mailto:Eric.Davis@state.vt.us>]  
**Sent:** Thursday, March 19, 2015 10:22 AM  
**To:** 'Jon Petrillo'; Crocker, Jeff  
**Cc:** 'Mark Boumansour'; 'Brittany Hinz'  
**Subject:** RE: Comtu Falls: LIHI Follow-Up

Good morning Jon and Mark,

Thanks for making the trip up to Montpelier last week. It was good to meet you as well and the discussion was productive.

We appreciate your willingness to engage with the Agency, collaborate to help meet management objectives, and ultimately help steward the river resource. Given our productive discussion, the Agency is supportive of the project qualifying under the 'PLUS' standard for the fish passage and rare and threatened species criteria. While the decision will ultimately be LIHI's, we will work on language to include in our letter that supports qualification under the 'PLUS' standard. We hope to share something with you over the next week or so.

Thanks,  
Eric

**Eric Davis, River Ecologist**  
1 National Life Drive, Main 2  
Montpelier, VT 05620-3522

**From:** Jon Petrillo [<mailto:jon@gravityrenewables.com>]  
**Sent:** Tuesday, March 17, 2015 7:52 AM  
**To:** Davis, Eric; Crocker, Jeff  
**Cc:** 'Mark Boumansour'; 'Brittany Hinz'  
**Subject:** Comtu Falls: LIHI Follow-Up

Eric and Jeff,  
Good to meet you last week. We appreciate the time spent.

I wanted to follow-up on the "PLUS" certification period for LIHI that we discussed. Below are 2 criteria we feel make us eligible for up to 5 additional years of LIHI certification. There are no guarantees on the LIHI decision, but support from the ANR would certainly help strengthen our application.

**LIHI Criteria D – Downstream Fish Passage and Protection:** (p. 8)

Qualifying Criteria:

Bonus Criteria: operation of the d/s facility during fall migration period would primarily benefit resident spp. and is consistent with basin-wide (and statewide) mgt. efforts of the ANR

**LIHI Criteria F – Rare & Threatened Spp.** (p. 10)

Qualifying Criteria:

Bonus Criteria: Focus on collaboration with ANR's mgt. goals for rare Atl. salmon

Attached is the full document outlining the new LIHI certification criteria for your reference. Let us know what you think after you've had a chance to digest.

Thanks,  
Jon