



**APPLICATION FOR WATER QUALITY  
CERTIFICATION**  
Water Division  
Water Quality Certification Program



**RSA:** 485-A: 12, III and IV

Date of Request September 22, 2023

Date Request Received by NHDES \_\_\_\_\_

**I. Applicant Information**

Principal Place of Business of the Applicant Lewiston, Maine
Mailing Address [Street, PO Box, RR, etc.] 150 Main Street
City/Town and ZIP Code Lewiston, Maine 04240
Telephone No. 207-755-5613
Email Address luke.anderson@brookfieldrenewable.com
Name and Title of Signatory Official Responsible for the Activity for which Certification is Sought (e.g., President, Administrator) Luke T. Anderson, Manager, Licensing, Great Lakes Hydro America, LLC

**II. Project Information**

Name of Project Cascade (P-2327)
Name of Town and County that contains the Project Berlin and Gorham, Coos County
Name of Receiving Waterbody and Drainage Basin Androscoggin River, Androscoggin River Basin
Summary of Activity (e.g., construction, operation, or other practice or action) Federal Energy Regulatory Commission (FERC or Commission) relicensing for the continued operation of the Cascade Hydroelectric Project (FERC No. 2327), without operational or infrastructure changes to the Project.

phone [\(603\) 271-2457](tel:6032712457)  
 fax (603) 271-7894  
 PO Box 95, Concord, NH 03302-0095  
[www.des.nh.gov](http://www.des.nh.gov)

**III. Additional Submittal Information****PLEASE SUBMIT AS MUCH INFORMATION AS POSSIBLE IN ELECTRONIC FORMAT**

**Please provide an individual response to each bullet, below. If applicable information is contained in the application materials, please provide a reference to the specific section in the application materials that will represent the response to the individual bullets below.**

- Type of activity (e.g., construction, operation, other action such as water withdrawal) and the start and end dates of the activity.
- The characteristics of the activity: Whether the activity is associated with a discharge and/or water withdrawal and whether the discharge and/or withdrawal is proposed or occurring.
- The characteristics of the discharge and/or withdrawal:
  - Flow rate (cfs).
  - Potential chemical, physical, biological constituents.
  - Frequency (e.g., daily, hourly).
  - Duration.
  - Temperature (Celsius).
  - Latitude and longitude (dd:mm:ss).
- The existing and designated use(s) that are potentially affected by the proposed activities. (Designated Uses are listed in the NHDES Consolidated Assessment and Listing Methodology.)
- The provision(s) of surface water quality standards (Env-Wq 1700) that are applicable to the designated uses affected by the proposed activities.
- A pollutant loading analysis to show the difference between predevelopment and post-development pollutant loads for a typical year. The objective of the loading analysis is to show post-development pollutant loads do not exceed pre-development pollutant loads. Loading analysis guidance and a simple spreadsheet model will be provided by NHDES. The loading analysis will be used to determine appropriate stormwater management measures, which must be effectively designed, installed, and maintained to ensure compliance with surface water quality standards.
- A description of any other aspect of associated with construction and operation of the activity that would affect the chemical composition, temperature, flow, or physical aquatic habitat of the surface water.
- An original or color copy/reproduction of a United States Geological Survey Quadrangle Map that clearly shows the location of the activity and all potential discharge points.
- A copy of the final complete federal permit application or federal license application, including the federal permit, license, or project number.
- A copy of the NHDES wetlands permit (RSA 482-A:3), if necessary.
- A copy of the NHDES alteration of terrain permit (RSA 485-A:17), if necessary.
- A plan showing the proposed activities to scale including:
  - The location(s) and boundaries of the activities.
  - The location(s), dimension(s), and type(s) of any existing and/or proposed structures.
  - The location(s), name(s), identification number(s), and extent of all potentially affected surface water bodies, including wetlands.
- For projects that involve a new surface water withdrawal, provide the following:

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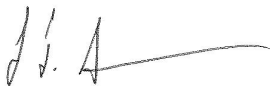
[www.des.nh.gov](http://www.des.nh.gov)

- A copy of the water conservation plan (WCP) submitted to the NHDES Water Conservation Program and the status of NHDES approval.
- A copy of a waiver approved by the NHDES Water Conservation Program that waives the requirement to submit a WCP prior to or in conjunction with the application for water quality certification.
  
- Pursuant to Env-Wq 2101, and unless a waiver is applied for and granted by NHDES, all applicants for water quality certification are required to submit a water conservation plan (WCP) for projects that involve a new withdrawal from a surface water prior to or in conjunction with this application. Contact the NHDES Water Conservation Program for guidance related to drafting a WCP and the review and approval process. Information regarding the WCP, including contact information, may be found at the [NHDES Water Conservation website](#).
  
- If the project is located within ¼ (one quarter) mile of a designated river, as defined under RSA 483 (the Rivers Management and Protection Act), provide documentation showing that the Local River Management Advisory Committee (LAC) has been provided with a copy of this complete application. A list and map of the designated rivers, as well as contact information, may be found at the [NHDES Rivers Management and Protection website](#).

**Signature – MUST BE SIGNED AND DATED BY APPLICANT**

***To the best of my knowledge, the data and information described above, which I have submitted to the New Hampshire Department of Environmental Services, is true and correct. I understand that an approval of the requested water quality certification based upon incorrect data may be subject to revocation of the certification. I have complied with all local regulations or ordinances relative to the proposed activity and have obtained or will obtain, prior to the commencement of any work, all other approvals that may be required.***

**Signed:** Luke T Anderson, Manager, Licensing



**Date:** September 22, 2023

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## **ADDITIONAL INFORMATION**

## **Background**

Great Lakes Hydro America, LLC (GLHA or Licensee) owns and operates the Cascade Hydroelectric Project (FERC No. 2327) (Project) on the Androscoggin River in the city of Berlin and town of Gorham, Coos County, New Hampshire. The Licensee is seeking a new federal license with the Federal Energy Regulatory Commission (FERC) as well as a Clean Water Act (CWA) Section 401 water quality certificate (WQC) from the New Hampshire Department of Environmental Services (NHDES) for the continued operation of the Project. The requisite documents are listed in Table 1 and are attached to this 401 application. The following bulleted list summarizes the attachments:

- The Licensee filed the Final License Application (FLA) with FERC on July 29, 2022, with an addendum that included the Recreation Use and Facility Assessment Study and revised Exhibits A and E on April 12, 2023. The FLA is included as Attachments 2 and 3, and the addendum with revised exhibits is included as Attachment 4.
- As outlined by the Study Plan Determination issued by FERC on May 29, 2020, GLHA completed and submitted to NHDES, NHFGD, and other agencies the required relicensing studies in an Initial Study Report (ISR) on June 7, 2021. In a letter September 9, 2021 NHDES requested additional data collection consistent with the originally proposed methods. FERC approved the NHDES request on September 22, 2021. The revised Instream Flows Report was provided in an Updated Study Report (USR) on June 6, 2022. The studies provided in the ISR are included as Attachments 5-9, and the study provided in the USR is included as Attachment 10.
- Due to the Covid-19 pandemic the Recreation Use and Facility Assessment Study (RUFA Study) was delayed until the 2022 field season. The RUFA Study was filed on April 12, 2023 and is included as Attachment 11.
- Following the FLA submittal FERC issued an AIR on August 25, 2022, which the Licensee responded to on October 10, 2022. The AIR and response are included as Attachments 12 and 13, respectively.
- An additional AIR was issued for recreation related information on June 14, 2023, which the Licensee responded to on July 14, 2023. The AIR and response are included as attachments 14 and 15, respectively.
- The Licensee sent the NHDES a letter requesting a pre-filing meeting to discuss the 401 Application on August 4, 2023. The pre-filing meeting was held on September 12, 2023. The letter requesting the meeting is included as Attachment 1.

**Table 1. List of Attachments to Supplement the 401 WQC Application**

<b>Attachment No.</b>	<b>Document</b>	<b>File Date</b>
1	Letter to NHDES seeking Pre-Filing Meeting with NHDES on 401 Application	August 4, 2023
2	Final License Application Volume I (IS, Exhibit A, Exhibit F, Exhibit G)	July 29, 2022
3	Final License Application Volume II (Exhibit E, Exhibit H)	July 29, 2022
4	Licensee files FLA Addendum (Revised license exhibits A and E with recreation-related PM&E measures)	April 12, 2023
5	Bypassed Reach Aquatic Habitat Study (ISR)	June 7, 2021
6	Botanical Resources Study (ISR)	June 7, 2021
7	Freshwater Mussel Survey (ISR)	June 7, 2021
8	Desktop Impingement and Entrainment Study (ISR)	June 7, 2021
9	Water Quality Report (ISR)	June 7, 2021
10	Instream Flows Report (USR)	June 6, 2022
11	Recreation Use and Facility Assessment Study	April 12, 2023
12	FERC Letter to Licensee - AIR	August 25, 2022
13	Licensee response to FERC AIR	October 10, 2022
14	FERC Letter to Licensee - AIR	June 14, 2023
15	Licensee response to FERC AIR	July 14, 2023

**Additional submittal information**

- ***Type of activity (e.g. construction, operation, other action such as water withdrawal) and the start and end dates of the activity.***

The current FERC license expires on July 31, 2024. The Licensee filed an application for relicensing the run-of-river Project as it currently operates, with no operational changes. See Attachment 2, Final License Application (FLA) Volume I, Exhibit A, Section 2.2 – Project Operations for additional details.

- ***The characteristics of the activity: Whether the activity is associated with a discharge and/or water withdrawal and whether the discharge and/or withdrawal is proposed or occurring.***

The Project is an existing run-of-river hydroelectric facility with an active FERC license. No discharge or water withdrawal is proposed. See Attachment 2, FLA Volume I, Exhibit A, Section 2.2, Project Operations for additional details.

- ***The characteristics of the discharge or withdrawal:***

- ***Flow rate (cfs):***

The Project is operated as run-of-river with an existing hydroelectric facility at the dam, and provides 6 cfs flow (or inflow, whichever is less) to the bypassed reach through a notch in the flashboards. Please see Attachment 2, FLA Volume I, Exhibit A, §2.2 Project Operations for additional details.

- ***Potential chemical, physical, biological constituents:***

Please see Attachment 3, FLA Volume II, Exhibit E Environmental Report (§§ 3.3 – Water Resources, 3.4 – Fish and Aquatic Resources, 3.5 – Wildlife and Botanical Resources, 3.6 – Wetland, Riparian, and Littoral Habitats, and 3.7 – Threatened, Endangered, and Special Status Species). In addition, the following studies and reports were completed as part of the FERC relicensing process pertaining to chemical, physical, and biological constituents:

Botanical:

- Botanical Resources Study (Attachment 6)

Aquatic

- Bypassed Reach Aquatic Habitat Study (Attachment 5)
- Freshwater Mussel Survey (Attachment 7)
- Desktop Impingement and Entrainment Study (Attachment 8)
- Water Quality Report (Attachment 9)

Physical:

- Instream Flows Report (Attachment 10)

Other

- Recreation Use and Facility Assessment Study (Attachment 11)

- ***Frequency (e.g., daily, hourly):***

The Project is operated as a run-of-river facility under an active FERC license. Please see Attachment 2, FLA Volume I, Exhibit A, §2.0 - Project Description for additional details related to the impoundment water level, turbine flow releases, and year-round minimum flows.

- **Duration:**

The Project is operated as a run-of-river facility under an active FERC license. Please see Attachment 2, FLA Volume I, Exhibit A, §2.0 - Project Description for additional details related to the impoundment water level, turbine flow releases, and year-round minimum flows.

- **Temperature (Celsius):**

Please see Attachment 9 – Water Quality Report for more detailed information regarding temperatures within the Project vicinity and Attachment 3, FLA Volume II, Exhibit E, §3.3 – Water Resources for details about water quality.

- **Latitude and longitude (dd:mm:ss):**

The Project Dam is located at: 44°26'55.96"N, 71°11'11.37"W

- ***The existing and designated use(s) that are potentially affected by the proposed activities. (Designated Uses are Listed in the NHDES Consolidated Assessment and Listing Methodology.)***

The Androscoggin River in the GLHA NH Project area is classified by the state of New Hampshire as a Class B water. The designated uses of Class B surface waters in New Hampshire are aquatic life, fish consumption, potential drinking water supply, swimming and other recreation in and on the water, and wildlife. Relicensing the Cascade Project is not anticipated to impact any of the designated uses within the Project vicinity. Please see Attachment 3, FLA Volume II, Exhibit E, §3.3 – Water Resources for additional details about designated uses.

- ***The provision(s) of surface water quality standards (Env-Wq 1700) that are applicable to the designated uses affected by the proposed activities.***

Please see Attachment 3, FLA Volume II, Exhibit E, §3.3, Table 3.3.



- ***A pollutant loading analysis to show the difference between predevelopment and post-development pollutant loads for a typical year. The objective of the loading analysis is to show post-development pollutant loads do not exceed pre-development pollutant loads. Loading analysis guidance and a simple spreadsheet model will be provided by NHDES. The loading analysis will be used to determine appropriate stormwater management measures, which must be effectively designed, installed, and maintained to ensure compliance with surface water quality standards.***

A pollutant loading analysis is not applicable to this application. The Cascade Hydroelectric Project is an existing development. GLHA is not proposing any operational changes or construction with this relicensing.

- ***A description of any other aspect associated with construction and operation of the activity that would affect the chemical composition, temperature, flow, or physical aquatic habitat of the surface water.***

No modifications to existing facilities or operations are being proposed by GLHA. The proposed action (i.e., the continued operation of the GLHA NH Projects) is not expected to adversely affect water quality in the Androscoggin River. Please see Attachment 3, FLA Volume II, Exhibit E, §3.3, for more details about water quality related to this relicensing.

- ***An original or color copy/reproduction of a United States Geological Survey Quadrangle Map that clearly shows the location of the activity and all potential discharge points.***

A USGS Quadrangle Map has been provided below (Figure 1). Additional details and maps of the Project area related to this relicensing are available in Attachments 2 and 3, FLA Volumes I and II. Discharge points include the dam (spill via the gates and spillway), and the powerhouse (flow through the turbines).

# Cascade Project USGS Quadrangle Map

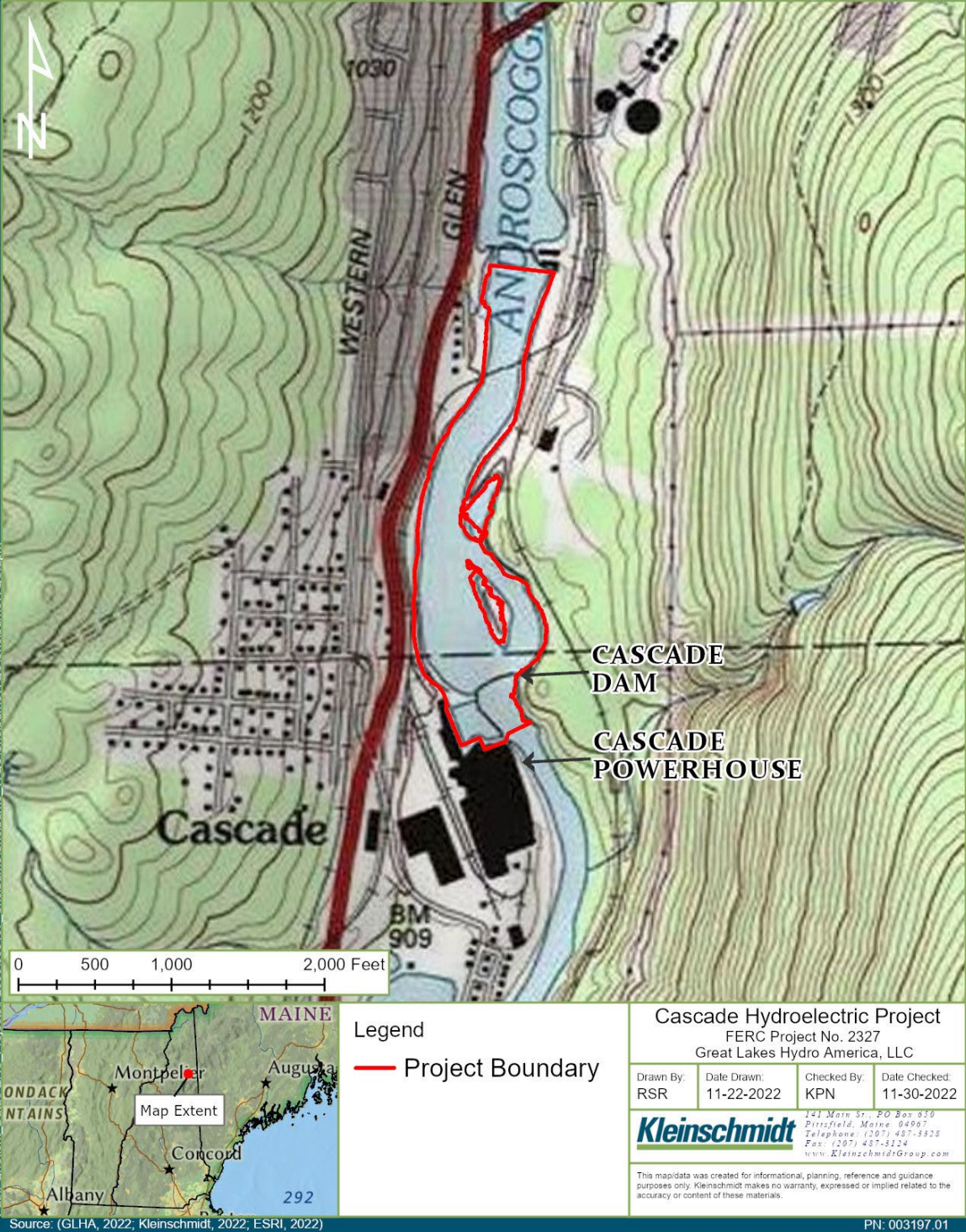


Figure 1. USGS Quadrangle Map of the Cascade Project area.

- **A copy of the final complete federal permit application or federal license application, including the federal permit, license, or project number.**

Please see Attachments 2 and 3, FLA Volumes I and II. Cascade Hydroelectric Project, FERC No. 2327, as well as the FERC-issued AIR (Attachment 12), that the Licensee responded to on October 10, 2022 (Attachment 13). In addition, the Licensee filed an Updated Study Report on June 6, 2022 (Attachment 10), and an addendum to the FLA that included the Recreation Use and Facility Assessment Study on April 12, 2023 (Attachment 11).

- ***A copy of the NHDES wetlands permit (RSA 482-A:3), if necessary.***

Not applicable.

- ***A copy of the NHDES alteration of terrain permit (RSA 485-A:17), if necessary.***

Not applicable.

- ***A plan showing the proposed activities to scale including:***
  - ***The location(s) and boundaries of the activities.***

Please see Attachment 2, FLA Volume I, Exhibit A Figure 1.1, and Exhibit G, for a map and drawings depicting the Project Boundary.

- ***The location(s), dimension(s), and type(s) of any existing and/or proposed structures.***

There are no new structures proposed as part of this relicensing. Please see Attachment 2, FLA Volume I, Exhibit A, §2.0 – Project Description for details of the existing structures. There are no new structures proposed as part of this relicensing.

- ***The location(s), name(s), identification number(s), and extent of all potentially affected surface water bodies, including wetlands.***

The project is located at approximate river mile 135.6 of the Androscoggin River. Please see Attachment 5 - Bypassed Reach Aquatic Habitat Study, and Attachment 9 - Water Quality Report, as well as Attachment 3, FLA Volume II, Exhibit E, §3.6 – Wetland, Riparian, and Littoral Habitats for additional details.

- ***For projects that involve a new surface water withdrawal, provide the following:***
  - ***A copy of the water conservation plan (WCP) submitted to the NHDES Water Conservation Program and the status of NHDES approval.***

Not applicable – the Project is not involved with a new surface water withdrawal.

- ***A copy of a waiver approved by the NHDES Water Conservation Program that waives the requirement to submit a WCP prior to or in conjunction with the application for water quality certification.***

The Project is not involved with a surface water withdrawal. GLHA will separately maintain a waiver for this requirement.

- ***Pursuant to ENV-Wq 2101, and unless a waiver is applied for and granted by NHDES, all applicants for water quality certification are required to submit a water conservation plan (WCP) for projects that involve a new withdrawal from surface water prior to or in conjunction with this application. Contact the NHDES Water Conservation Program for guidance related to drafting a WCP and the review and approval process. Information regarding the WCP, including contact information, may be found at the [NHDES Water Conservation Website](#).***

Not applicable – There are no water withdrawals proposed for the Project.

- ***If the project is located within ¼ (one quarter) mile of a designated river, as defined under RSA 483 (the Rivers Management and Protection Act), provide documentation showing that the Local River Management Advisory Committee (LAC) has been provided with a copy of this complete application. A list and map of the designated rivers, as well as contact information, may be found at the [NHDES Rivers Management and Protection website](#).***

The project area, located on the Androscoggin River, is not located within ¼ (one quarter) mile of a designated river, as defined under RSA 483 (the Rivers Management and Protection Act). Therefore, this section is not applicable.

Please see the Initial Statement included in Attachment 2, FLA Volume I for details about the entities that have received the FERC license application.

**CERTIFICATION REQUEST 40 CFR §121.5(B)**

## **§ 121.5 Certification Request**

**The following is an addendum for the New Hampshire Section 401 Water Quality Certification, as required per 40 CFR § 121.5(b).**

**(b) A certification request for an individual license or permit shall:**

**(1) Identify the project proponent(s) and a point of contact;**

Great Lakes Hydro America, LLC (GLHA) (Licensee) is submitting an application for water quality certification (WQC) for Cascade (FERC No. P-2327) Hydroelectric Project.

Point of Contact for the GLHA Projects:

Luke T. Anderson  
Manager, Licensing  
Brookfield Renewable  
150 Main Street  
Lewiston, Maine 04240  
Phone: 207-755-5613  
E-Mail: [Luke.Anderson@brookfieldrenewable.com](mailto:Luke.Anderson@brookfieldrenewable.com)

**(2) Identify the proposed project;**

The applications are for the Federal Energy Regulatory Commission (FERC) relicensing of the continued Project operations under the terms of a new license from the FERC. The Project is located on the Androscoggin River, Coos County, New Hampshire in the city of Berlin and town of Gorham. The Licensee is filing this application with the New Hampshire Department of Environmental Services (NHDES) for WQC pursuant to the provisions of the Federal Clean Water Act, Section 401. The Water Quality Application includes the following: a) Application for Water Quality Certification (Form NHDES-W-07-033), b) Additional Submittal Information, and c) Additional Information required per 40 CFR § 121.5(a) and (b).

**(3) Identify the applicable federal license or permit;**

Cascade (FERC No. P-2327) new FERC License.

**(4) Identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters;**

The Project is an existing run-of-river hydroelectric facility with an active FERC license. No new or additional discharge or water withdrawal is proposed. See Attachment 2, FLA Volume I, Exhibit A, Section 2.2, Project Operations for additional details.

**(5) Include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge;**

The Project is an existing run-of-river hydroelectric facility with an active FERC license. No new discharge or water withdrawal is proposed. See Attachment 2, FLA Volume I, Exhibit A, Section 2.2, Project Operations for additional details.

**(6) Include a list of all other federal, interstate, tribal, state, territorial, or local agency authorizations required for the proposed project, including all approvals or denials already received;**

The Project is currently going through relicensing with the FERC, for a new license.

**(7) Include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request;**

On June 1, 2020, the U.S. Environmental Protection Agency (EPA) released its Final Rule to streamline the Clean Water Act (CWA) Section 401 review. EPA's Final Rule was published in the Federal Register on July 13, 2020, and the effective date is September 11, 2020. The Final Rule requires an applicant to request a pre-filing meeting with the State agency at least 30 days prior to filing for certification (40 CFR § 121.4). The Licensee submitted a request for a pre-filing meeting with NHDES on August 4, 2023 and a meeting was held September 12, 2023 (Attachment 1).

**(8) Contain the following statement: 'The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief';**


RESPONSE: SEE BELOW

**(9) Contain the following statement: 'The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.'**

RESPONSE: SEE BELOW

I hereby certify that all information contained herein is true, accurate, and complete to the best of my knowledge and belief and hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.

**Name: (Printed)** Luke T. Anderson

**Name: (Signature)** 

**Date:** September 22, 2023