LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION

CLEMENT HYDROELECTRIC PROJECT
(FERC NO. 2966)

Clement Dam Hydroelectric, LLC
Morristown, New Jersey

October 2019

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(LIHI Certificate #117)

1.0 Introduction

This is an application to the Low Impact Hydro Power Institute (LIHI) for the recertification of the Clement Hydroelectric Project (Clement, or Project), LIHI Certificate No. 117. Clement received its initial certification from LIHI on December 31, 2014. Clement is located on the Winnipesaukee River, off Mill Street, in Tilton, Belknap County, NH.

Clement was issued a 50-year license from the Federal Energy Regulatory Commission (FERC) as Project No. P-2966 on May 17, 1982, which was amended on March 18, 1983, and changed the license from a minor license to a major license, less than 5 MW. The purpose of the amendment was to increase the height of the dam by 11 feet, install new flashboards and appurtenant structures to accommodate greater power generation at the site. The current FERC license expires on April 30, 2032. Clement Dam Hydroelectric, LLC, a wholly owned indirect subsidiary of Eagle Creek Renewable Energy, LLC (Eagle Creek), is the owner and Licensee of the Project.

As noted in the previous LIHI application, there is no file copy of a Water Quality Certificate. As part of this application for recertification, the New Hampshire Department of Environmental Service (NHDES) was contacted. The NHDES provided documentation of Water Quality Certificates that appeared to be issued for construction but confirmed that although the FERC license references details from a Water Quality Certificate, no file copy with the particular language noted in the FERC license is available.

The Winnipesaukee River is an approximately 17-mile-long river that connects Lake Winnipesaukee, the largest lake in New Hampshire, with the Pemigewasset and Merrimack rivers in Franklin, NH. The river's drainage area is approximately 488 square miles. Clement is located at approximately River Mile 5 and has an approximate drainage area of 471 square miles (based on the drainage area at the USGS gage 0108100 Winnipesaukee River at Tilton, NH located

approximately .5 miles upstream of Clement dam). There are 6 dams associated with hydroelectric projects located along the Winnipesaukee River, Lakeport (RM 16.5), Avery (RM 15), Lochmere (RM 10), Clement (RM5), Riverbend/Stevens Mill (RM 1.5) and Franklin Falls (RM 0.5). Figure 1 below identifies the location of the upstream and downstream dams along the river in proximity to Clement. The Lochmere Hydroelectric Project (Lochmere), located approximately 5 miles upstream of Clement, is owned by the State of New Hampshire and leased to HDI Associates I Partnership (HDI), which is a subsidiary of Eagle Creek Renewable Energy, LLC (Eagle Creek). The Stevens Mill Hydroelectric Project (LIHI Certificate No. 123), located approximately 3.5 miles downstream of Clement, is owned and operated by Franklin Power, LLC, a wholly owned indirect subsidiary of Eagle Creek. Flows in the Winnipesaukee River are controlled by the NHDES from Lakeport Dam, at the outlet of Lake Winnipesaukee. The area adjacent to and upstream of Clement is a mix of developed land of varying intensities, generally industrialized, whereas the areas downstream are more forested.

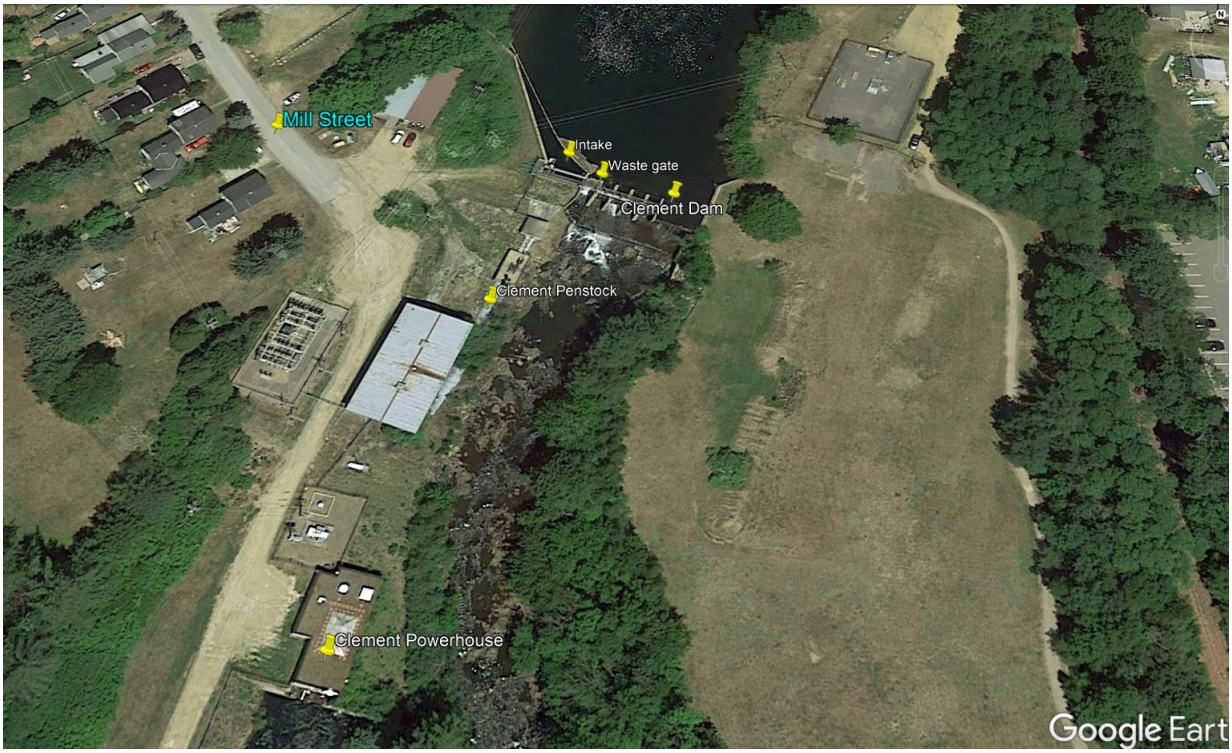
FIGURE 1 HYDROELECTRIC DAMS UPSTREAM AND DOWNSTREAM OF CLEMENT

1.1 FACILITY DESCRIPTION

The Project, which was constructed in the early 1980's, began commercial operation in 1984 and is operated as run of river, where inflow to the impoundment generally matches outflow from a combination of generation and bypass flow, and water is not stored for generation.

The Clement dam, approximately 120 feet long, consists of a 16.5-foot high concrete spillway section topped with 3-foot high wooden flashboards and a gated spillway/sluiceway section that includes 5 gates (one waste gate, downward opening and 4 spillway gates, upward opening). The impoundment has minimal storage at the normal water surface elevation of 442.4 feet mean sea level (MSL). The intake, located on river right (looking downstream), leads to a 12-foot diameter steel penstock which extends from the intake, under a blockhouse, to the powerhouse, a distance of approximately 325 feet. The powerhouse, which is located on the right side of the bypass channel, contains one horizontal Kaplan turbine-generator with a rated capacity of 2400-kilowatt, and appurtenant facilities. The tailrace returns flow to the Winnipesaukee River approximately 600 feet downstream of the dam. The general arrangement of key project features at Clement are shown in Figure 2, below.

FIGURE 2 GENERAL ARRANGEMENT OF CLEMENT



The FERC license requires a continuous minimum flow of 235 cubic feet per second (cfs) below the tailrace/powerhouse, or inflow to the reservoir, whichever is less, for the purpose of protecting and enhancing aquatic resources. A portion of the minimum flow, 30 cfs, is released at the dam, for the purpose of protecting aquatic resource in the bypass reach.

Memorandum of Agreement

In August 2014, the United States Fish and Wildlife Service (USFWS) and Eagle Creek (collectively "the Parties") entered into a Memorandum of Agreement (MOA), the purpose of which was to establish a plan and schedule to address fish passage and minimum flows at Eagle Creek's hydroelectric projects in New Hampshire (the sites). [1]

The MOA was executed with a 5-year term and an option for the Parties to extend the term by mutual agreement. Over the 5-year term, the Parties worked cooperatively to address fish passage and minimum flow issues at the sites. The Parties have also agreed to an interim extension of the MOA through March 2020 to allow the Parties to conduct site reviews of downstream fish passage facilities and minimum flows with the purpose of extending the MOA for an additional term based

[1] https://lowimpacthydro.org/wp-content/uploads/2015/02/Clement-Dam_Appendix-C-1_2014-08-14-ECREM-USFWS-MOA.pdf

on discussions resulting from the site reviews (included as Appendix A – Interim Extension of the MOA).

In the spirit of the MOA, Eagle Creek worked in cooperation with the USFWS and New Hampshire Fish and Game (NHFG) to review Project minimum flows and develop a design for downstream fish passage and protection facilities at Clement. Construction of the downstream fish passage facilities was completed in 2016 prior to the downstream fish passage season (American Eel generally 8/15 to 11/15, River Herring generally 9/15 to 11/15) and have been successfully operated annually during the downstream migration season since being placed in service. The downstream fish passage and protection measures include:

- installation of new 3/4" opening racks at the entrance to the penstock to exclude downstream migrants from the unit intake
- use of the existing concrete sluiceway located immediately downstream of the racks to pass 11 cfs and bypass downstream migrants past the dam
- modifications to the existing waste gate section of the spillway for a lighted bypass that includes installation of shaped wall panels anchored to existing concrete and a shaped floor bolted to the top of the existing waste gate panel to maintain 39 cfs bypass flow and bypass downstream migrants past the dam
- a new plunge pool modified at the exit with a new weir assembly and discharge chute located downstream of the waste gate spillway on the apron of the dam which will convey downstream migrants to the bypass and river
- a 4' skirted boom upstream of the intake to guide downstream migrants to the lighted waste gate.

Included as an Appendix B (CEII) is the general arrangement of the downstream fish passage facilities.

As established in consultation with the USFWS and NHFG during a 2015 site review, the current FERC ordered minimum flow is acceptable. Flow from the downstream fish passage facilities (50 cfs) is attributable to the 235 cfs min flow for the project and replaces the bypass flow at the dam (30 cfs) during the downstream passage season.

LIHI Certification Compliance

Clement was issued LIHI certification on December 31, 2014 for a 5-year term with 4 conditions. Each of the four conditions have been satisfied, the following is a summary of the condition and status for achieving completion.

- ***Condition satisfied 2018.*** **Condition 1:** Facility owner shall complete the agreed upon water quality sampling in 2015, receive satisfactory determination from New Hampshire Department of Environmental Service that facility does not impact water quality, and provide the results to LIHI by December 31, 2015.

  Water quality sampling was completed, and the results were submitted the to NHDES. In a November 2018 letter to LIHI, NHDES confirmed that the results of the water quality monitoring and sampling demonstrated that the Winnipesaukee River in the vicinity of Clement meets state water quality standards.

- ***Condition satisfied 2016.*** **Condition 2:** Facility owner will comply with updated fish passage installation plans in 2015 as specified in the MOA with USFWS, obtain written approval of design by USFWS, and report results to LIHI by December 31, 2015.

  In Fall 2015, USFWS and NHFG reviewed and accepted final conceptual drawings resulting from consultations between all parties during the summer of 2015. Permits and approvals for construction were received by the US Army Corps of Engineers (ACOE), NHDES and FERC by Spring 2016 and construction of the downstream fish passage facilities was completed in August 2016.

- ***Condition satisfied 2016.*** **Condition 3:** Facility owner will complete minimum flow review in 2015 as prescribed in the MOA with USFWS, obtain written approval by USFWS, and provide results to LIHI by December 31, 2015.

  Minimum flows were reviewed with USFWS and NHFG in July 2015, and existing minimum flows were determined to be adequate.

- ***Condition satisfied 2016.*** **Condition 4:** Facility owner will complete the Operations and Flow Monitoring Plan as required by the MOA, obtain written approval of plan by USFWS, and provide results to LIHI by December 31, 2015.

  After the construction of the downstream fish passage facilities was completed, Eagle Creek forwarded a draft of the Operations and Flow Monitoring Plan, required by the MOA, to the USFWS for review and comment. Comments were incorporated and the USFWS approved the plan in August 2017. The Operations

and Flow Monitoring Plan is a living document and continues to be updated in cooperation with the USFWS.

TABLE 1 FACILITY DESCRIPTION INFORMATION – CLEMENT PROJECT LIHI #117

Item	***Information Requested***	***Response (and reference to further details)***
Name of the Facility	Facility name (FERC Project Name)	Clement Hydroelectric Project (FERC Project No. 2966)
Location	River name (USGS proper name)	Winnipesaukee River
	Watershed name	Winnipesaukee River Basin
	Nearest town, county, and state	Tilton, Belknap County, NH (river right) Northfield, Merrimack County, NH (river left)
	River mile of dam above next major river	Clement dam is located at approximately River mile 5 above the confluence with the Pemigewasset and Merrimack Rivers
	Geographic latitude / longitude of dam	43° 26’ 27.41” N / 71° 35’ 44.01” W
Facility Owner	Application contact names: Please see Section B-4 for the Facility Contacts Form.	Ms. Susan Giansante Eagle Creek Renewable Energy, LLC 65 Madison Ave, Suite 500 Morristown, NJ 07960 Mr. Robert Gates Clement Dam Hydroelectric, LLC 65 Madison Ave, Suite 500 Morristown, NJ 07960
	Facility owner company and authorized owner representative name	Clement Dam Hydroelectric, LLC Authorized representative: Mr. Robert Gates
	FERC licensee company name (if different from owner)	N/A, same as owner

Item	*Information Requested*	*Response (and reference to further details)*
Regulatory Status	FERC Project Number (e.g., P-xxxx), issuance and expiration dates	Clement (FERC Project No. 2966) • 50-year license • Issued May 17, 1982 • Expires May 17, 2032
	FERC license type or special classification (e.g., "qualified conduit")	Major Project License, less than 5 MW
	Water Quality Certificate identifier, issuance date, issuing agency name	A Water Quality Certificate (WQC) was issued by the New Hampshire Water Supply and Pollution Control Commission on May 18, 1982. Appendix C includes a Water Quality Certificate, NEDOD-R-14-82-036F. As noted in the Introduction, the documents included in Appendix C appear to be related to construction. Although the 1983 FERC Order Amending License makes reference to minimum flows prescribed in the Water Quality Certificate dated May 18, 1982 (the same date as one of the documents included in Appendix C), the documents included in Appendix C do not include this referenced language. Based on consultation with NHDES, a file copy of the Water Quality Certificate, other than those provided in Appendix C, cannot be found.

Item	*Information Requested*	*Response (and reference to further details)*
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	1982 FERC Order Issuing License (Minor) https://elibrary.ferc.gov/IDMWS/common/OpenNat.asp?fileID=13423295 1982 Water Quality Certificate (Please see above) 1983 FERC Order Amending License (Minor to Major) https://elibrary.ferc.gov/IDMWS/common/OpenNat.asp?fileID=13424241 1997 FERC Environmental Inspection Report (Please see Appendix D, not available via link to elibrary) 2005 FERC approval for Clement Dam to permit the town of Tilton to install fishing piers and car-top boat launch within Project Boundary https://elibrary.ferc.gov/IDMWS/common/OpenNat.asp?fileID=10476184 2006 FERC Environmental Inspection Report https://elibrary.ferc.gov/IDMWS/common/OpenNat.asp?fileID=10976242
Powerhouse	Date of initial operation	1984
	Total name-plate capacity (MW)	2.4 MW, no change since last LIHI certification
	Average annual generation (MWh)	10,952 MWh (April 1, 2002 to June 30, 2019, excluding outages) 9,856 MWh (July 1, 2014 to June 30, 2019, excluding outages) Generally, no change since last certification.
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	Run-of-river, no change since last certification.

Item	*Information Requested*	*Response (and reference to further details)*
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	One unit, horizontal Kaplan Maximum and minimum hydraulic capacity: 1200 cfs, 150 cfs respectively
	Trashrack clear spacing (inches), for each trashrack	¾" clear spacing
	Dates and types of major equipment upgrades	N/A (no changes since 2014 LIHI Certification)
	Dates, purpose, and type of any recent operational changes	As described in the Introduction, during the downstream fish passage season additional flow is released from the dam based on the MOA with USFWS. Flow from the downstream fish passage facilities (50 cfs) is attributable to the 235 cfs min flow for the project and replaces the bypass flow at the dam (30 cfs) during the downstream passage season from mid-August to mid-November.
	Plans, authorization, and regulatory activities for any facility upgrades	There are no plans for Project upgrades at this time.
Dam or Diversion	Date of original construction	Clement was constructed at a hydroelectric site that was operating in the early 1900's. The original A-frame structure was breached in 1943 and was replaced by a new concrete dam under the current license.
	Dam height	16.5 feet spillway topped with 3' flashboards
	Spillway elevation and hydraulic capacity	Spillway elevation is 439.4 feet MSL (top of concrete); 442.4 feet MSL with flashboards Hydraulic capacity of spillway, no flashboards, all gates full open, at normal reservoir elevation of 442.4 feet MSL is 7,320 cfs.

Item	*Information Requested*	*Response (and reference to further details)*
	Tailwater elevation	Normal tailwater fluctuation between 409 feet and 412 feet MSL
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	Steel penstock, 325’ long
	Dates and types of major infrastructure changes	No major infrastructure changes have occurred since the 2014 LIHI submission, except changes to the waste gate to accommodate downstream fish passage. These changes, as described in the Introduction, include installation of shaped wall panels anchored to the existing concrete piers and a shaped floor bolted to the top of the existing waste gate panel to allow for a flow of 39 cfs to be maintained in the bypass and attract downstream migrants through the waste gate past the dam.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power
	Water source	Winnipesaukee River
	Water discharge location or facility	Winnipesaukee River
Impoundment and Watershed	Authorized maximum and minimum water surface elevations (ft. MSL)	442.4 ft MSL, normal reservoir elevation No changes since last certification.
	Normal operating elevations and normal fluctuation range	Same as above, run of river

Item	*Information Requested*	*Response (and reference to further details)*
	Gross storage volume and surface area at full pool	Gross storage volume: As stated in the FERC license, the reservoir has minimal pondage Surface area: 2.5 acre reservoir (reference 1997 FERC Environmental Inspection Report included in Appendix D) No changes since last certification. Run of river where inflow to the impoundment generally matches outflow from a combination of generation and bypass flow and water is not stored for generation. The FERC license requires a continuous minimum flow of 235 cfs below the tailrace/powerhouse, or inflow to the reservoir, whichever is less, for the purpose of protecting and enhancing aquatic resources. A portion of the minimum flow, 30 cfs, is released at the dam, for the purpose of protecting aquatic resource in the bypass reach. Based on the MOA, a portion of the minimum flow of at the dam is modified during the downstream fish passage season to 50 cfs and is attributable to the continuous minimum flow of 235 cfs generally from mid-August to mid-December.

Item	*Information Requested*	*Response (and reference to further details)*
	Describe requirements related to impoundment inflow, outflow, up/down ramping and refill rate restrictions.	For drawdowns and refill: • *The general guideline for drawdowns is a rate of 1' per hour.* • *As a general guideline, typical refilling rate is passage of 70% inflow and retention of 30% inflow until normal head pond elevation is achieved. Once the normal elevation has been restored, normal operations are resumed.* The current version of the Operations and Flow Monitoring Plan (included as Appendix E) completed under the MOA, outlines Project operations as related to the noted parameters. Although previously reviewed and approved by the USFWS, the Operations and Flow Monitoring Plan, as a living document, will continue to be updated, as needed. The USFWS recently provided comments on the Plan, subsequent to recent reviews of the MOA downstream fish passage facilities. This Plan and the Fishway Operations & Maintenance Plan will be updated based on continued discussions with the USFWS as the parties work together to extend the term of the MOA.
	Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile, indicate which upstream dams have downstream fish passage.	Lakeport Dam, owned by NHDES, FERC Project No. 6440, at RM 16.5, no downstream fish passage. Avery Dam, owned by Avery Hydro, LLC, FERC Project No. 6752, at RM 15, no downstream fish passage. Lochmere Dam, owned by the NHDES, (FERC Project No. 3128), located approximately 5 miles upstream of the Clement dam, at RM 10, includes downstream fish passage facilities.

Item	*Information Requested*	*Response (and reference to further details)*
	Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile indicate which downstream dams have upstream fish passage	Stevens Mill Dam, owned by Franklin Power LLC, FERC Project No. 3760, LIHI Certificate No. 123, is located approximately 3.5 miles downstream at river mile 1.5, no upstream fish passage. Franklin Falls Dam, owned by Franklin Falls Hydro Electric Co, FERC Project No. 6950, at RM 0.5, no upstream fish passage.
	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	There are no operating agreements with upstream or downstream reservoirs.
	Area inside FERC project boundary, where appropriate	Lands within the project boundary encompass to El 445 feet MSL (Reference Clement Exhibit G https://lowimpacthydro.org/wp-content/uploads/2015/02/Clement-Dam_Appendix-3-1_Project-Layout-FERC-Appendix-F-G.pdf)
Hydrologic Setting	Average annual flow at the dam	Average annual flow (1937-2019) as measured at USGS Gage 01081000 Winnipesaukee River at Tilton, NH, located approximately ½ mile upstream of the Clement dam is 736 cfs.

<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (and reference to further details)</th></tr>
<tr><td rowspan="3"></td><td>Average monthly flows</td><td>Average monthly flows (1937-2019) as measured at USGS Gage 0108100 Winnipesaukee River at Tilton, NH, located approximately ½ mile upstream of the Clement dam:

Month — cfs
January 890 cfs
February 903 cfs
March 955 cfs
April 1,170 cfs
May 977 cfs
June 744 cfs
July 492 cfs
August 434 cfs
September 429 cfs
October 447 cfs
November 607 cfs
December 786 cfs</td></tr>
<tr><td>Location and name of relevant stream gauging stations above and below the facility</td><td>River flow data is based on flow data from USGS Gage No. 0108100 Winnipesaukee River at Tilton, NH with a drainage area of 471 square miles; the gage is approximately 0.5 river miles upstream of the Clement dam. Due to the proximity of the gage to the dam, discharge data from the gage was not prorated as gage data is representative of Clement.</td></tr>
<tr><td>Watershed area at the dam</td><td>The drainage area at the Clement dam is approximately 471 square miles, as measured at the upstream USGS gage.</td></tr>
<tr><td rowspan="2">Designated Zones of Effect</td><td>Number of Zones of Effect</td><td>3 Zones of Effect (ZoE).</td></tr>
<tr><td>Upstream and downstream locations by river miles</td><td>Impoundment ZoE:
RM 5.5 to RM 5
Bypassed Reach ZoE:
RM 5 to RM 4.87
Downstream ZoE:
RM 4.9 to RM 4.8</td></tr>
</table>

Item	*Information Requested*	*Response (and reference to further details)*
	Type of waterbody (river, impoundment, by-passed reach, etc.)	Impoundment ZoE: Impoundment Bypassed Reach ZoE: Bypassed Reach Downstream ZoE: Riverine
	Delimiting structures	N/A
	Designated uses by state water quality agency	All three ZoEs are within the Winnipesaukee River Basin, on the mainstem of the Winnipesaukee River, and are designated as Class B waters.
Additional Contact Information	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	Please see **Section 4** for the Project Contacts Form
	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	N/A
Photographs and Maps	Photographs of key features of the facility and each of the designated zones of effect	Please see Appendix F for photographs of key features of the facility. Designated ZOEs are shown below in Figure 3.
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	Please see Appendix G for aerial photos of facility area and river basin.

1.2 STANDARDS SELECTIONS

Zones of Effect

Three zones of effect (ZoEs) will be evaluated for each Criterion: (1) Impoundment, (2) Bypass and (3) Downstream. These ZoEs are described below and illustrated in Figure 3, the aerial photograph that follows.

- Impoundment ZoE - the impoundment zone of effect extends from the dam about a half mile upstream to the upper limit of the FERC project boundary, just past the Bridge Street / School Street crossing of the Winnipesaukee River.
- Bypass ZoE - the bypass zone of effect extends from the dam about 700 feet downstream along the river channel to the junction with the limit of the tailrace (Downstream ZoE).
- Downstream ZoE - the downstream zone of effect extends from the powerhouse, past the confluence with the bypass section of the river channel, approximately 800 feet downstream.

FIGURE 3 AERIAL VIEW ILLUSTRATION OF ZONES OF EFFECT

2.0 STANDARDS MATRICES[2]

IMPOUNDMENT ZONE OF EFFECT

Criterion		Alternative Standards				
		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 Resource Protection	x				
H.	Recreational Resources			x		

BYPASSED REACH ZONE OF EFFECT

Criterion		Alternative Standards				
		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 Resource Protection	x				
H.	Recreational Resources			x		

DOWNSTREAM ZONE OF EFFECT

Criterion		Alternative Standards				
		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 Resource Protection	x				
H.	Recreational Resources			x		

[2] Shaded cells represent Criteria for which Alternative Standards do not exist (e.g. Water Quality does not have an Alternative 4)

3.0 SUPPORTING INFORMATION

3.1 ECOLOGICAL FLOWS STANDARDS

3.1.1 CLEMENT IMPOUNDMENT

CRITERION	*STANDARD*	*INSTRUCTIONS*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to dam/diversion structures and demonstrate that there are no bypassed reaches at the facility. • For run-of-river facilities, provide details on operations and demonstrate that flows, water levels, and operation are monitored to ensure such an operational mode is maintained. If deviations from required flows have occurred, discuss them and the measures taken to minimize reoccurrence. • In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones only, explain water management (e.g., fluctuations, ramping, refill rates) and how fish and wildlife habitat within the zone is evaluated and managed. ***NOTE:*** this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

- The Impoundment ZoE does not have a bypassed reach.

- The NHDES issued a WQC for the Project on May 18, 1982.

- FERC issued an amended license for the Project on March 18, 1983 which included Project works consisting of a reservoir having minimal pond storage, a normal water surface elevation of 442.4 feet MSL.

- The Project is operated as run of river where inflow to the impoundment generally matches outflow from a combination of generation and bypass flow and water is not stored for generation. Run of river operation is recongized in the MOA.

- Generation is controlled automatically from a PLC, located in the powerhouse, and is automatically adjusted to maintain the head pond elevation based on a pond level sensor located at the dam, such that outflow through the turbines matches inflow. (Please see Appendix E, Operations and Flow Monitoring Plan, as reference to this bullet and bullet below).

  If inflow is less than the minimum hydraulic capacity of the unit, the unit is shut down manually and inflow passes at the dam through spillway gates that are automatically modulated to maintain head pond elevation. There are four spillway gates, two of these upward opening gates are operated automatically to maintain pond level, one gate acts as the primary source for maintaining pond level, the second as redundancy. The other two spillway gates are operated manually.

  If inflow is greater than the capacity of the unit, the balance of flow is passed over the dam with the modulating gates.

  If the generating unit is taken out of service for maintenance or the unit trips, the head pond rises, and the modulating gate(s) adjust to maintain pond level.

- During drawdown conditions, run of river is provided through a combination of generation and / or operation of the four upward opening spillway gates to maintain the headpond at the target drawdown elevation. The general guideline for drawdowns is a rate of 1' per hour. As a general guideline, typical refilling rate is passage of 70% inflow and retention of 30% inflow until normal head pond elevation is achieved. Once the normal elevation has been restored, normal operations are resumed.

- No filings of run of river deviation have been filed with FERC since the last LIHI certification.

3.1.2 CLEMENT BYPASS

CRITERION	*STANDARD*	*INSTRUCTIONS*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

- The March 18, 1983 Amended FERC License summarizes that on April 13, 1982, the New Hampshire Water Resources Board (WRB) ordered the Licensee to release from the project dam a continuous minimum flow to maintain aquatic resources in the bypass reach between the dam and tailrace. The Water Quality Certificate issued on May 18, 1982 included the WRB's 30 cfs requirement as a condition. The US Department of the Interior and the US Environmental Protection Agency also recommended that a 30 cfs minimum flow be released to the bypass reach. Article 33 of the FERC license requires that:

> *The Licensees shall discharge from the Clement Dam Project, a continuous minimum flow of 235 cubic feet per second, as measured below the tailrace of the powerhouse, or inflow to the reservoir, whichever is less, for the purpose of protecting and enhancing aquatic resources in the Winnipesaukee River. Licensees shall discharge from the project dam 30 cubic feet per second of the required flow of 235 cubic feet per second for the purpose of protecting the aquatic resources in the 600-foot reach of the Winnipesaukee River between the project dam and powerhouse. These flows may be temporarily modified if required by operating emergencies beyond the control of the Licensees, and for short periods for fishery management purposes upon mutual agreement between the Licensees and the New Hampshire Department of Fish and Game.*

- As described in the Introduction, a MOA was executed by Eagle Creek and the USFWS in 2014. Under the terms of the MOA, minimum flows and bypass flows were reviewed by both parties in 2015. The USFWS agreed that the minimum bypass flow required by the FERC license was acceptable. Additionally, flow from the downstream fish passage facilities (50 cfs) is attributable to the 235 cfs min flow for the project and replaces the bypass flow at the dam (30 cfs) during the downstream passage season. In a 2017 email, USFWS confirmed approval of the bypass flow (Please see Appendix H).

- Eagle Creek filed an annual statement of minimum flow compliance at Clement for 2015 with FERC [3]. The correspondence noted that FERC had issued a letter to the previous license holder that there was no license requirement for such annual statements and the practice could be discontinued however, in the event of a deviation, the Licensee would file a report within 30 days. No filings of minimum flow deviation have been filed with FERC since the last LIHI certification.
- Flow into the bypass during drawdowns and refilling is described in the Impoundment ZoE above (last bullet).

3.1.3 CLEMENT DOWNSTREAM

CRITERION	*STANDARD*	*INSTRUCTIONS*
A	2	• Agency Recommendation (see Appendix A for definitions): Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

[3] https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14163606

- As summarized in the March 1983 FERC license, the USFWS also recommended that the Licensees maintain a continuous minimum flow release of 235 cfs, or inflow, if less, as measured below the project powerhouse, to protect downstream aquatic habitat. The recommended 30 cfs release from the project dam would be included in the 235 cfs recommended release from the Project.

- The Licensee maintains a minimum flow of 235cfs, or inflow if less, (consisting of bypass flows plus turbine releases) below the tailrace of the powerhouse and as described in the Bypass ZoE above.

3.2 WATER QUALITY STANDARDS

3.2.1 ALL ZOES

CRITERION	*STANDARD*	*INSTRUCTIONS*
B	3	Site-Specific Monitoring Studies: • If facility is located on a Water Quality Limited river reach, provide a link to the state's most recent impaired waters list and indicate the page(s) therein that apply to facility waters. If possible, provide an agency letter stating that the facility is not a cause of such limitation. • Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required. • Present recent water quality data from the facility or from other sources in the vicinity of the facility (e.g., data collected from the state, watershed associations, or others who collected data under generally accepted sampling protocols and quality assurance procedures) and explain and demonstrate how it satisfies current applicable water quality standards including designated uses, or provide a letter from the appropriate state or other regulatory agency accepting the data

- The Project's 1983 FERC licenses references a Water Quality Certificate (WQC) issued for the Clement Project on May 18, 1992, however, as previously noted in Table 1, the documents included in Appendix C appear to be related to construction. As confirmed with NHDES, a file copy of the Water Quality Certificate associated with and referenced in the FERC license is not available.

- Under the current LIHI Certification conditions (Condition 1), Essex Hydro completed water quality sampling on behalf of Eagle Creek during the summer of 2017 based on a protocol identified in 2013 correspondence from NHDES. In a November 30, 2018 letter to LIHI, NHDES confirmed that the results of the water quality monitoring and sampling completed by Essex Hydro on behalf of Eagle Creek in 2017 demonstrate that the Winnipesaukee River in the vicinity of the Clement project meets state water quality standards (letter included in Appendix I).

- The three ZoEs (impoundment, bypass and downstream) are located on the Winnipesaukee River and are listed as Class B waters by the NHDES. Class B waters are listed as the second highest quality and are managed to achieve and maintain certain designated uses. These waters are considered acceptable for fishing, swimming, and other recreational purposes, fish and shellfish consumption, supporting aquatic life and wildlife and after

adequate treatment, for use as water supplies. Presented below in Figures 4 and 5 are designated uses for Class B waters and applicable water quality standards in New Hampshire (NH).

FIGURE 4 DESIGNATED USES FOR CLASS B NEW HAMPSHIRE SURFACE WATERS

Designated Use	NHDES Definition
Aquatic Life	Waters that provide suitable chemical and physical conditions for supporting a balanced, integrated and adaptive community of aquatic organisms.
Fish Consumption	Waters that support fish free from contamination at levels that pose a human health risk to consumers.
Shellfish Consumption	Waters that support a population of shellfish free from toxicants and pathogens that could pose a human health risk to consumers
Drinking Water Supply After Adequate Treatment	Waters that with adequate treatment will be suitable for human intake and meet state/federal drinking water regulations.
Primary Contact Recreation (i.e., swimming)	Waters suitable for recreational uses that require or are likely to result in full body contact and/or incidental ingestion of water
Secondary Contact Recreation	Waters that support recreational uses that involve minor contact with the water.
Wildlife	Waters that provide suitable physical and chemical conditions in the water and the riparian corridor to support wildlife as well as aquatic life.

Source: NHDES, 2017

FIGURE 5 APPLICABLE NH CLASS B SURFACE WATER QUALITY STANDARDS

Parameter	Administrative Code	Numeric or Narrative Standard
Temperature	Env-Wq 1703.13	Any stream temperature increase associated with the discharge of treated sewage, waste or cooling waste, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class.
Dissolved Oxygen	Env-Wq 1702.07	At least 75% saturation based on a daily average; and an instantaneous minimum concentration of at least 5 mg/L
pH	Env-Wq 1703.18	6.5 to 8.0 unless due to natural causes
Turbidity	Env-Wq 1703.11	Not exceed naturally occurring conditions by more than 10 NTU
Nutrients	Env-Wq 1703.14	No phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.
Bacteria	Env-Wq 1703.06	(1) A geometric mean based on at least 3 samples obtained over a 60-day period of 47 Escherichia coli (E. coli) per 100 milliliters, unless naturally occurring; or (2) 153 E. coli per 100 milliliters in any one sample, unless naturally occurring.
Color	Env-Wq 1703.10	No color in such concentrations that would impair any existing or designated uses, unless naturally occurring.
Benthic Deposits	Env-Wq 1703.08	No benthic deposits that have a detrimental impact on the benthic community, unless naturally occurring.
Oil and Grease	Env-Wq 1703.09	No oil or grease in such concentrations that would impair any existing or designated uses.
Slick, Odors, and Surface Floating Solids	Env-Wq 1703.12	No slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring.

Source: NHCAR, 2016.

3.3 UPSTREAM FISH PASSAGE STANDARDS

3.3.1 ALL ZOEs

CRITERION	*STANDARD*	*INSTRUCTIONS*
C	1	Not Applicable/ De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

- There are 3 dams downstream of Clement on the Winnipesaukee River that prevent upstream fish passage.

- Appendix A of the MOA identifies that upstream passage will be reviewed in 2020, which aligns with the extension of the current MOA dated June 25, 2019 (Please see Appendix A of this LIHI application which includes the current version of the MOA Appendix A, dated February 2017).

- USFWS and NHFG work in cooperation to periodically stock eel in Lake Winnipesaukee (upstream of Clement) and Atlantic Salmon in the Merrimack River watershed (downstream of Clement).

- Resident Fish

  Based on consultation with NHFG, the following resident freshwater species have been documented in the Winnipesaukee River: Common White Sucker, Fallfish, Common Shiner, Blacknose Dace, Longnose Dace, Brown Bullhead, Yellow Bullhead, Yellow Perch, Eastern Chain Pickerel, Rock Bass, Bluegill, Pumpkinseed Sunfish, Redbreast Sunfish, Largemouth Bass, Smallmouth Bass, and Margined Madtom.

- Migratory Fish

  Historically, most of the native migratory fish species were present in the watershed (Atlantic Salmon, American Eel, Alewife, Blueback Herring, American Shad, and Sea Lamprey). (Noon, J. 2003. Fishing in New Hampshire: A History. Moose Country Press. Warner, NH).

- Currently NHFG restoration focus is on the catadromous American Eel and anadromous river herring (Alewife and Blueback Herring). These are the diadromous fish species that are present in the Winnipesaukee River.

- Additionally, hatchery stocked fish such as Brook Trout, Rainbow Trout, and Atlantic Salmon are present in the Winnipesaukee River.

3.4 DOWNSTREAM FISH PASSAGE STANDARDS

3.4.1 CLEMENT IMPOUNDMENT

CRITERION	*STANDARD*	*INSTRUCTIONS*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

- Please see the Upstream Fish Passage Standards Section above for a summary of fish species that occur now or have occurred historically in the Project area.

- Beginning in 2015, under the terms of the MOA, Eagle Creek worked in cooperation with the USFWS and NHFG to review Project minimum flows and develop a design for downstream fish passage and protection facilities at Clement.

  Eagle Creek developed conceptual drawings based on site meetings with USFWS and NHFG in 2015. Upon verbal approval of the conceptual drawings, final drawings were developed and approved verbally by both agencies. Subsequent to approval from FERC's New York Regional Office, the downstream fish passage facilities were constructed in 2016 in accordance with a wetland permit from NHDES. As part of the NHDES permit review, Eagle Creek consulted with the United States Army Corps of Engineers (ACOE),

New Hampshire Division of Historical Resources (NHDHR), NHFG (T&E species) and IPaC.

The downstream fish passage facilities were completed in 2016 prior to the downstream fish passage season (American Eel generally 8/15 to 11/15, River Herring generally 9/15 to 11/15) and have been successfully operated annually during the downstream migration season since being placed in service. The downstream fish passage and protection measures include (reference Appendix B (CEII) for General Arrangement):

- installation of new 3/4" opening exclusionary racks at the intake,
- use of the existing concrete sluiceway located immediately downstream of the racks at the intake to pass 11 cfs and bypass downstream migrants past the dam,
- modifications to the existing waste gate section of the spillway for a lighted bypass that includes installation of shaped wall panels anchored to existing concrete and a shaped floor bolted to the top of the existing waste gate panel to maintain 39 cfs bypass flow and bypass downstream migrants past the dam,
- a plunge pool modified at the exit with a weir assembly and discharge chute located downstream of the waste gate spillway on the apron of the dam which conveys downstream migrants to the bypass and river,
- a 4' skirted boom upstream of the intake to guide downstream migrants to the lighted waste gate.
- Included as an Appendix B (CEII) is the general arrangment of the downstream fish passage facilities.

- Additionally, under the MOA, Eagle Creek constructed and operates downstream fish passage facilities upstream and downstream of Clement, at Lochmere and Stevens Mill respectively.
- Representatives from USFWS and NHFG coordinate with Eagle Creek's local operations personnel to visit Clement during the downstream migration season to confirm its successful operation.

- As outlined in the Fishway Operations and Maintenance Plan (included as Appendix J), one of the plans required by the MOA and approved by the USFWS, for the two years following the installation of the downstream fish passage facilities, participants from Eagle Creek, the USFWS and NHFG were to review sites selected by USFWS. Additionally, NHFG and USFWS field crews regularly visit all sites encompassed in the MOA. Selected sites for the annual review are usually based on feedback from field crews from both agencies who coordinate regularly with local Eagle Creek operations to observe the downstream fish passage facilities. There were no requests to visit Clement in 2016, 2017 or 2018, based on the consensus that the downstream fish passage facility at Clement was being operated successfully.

- As a means for continuing to work cooperatively with the USFWS and NHFG, Eagle Creek committed to coordinating annual calls or site reviews, as necessary, based on requests from the USFWS, subsequent to the 2-year commitment for site visits noted in the above bullet. This commitment is included in the current version of the Fishway Operations and Maintenance Plan.

- Eagle Creek completed site reviews of the downstream fish passage facilities at Lochmere, Clement and Stevens Mill with USFWS and NHFG on September 10, 2019. Both agencies agreed that the downstream fish passage facilities at Clement were being operated successfully.

- Comments from the USFWS were recently received on the Operations and Flow Monitoring Plan, and will be reviewed by Eagle Creek and further discussed with agencies as the Parties work cooperatively to extend the MOA.

3.4.2 CLEMENT BYPASS

CRITERION	*STANDARD*	*INSTRUCTIONS*
D	2	<u>Agency Recommendation:</u> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

- As summarized in the March 1983 FERC license, the USFWS recommended that the Licensee maintain a continuous minimum flow release of 235 cfs, or inflow, if less, as measured-below the project powerhouse, to protect downstream aquatic habitat. The recommended 30 cfs release from the project dam would be included in the 235 cfs recommended release from the Project.

- As described in the Introduction, a MOA was executed by Eagle Creek and the USFWS in 2014. Under the terms of the MOA, minimum flows and bypass flows were reviewed by both parties in 2015. The USFWS agreed that the minimum bypass flow required by the FERC license (30 CFS) was acceptable. As also noted, under the MOA, Eagle Creek installed downstream fish passage facilities at Clement. Flow from the downstream fish passage facilities (50 cfs which is comprised of 11 cfs through the trough at the intake, for downstream eel passage, and 39 cfs released from the modified waste gate to the plunge pool to the discharge chute) is attributable to the 235 cfs min flow for the project and replaces the bypass flow at the dam (30 cfs) during the downstream passage season. As noted in the Introduction, an email submitted by USFWS to LIHI in August 2017 confirmed approval of the bypass flow as described in the Operations and Flow Monitoring Plan.

- See Impoundment ZoE for description of downstream fish passage facility. Eagle Creek operations and NHFG regularly monitor the downstream fish passage facilities and work cooperatively to ensure its success.

3.4.3 CLEMENT DOWNSTREAM

CRITERION	*STANDARD*	*INSTRUCTIONS*
D	1	<u>Not Applicable / De Minimis Effect:</u> • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

- Clement is a run of river facility.
- The impoundment of the downstream Stevens Mill development does not backwater to the Clement downstream ZoE.
- As noted in the Downstream Passage Impoundment ZoE, ¾" clear bar spacing racks at the intake were installed in 2016 based on input and agreement from the USFWS and NHFG. The relatively low water velocities at the intake racks and the clear spacing minimize entrainment and impingement for downstream migrants.
- There are no barriers in the tailrace which limit downstream movement.
- Please see Bypass ZoE for description of minimum flows.

3.5 SHORELINE AND WATERSHED PROTECTION STANDARDS

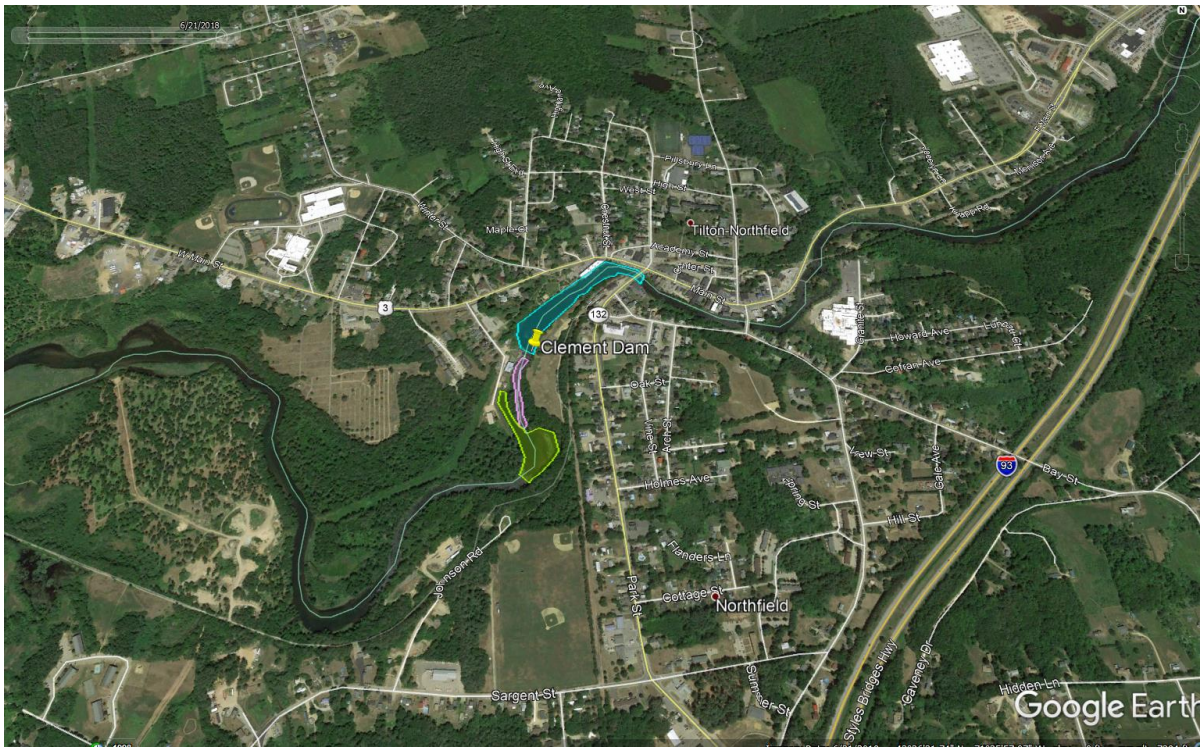
3.5.1 ALL ZONES OF EFFECT

CRITERION	*STANDARD*	*INSTRUCTIONS*
E	1	Not Applicable / De Minimis Effect: • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

- There is no buffer zone dedicated to conservation.
- There is no requirement for a Shoreland Management Plan under the FERC license.
- Article 19 of FERC license requires the Licensee to take "reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution." There have been no violations of this Article since the last certification. During construction of the downstream fish passage facilities, an erosion control plan was detailed in the NHDES permit application and employed during construction. There are no ground disturbing activities currently planned at the site, however, if any were proposed, a soil erosion and sediment control plan would be developed and implemented.
- The Project is operated as run-of-river, as denoted in the MOA, reducing the risk of erosion on lands adjacent to the Winnipesaukee River.
- See Figure 6 below showing land use in the vicinity of Clement. The shoreland immediately surrounding the facility is the historic downtown of Tilton and Northfield, the "gateway" to the Lakes Region of New Hampshire. There is an urban shopping district and Town park upstream of the project, and the historic downtowns are located in the immediate area upstream of the project. The vicinity is primarily urban, with a mix of residential housing, parks, commercial and industrial areas. There is a rail line that parallels the eastern side of the Winnipesaukee River in the vicinity of Clement. The area abutting the bypassed reach on river right consists primarily of buildings, some of which are associated with the hydro facility. The shoreline abutting river left of the bypass reach and downstream is generally more scenic and vegetated.

- The Project has a relatively small footprint, lies within a developed area, with no lands of significant or ecological value.

FIGURE 6 AERIAL SHOWING LAND USE IN THE VICINITY OF THE PROJECT



3.6 THREATENED AND ENDANGERED SPECIES STANDARDS

3.6.1 ALL ZONES OF EFFECT

CRITERION	STANDARD	INSTRUCTIONS
F	1	Not Applicable / De Minimis Effect: • Document that there are no listed species in the facility area or affected riverine zones downstream of the facility. • If listed species are known to have existed in the facility area in the past but are not currently present, explain why the facility was not the cause of the extirpation of such species. • If the facility is making significant efforts to reintroduce an extirpated species, describe the actions that are being taken.

- The MOA with USFWS states in Section 3.2: "As of July 1, 2014, the Service has determined that, based on the information available as of that date, except for occasional transient individuals, no federally listed or proposed endangered or threatened species under the Service jurisdiction are known to exist in the Project's impact areas. In addition, no habitat in the Project's impact areas is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.)."
- As part of the NHDES permit application process for the construction of the Downstream Fish Passage Project, an Information for Planning and Consultation (IPaC) report and NH Natural Heritage Bureau (NHHB) consultation was completed in 2015 to assess official species known to occur or potentially occur within the project area. The IPaC report and NHHB reports are included in Appendix K, as K-1. As part of the LIHI application for recertification, both sites were again consulted. The results are provided in Appendix K, as K-2 (screenshots from online review based on project area identification). These responses will be updated with the official reports, once received.
- The NHHB review identifies no recorded occurrences for sensitive species near the project area. The IPaC report identifies the presence of one threatened or endangered species, the Northern long eared bat. The Northern Long Eared Bat have a presence throughout the northern United States. While Northern Long Eared Bat range is identified in the vicinity of the Project, the report indicates there are no critical habitats is the vicinity. It is unlikely that the Northern Long Eared Bat would be present in the limited footprint of the project boundary, especially with the developed urbanized environment. Additionally, the Project has no effect on the species as there are no routine tree-clearing activities or corridor maintenance activities planned, nor are there any projects currently planned which would involve tree clearing. Migratory birds listed are the Bald Eagle, the Black-billed Cuckoo, the Canada Warbler, Olive-sided Flycatcher, Prairie Warbler and Wood Thrush as potentially being present and/or breeding in the project area. Bald Eagles are protected under both the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. There are no Bald Eagles present at the Project. Clement has no activities or project operations that would result in impacts to migratory birds, eagles, or their habitats.

3.7 CULTURAL AND HISTORIC RESOURCE STANDARDS

3.7.1 ALL ZONES OF EFFECT

CRITERION	STANDARD	INSTRUCTIONS
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility. • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

- License Article 27 of the Commission's March 22, 1983 Order Amending License requires the Licensee to continue to consult and cooperate with the NHSHPO on any future construction or development of project works or other facilities at the Project.
- There is no requirement for a Programmatic Agreement or Cultural Resource Management Plan at Clement in the FERC 1983 FERC license.
- An environmental inspection was completed by FERC in August 1997 (Appendix D). The inspection report stated that there are no facilities or resources designed to protect any cultural resources at the project; there are no requirements or conditions concerning cultural resources at the project; and at the time, no need for a cultural resources management plan.
- On September 9, 2013, as part of the previous LIHI application, a Request for Project Review was submitted to the NHDHR.[4] The NHDHR found the project with "No Potential to Cause Effects," and noted "this is an unevaluated resource, if in the future plans involve alterations to the facility surveys will be required."
- In 2015, as part of the NHDES permit process for construction of the downstream fish passage facilities, Eagle Creek consulted with the ACOE and the NHDHR. No response was received from the NHDHR to the request for a Project Review (Appendix L includes portions of the application package). Eagle Creek also consulted with the ACOE for a project area determination under section 106. The ACOE determined no impact (Appendix M provides the response from ACOE).

[4] https://lowimpacthydro.org/wp-content/uploads/2015/02/Clement-Dam_Appendix-F-1_Clement-NH-DHR-No-Impact-ltr.pdf

3.8 RECREATIONAL RESOURCES STANDARDS

3.8.1 ALL ZONES OF EFFECT

CRITERION	STANDARD	INSTRUCTIONS
H	3	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

- The Licensee allows free access to the Project's land and waters in compliance with Standard Article 18 of the FERC license. Boating and fishing are recreational opportunities that frequently occur in the Project waters, and the Licensee maintains open access to all project lands other than the intake and tailrace.
- The Licensee was exempted from filing a Form 80 by Commission letter dated April 30, 1992.
- The 1997 FERC Environmental Inspection Report summarized that the project provides no formal recreational facilities. Fishing occurs downstream of the project below the tailrace. The project has sufficient safety measures to protect the public from project features and operations. There are no requirements concerning a submission of an Exhibit R, Recreation Plan. The informal access to downstream areas of the Project is adequate in providing for recreation needs at the Project. No follow up actions were required.
- In 2005, the Town of Tilton was granted permission to install three fishing piers and a car top boat launch within the project boundary as part of a public park being developed by the Town on land adjacent to the project reservoir (Tilton Riverfront Park). [5]
- In 2016, Eagle Creek on behalf of Clement Dam Hydroelectric, filed with FERC an incident report involving public safety. FERC responded stating the report satisfied the requirements of Section 12.10 of FERC's regulations. (**CEII** – included as Appendix N)

[5] https://elibrary.ferc.gov/IDMWS/common/OpenNat.asp?fileID=10476184

4.0 CONTACTS FORMS

4.1 APPLICANT CONTACT INFORMATION

Project Owner:	
Name and Title	Robert Gates, Vice President
Company	Clement Dam Hydroelectric, LLC
Phone	973-998-8403
Email Address	Bob.Gates@eaglecreekre.com
Mailing Address	65 Madison Avenue, Suite 500, Morristown, NJ 07960
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Robert Gates, Vice President Susan Giansante, Project Manager
Company	Clement Dam Hydroelectric, LLC
Phone	973-998-8403 973-998-8400
Email Address	Bob.Gates@eaglecreekre.com Susan.Giansante@eaglecreekre.com
Mailing Address	65 Madison Avenue, Suite 500, Morristown, NJ 07960
Party responsible for accounts payable:	
Name and Title	Robert Gates, Vice President
Company	Clement Dam Hydroelectric, LLC
Phone	973-998-8403
Email Address	Bob.Gates@eaglecreekre.com
Mailing Address	65 Madison Avenue, Suite 500, Morristown, NJ 07960

4.2 STATE, FEDERAL, PROVINCIAL, AND TRIBAL RESOURCE AGENCY CONTACTS-

Agency Contact		*Area of Responsibility*
Agency Name	New Hampshire Department of Environmental Services, Watershed Management Bureau	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☐ T & E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Mr. Gregg Comstock, Supervisor, Water Quality Planning Section Mr. Ted Walsh, Surface Water Monitoring Coordinator	
Phone	603-271-2983 603-271-2083	
Email address	gregg.comstock@des.nh.gov Ted.Walsh@des.nh.gov	
Mailing Address	29 Hazen Drive, P.O. Box 95 Concord, NH 03302-0095	

Agency Contact		*Area of Responsibility*
Agency Name	New Hampshire Fish & Game	☐ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☒ T & E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Matt Carpenter, Biologist II Kim Tuttle, Certified Wildlife Biologist	
Phone	603-271-2612 603-271-6544	
Email address	Matthew.carpenter@wildlife.nh.gov	
Mailing Address	29 Hazen Drive, P.O. Box 95 Concord, NH 03301	

Agency Contact		*Area of Responsibility*
Agency Name	New Hampshire Division of Historical Resources	☐ Flows ☐ Water Quality ☐ Fish/Wildlife ☐ Watershed ☐ T & E Species ☒ Cultural/Historic ☐ Recreation
Name and Title		
Phone	603-271-3483	
Email address	preservation@ddncr.nh.gov	
Mailing Address	19 Pillsbury Street - 2nd floor Concord, NH 03301-3570	

Agency Contact		*Area of Responsibility*
Agency Name	US Fish and Wildlife Services	☒ Flows ☐ Water Quality ☒ Fish/Wildlife ☐ Watershed ☒ T & E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Julianne Rosset, Fish & Wildlife Biologist, USFWS New England Field Office	
Phone	603-227-6436	
Email address	julianne_rosset@fws.gov	
Mailing Address	70 Commercial Street, Suite 300 Concord, NH 03301	

Sworn Statement and Waiver Form

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of Clement Dam Hydroelectric, LLC, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

Company Name: Clement Dam Hydroelectric, LLC

Authorized Representative:

Name: Robert Gates

Title: Vice President

Authorized Signature: _____

Date: October 14, 2019