

**New Hampshire Department of Environmental Services
WATER QUALITY CERTIFICATION
In Fulfillment of RSA 485-A:12, III**

Certification Number	WQC 2022-FERC-002
Activity Name	Watson Dam Hydroelectric Project (FERC Project No. 6240)
Activity Location	Dover, New Hampshire (Strafford County)
Potentially Affected Surface Waters Near the Activity (other affected surface waters may exist)	Cocheco River: Watson Dam Impoundment (NHIMP600030608-02, Class B) Riverine section downstream of the Project impoundment (NHRIV600030608-05, Class B)
Owner/Applicant	Watson Associates, L.P.
Agent Filing Application on Behalf of Owner/Applicant	John Webster, General Partner Watson Associates, L.P. P.O. Box 178 South Berwick, ME 03908
Applicable Federal License or Permit Requiring Section 401 Water Quality Certification	Federal Energy Regulatory Commission - Subsequent License for Major Project Less Than 5 Megawatts
Receipt Date of Certification Request and Application for Water Quality Certification	October 19, 2022
Reasonable Period of Time	One-year Reasonable Period of Time established by the Federal Energy Regulatory Commission
Decision	Granted with Conditions
Date of Issuance	Signature Date

A. INTRODUCTION

Watson Associates, L.P. (the Applicant) has applied for a license from the Federal Energy Regulatory Commission (FERC) to continue the operation and maintenance of the Watson Dam Hydroelectric Project (Project) located on the Cocheco River in the Town of Dover, New Hampshire. The Project has a total installed power generating capacity of 265 kilowatts (kW). The Project generates electricity, and the Applicant sells the electricity to the power grid. A more complete description of the Project is provided in section C. PROJECT DESCRIPTION of this certification.

In accordance with 33 U.S. Code § 1341 (Section 401 of the federal Clean Water Act [CWA]), federal regulations promulgated under the CWA at Title 40 Code of Federal Regulations (CFR) Part 121, and New Hampshire law under New Hampshire Revised Statutes Annotated (RSA) 485-A:12, III, the Applicant submitted an Application for Water Quality Certification, which included a certification request, to the New Hampshire Department of Environmental Services (NHDES) for a FERC license for the Project, on October 19, 2022 (the Application). The purpose of the certification is to provide a reasonable assurance that discharges into surface waters of the state and waters of the United States, hereinafter collectively

referred to as “surface waters”, from the proposed Project will comply with applicable water quality requirements, including New Hampshire surface water quality standards that are specified under RSA 485-A:8 and New Hampshire Code of Administrative Rules Env-Wq 1700 (Surface Water Quality Standards), to comply with 33 U.S. Code § 1313 (section 303 of the CWA), effluent limitations and other limitations under section 301 or 302 of the CWA, standards of performance under section 306 of the CWA, or prohibition, effluent standard, or pretreatment standard under section 307 of the CWA, and with any other appropriate requirement of State law (Provisions of the CWA). Of the Provisions of the CWA, section 303 of the CWA is the most applicable provision for the Project.

B. DECISION

Based on a review of the Application, and subject to conditions included herein, NHDES has determined that there is reasonable assurance that discharges from operation of the proposed Project will comply with applicable water quality requirements, including New Hampshire Surface Water Quality Standards and Provisions of the CWA. NHDES hereby grants this certification in accordance with RSA 485-A:12, III, subject to the conditions in Section E. CERTIFICATION CONDITIONS of this certification.

C. PROJECT DESCRIPTION

C-1. In the Application, the Applicant included a copy of a version of the Final License Application for a Subsequent License (FLA) that the Applicant originally filed with FERC on August 27, 2021 for relicensing of the Project.¹ From September 7, 2021 to August 1, 2022, the Applicant filed revisions to the FLA and additional Project information with FERC in response to FERC’s requests for additional information.² Based on the FLA, including FLA revisions and additional Project information that the Applicant provided to FERC, FERC provided the following description of the Project’s current facilities and operation in its Environmental Assessment for Hydropower License for the Project that FERC filed on June 28, 2023 (Environmental Assessment for the Project):³

“2.1.1 Project Facilities

The Watson Dam Project is located on the Cocheco River in the City of Dover, Strafford County, New Hampshire. It is located approximately 6.8 river miles upstream of the confluence of the Cocheco River and the Salmon Falls River, where the two rivers join to form the Piscataqua River. The Piscataqua River flows approximately 12.7 miles before reaching the Gulf of Maine. [...]

The Watson Dam Project includes a 280.5-foot-long, 12-foot-high concrete gravity dam that includes the following sections: (1) a 54-foot-long west abutment; (2) an 18-foot-long spillway with a crest elevation of 109.6 feet North American Vertical Datum of 1988 (NAVD 88); (3) a 93-foot-long spillway that includes 24-inch-high flashboards with a crest elevation of 110.1 feet at the top of the flashboards; (4) an 11.5-foot-long, 12.0-foot-wide concrete spillway center pier; (5) an 80-foot-long east spillway section with 24-inch-high flashboards and a crest elevation of

¹ FERC Document Accession Nos. [20210827-5026](#); [20210827-5034](#); [20210827-5035](#); [20210827-5037](#); [20210827-5026](#).

² FERC Document Accession Nos. [20211227-5038](#); [20220124-5075](#); [20220215-5177](#); [20220316-5193](#); [20220330-5189](#); [20220603-5125](#); [20220629-5016](#); [20220714-5210](#); [20220801-5108](#); [20230210-3006](#); [20230313-3017](#).

³ FERC Document Accession No. [20230628-3016](#).

110.1 feet at the top of the flashboards; and (6) a 24-foot-long concrete intake structure that includes a trashrack with 2-inch clear bar spacing and an 8.5-foot-diameter cylinder gate. The dam creates an impoundment that has a surface area of approximately 47.7 acres at an elevation of 110.1 feet. [...]

From the impoundment, water flows through the intake structure to a 265-kW Flygt propeller turbine-generator unit located in a 24-foot-long, 30-foot-wide concrete bay. Water is discharged from the turbine through a draft tube to a 250-foot-long, 20-foot-wide tailrace, where it returns to the Cocheco River. The project creates a bypassed reach that includes a 250-foot-long channel and a 550-foot-long channel.

The project includes a 26.5-foot-long, 34-foot-wide wood and steel control room directly adjacent to the concrete bay. The project generator connects to a 0.48/12.47-kilovolt (kV) step-up transformer, located approximately 15 feet east of the control room, and an approximately 300-foot-long, 12.45-kV overhead transmission line that connects the project to the local distribution grid.

The project includes a downstream fish passage facility in the east spillway section of the dam that consists of a 3-foot-wide, 6-foot-long collection box and an approximately 30-foot-long, 2-foot-diameter PVC pipe that discharges to a 20-foot-deep tailrace. [...]

2.1.4 Current Project Operation

Watson Associates voluntarily operates the project in a run-of-river mode using an automatic pond level control system, such that outflow from the project approximates inflow to the impoundment at any given point in time, and the surface elevation of the impoundment is maintained at 1 inch below the flashboard crest elevation of 110.1 feet (i.e., 110.02 feet). At an impoundment elevation of 110.02 feet, approximately 17.2 cfs [cubic feet per second] spills over the 18-foot-long spillway to the bypassed reach.

The current license requires a minimum flow of 83 cubic feet per second (cfs) or inflow, whichever is less, from the project to the reach of the Cocheco River downstream of the tailrace to protect and enhance aquatic resources. The license also requires Watson Associates to operate the downstream fish passage facility from October 1 through November 15 each year, to provide passage for downstream migrating alewives. Watson Associates releases 20 cfs through the fish passage facility from October 1 through November 15, to facilitate downstream fish passage. Watson Associates also installs a mesh trashrack overlay with 1-inch spacing from October 1 through ice formation, to protect downstream migrating river herring.

The turbine-generator unit has a minimum and maximum hydraulic capacity of 50 cfs and 300 cfs, respectively. When generating, Watson Associates withdraws 50 to 300 cfs from the impoundment to generate electricity and releases it to the tailrace. When inflow is greater than 300 cfs, Watson Associates operates the turbine-generator unit continuously and releases excess flow from the spillway. The average annual energy production of the project from 2014 to 2018 was 912 MWh.”

- C-2. In FERC’s Environmental Assessment for the Project, FERC provided the following description of the Applicant’s proposed Project facilities and operational and environmental measures for relicensing of the Project, among other measures:

“2.2.1 Proposed Project Facilities

Watson Associates does not propose to add any new project facilities or revise the project boundary.

2.2.2 Proposed Operational and Environmental Measures

Watson Associates propose to:

- To protect aquatic resources, continue operating the project in a run-of-river mode, such that outflow from the project approximates inflow to the impoundment at any given point in time, and the surface elevation of the impoundment is maintained at 0.5 inch below the flashboard crest elevation of 110.1 feet (i.e., 110.06 feet), instead of 1 inch below the flashboard crest elevation under current operation (i.e., 110.02 feet);
- To enhance aquatic habitat in the bypassed reach, increase the minimum flow releases over the 18-foot-long spillway from 17.2 cfs under current operation to 19.6 cfs or inflow, whichever is less;
- To provide upstream passage for eels, design and install an eel ramp at the west abutment of the dam, within 4 years of any license issued;
- Provide downstream passage for river herring and eel by releasing the 19.6-cfs minimum flow over the spillway and 20 cfs through the downstream fish passage facility from October 1 through November 15, in years when New Hampshire FGD stocks river herring upstream of the project; [...]"

C-3. On October 19, 2022, pursuant to section 10(j) of the Federal Power Act, as amended, and the Fish and Wildlife Coordination Act, the U.S. Department of Interior through the U.S. Fish and Wildlife Service (USFWS) filed a letter with FERC to, among other things, recommend that certain protection, mitigation, and enhancement measures for fish and wildlife resources be included in any license the FERC issues for the Project.⁴ In the letter, USFWS recommended the following measures, among one other measure unrelated to Surface Water Quality Standards:

“1. 10(j) Recommendation 1: *Trashrack Replacement*. To protect downstream migrating adult American eel from entrainment and turbine mortality, and improve the guidance of adult and juvenile out-migrant river herring to the Watson Dam Project’s downstream fish passage facility, the Licensee should, within 2 years of license issuance, replace the Project’s 2-inch clear space trashrack with a 0.75-inch clear space trashrack. The trashrack design should be developed in consultation with the Service [USFWS] and the NHFGD [New Hampshire Fish and Game Department] and meet the Service’s Fish Passage Engineering Design Criteria. The Licensee should provide the Service and the NHFGD 30 days to review and comment on the 30, 60 and 90 percent design drawing sets. The Licensee should adhere to the following design milestone schedule for replacement of the trashracks:

- 30 percent designs within 6 months of license issuance.
- 60 percent designs within 9 months of license issuance.

⁴ FERC Document Accession No. [20221019-5125](https://www.ferc.gov/document-accession-no-20221019-5125).

- 90 percent designs within 12 months of license issuance.

The final trashrack design should be approved by the Service and the New Hampshire Fish and Game Department prior to implementation.

2. 10(j) Recommendation 2: *Plunge Pool Assessment*. To assess the safety of the downstream fish passage route provided by the dam notch used to supply the minimum instream flow to the bypass reach, the Licensee, within 12 months of license issuance, should survey the streambed and depth of the receiving waters within any plunge pool beneath the dam notch. Surveys should be conducted at the minimum bypass flow of 13 cfs. Survey results should be compared to the Service's Fish Passage Engineering Design Criteria for plunge pool criteria and filed with the Commission, Service, and the NHFGD. If survey results indicate the receiving waters do not meet the Service's plunge pool criteria for safe fish passage, the Licensee should implement the Service's 10(j) Recommendation 3.
3. 10(j) Recommendation 3: *Plunge Pool Alteration*. If the results of the survey provided for in the Service's 10(j) Recommendation 2 indicate that the receiving waters beneath the dam notch do not meet the Service's plunge pool criteria for safe fish passage, within 18 months of license issuance, the Licensee should develop, in consultation with the Service, a plan to provide safe downstream passage through the dam notch. The plan should consider alternatives such as stream channel modifications to improve plunge pool depth, piping of flows and fish to receiving waters of sufficient depth and location, and other reasonable alternatives based on site-specific surveys recommended in the Service's 10(j) Recommendation 2. Upon the Service's and the NHFGD's approval of the plan, the Licensee should file the plan with the Commission for approval. The Licensee should implement the Commission-approved plan within 36 months of License issuance.
4. 10(j) Recommendation 4: *Upstream American Eel Passage*. To provide the safe, timely, and effective upstream passage of juvenile American eel, within 4 years of license issuance, the Licensee should design, construct, and operate one to two upstream eel passage facility(s) at the Project. The eelway(s) should be operated continuously throughout the upstream passage season (May 1 – October 31) and should consist of one to two eel ladders and appropriate attraction flow consistent with the Service's Fish Passage Engineering Design Criteria. The location of the eelway(s) should be determined in consultation with the Service and the NHFGD and informed by the results of a 2-year American eel siting study recommended in the Service's 10(j) Recommendation 5. The Licensee should provide the Service and the NHFGD 30 days to review and comment on the 30, 60 and 90 percent design drawing sets. The Licensee should adhere to the following design milestone schedule for the upstream eel passage facility:
 - 30 percent designs within 36 months of license issuance;
 - 60 percent designs within 39 months of license issuance;
 - 90 percent designs within 42 months of license issuance.

The final design should be approved by the Service and the NHFGD prior to implementation.

5. 10(j) Recommendation 5: *Fishway Operation and Maintenance Plan*. Within 6 months of license issuance, the Licensee should develop and provide to the Service and the NHFGD a Fishway Operation and Maintenance Plan (FOMP) covering all operations and maintenance

of the Project's existing fish passage facilities. At a minimum, the FOMP shall include: (1) a schedule for pre-passage season inspections and routine fishway maintenance, including silt, sediment, and debris assessment and removal from within the fishway, as well as entrances and exits; (2) detailed procedures and schedules for each passage facility's operations (the initial FOMP should specify the operation of the existing downstream passage facilities during the out-migrating American eel passage season of June 1- November 15); (3) detailed procedures for monitoring operation and maintenance of the facilities; (4) provisions for an annual coordination meeting between the Licensee, the Service, and the NHFGD to discuss the previous and next year's fishway operations and schedules; and (5) provisions for annual evaluation, and, as needed, revision of the FOMP to address passage enhancements or shifts in management goals and objectives, and/or adjustments to passage season duration. The FOMP should be submitted to the Service and NHFGD for review and approval prior to submitting it to the Commission for approval. Thereafter, the Licensee should keep the FOMP updated on an annual basis to reflect any changes in fishway operation and maintenance planned for the year. If the Service requests a modification of the FOMP, the Licensee should amend the FOMP within 30 days of the request and send a copy of the revised FOMP to the Service and the NHFGD for approval. Upon the agencies' approval of the revised FOMP, the Licensee should file it with the Commission for approval. The Licensee should provide information on fish passage operations and Project-generating operations that may affect fish passage upon written request from the Service or the NHFGD. Such information should be provided within 10 calendar days of the request, or upon a mutually agreed upon schedule.

6. 10(j) Recommendation 6: *American Eel Passage Assessment*. To support the safe, timely, and effective upstream passage of juvenile American eel at the Project, the Licensee should develop and implement, in consultation with the Service and the NHFGD, an upstream American eel passage assessment study plan. The study plan should include provisions for (1) systematic surveys of eel presence and relative abundance conducted at regular intervals throughout the eel upstream migratory season (May 1 to October 31) or when river temperatures exceed 10°C; (2) the use of temporary/portable trap passes to assess areas of congregation identified by the systematic surveys; and (3) a report that includes information on the location, trapping interval, absolute numbers of eels trapped, relative eel sizes, and hydraulic and environmental conditions during the survey/trapping period."

- C-4. On October 21, 2022, pursuant to section 10(j) of the Federal Power Act, as amended, the New Hampshire Fish and Game Department (NHFGD) filed a letter with FERC to recommend, among other things, the same measures for protection, mitigation, and enhancement of fish and wildlife resources at the Project that USFWS filed with FERC for the Project on October 19, 2023, and labelled as recommendation nos. 1, 2, 3, and 5.⁵ On July 17, 2023, NHFGD informed NHDES that NHFGD also supported USFWS's recommendation nos. 4 and 6.
- C-5. On August 14, 2023, USFWS filed a letter with FERC to, among other things, provide comments on FERC's Environmental Assessment for the Project (see footnote 3 of this certification) and FERC's

⁵ FERC Document Accession No. [20221021-5039](https://www.ferc.gov/document-accession-no-20221021-5039).

Preliminary Determination of Inconsistency that FERC issued on July 6, 2023.^{6,7} In the letter, USFWS informed FERC that it withdrew and amended recommendations 2 and 3, respectively, that USFWS had initially recommended in its letter that it filed with FERC on October 19, 2022 (see paragraph C-3 of this certification). USFWS informed FERC that it withdrew Recommendation 2: *Plunge Pool Assessment* because FERC confirmed that there is no plunge pool below the dam's spillway notch in its Environmental Assessment for the Project; and amended Recommendation 3: *Plunge Pool Construction* to the following because of FERC's critique of that recommendation:

"10(j) Recommendation 3: *Plunge Pool Construction*. Within two years of license issuance, the Licensee must file a plunge pool construction and design plan for Commission approval. The plunge pool shall be provided by a reinforced concrete basin located above-grade at the downstream base of Watson dam under the 18-foot-wide spillway notch, and sized such that it captures all spill flow from the spillway notch. The plunge pool design shall meet any current U.S. Fish and Wildlife Service's Fish Passage Engineering Design Criteria for receiving waters and provide a receiving water depth of 4 feet. The plunge pool design shall be of adequate dimension and volume to prevent plunging fish from impacting the basin walls, bottom, or other submerged features. To limit predation, the plunge pool basin shall discharge flows to pool habitat within the bypass reach at a minimum rate of 4 fps. The design plan must include a construction schedule for the plunge pool to be operational by June 1 of the third year after license issuance.

The licensee must prepare the plan after consultation with the U.S. Fish and Wildlife Service, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, and the National Marine Fisheries Service. The Licensee must include with the plan, documentation of consultation with the resource agencies, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The Licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt an agency recommendation, the filing must include the Licensee's reasons, based on project-specific information."

In addition, USFWS provided the following comments on FERC's findings regarding USFWS's Recommendation 5: *Fishway Operation and Maintenance Plan*:

"The Service's 10(j) Recommendation 5 specified that the Licensee develop a Fishway Operation and Maintenance Plan (FOMP). A provision of the FOMP would provide for the operation of the downstream passage facilities from June 1 through November 15. The EA found that operating the downstream fish passage facility before August 15 in years when river herring are not stocked upstream of the Project would have no benefit. As such, the EA recommends the Licensee provide downstream passage for river herring and eels by operating and maintaining the downstream fish passage facility from: (1) June 1 through November 15 in years when New Hampshire Fish and Game Department (NHFGD) stocks river herring upstream of the Project;

⁶ FERC Document Accession No. [20230814-5255](#) (USFWS's August 14, 2023, comment letter).

⁷ FERC Document Accession No. [20230706-3021](#) (FERC's July 6, 2023, Preliminary Determination of Inconsistency).

and (2) August 15 through November 15 to protect eels in years when NHFGD does not stock river herring upstream of the project. [...]

While the Service generally disagrees with the EA's finding that operating the downstream fish passage collection box and fish passage pipe in all years from June 1 to August 15 would provide no benefit; the EA's recommendation provides a reasonable schedule for the seasonal operation of these facilities for the betterment of outmigrating river herring and American eel."

- C-6. On August 15, 2023, NHFGD filed a letter with FERC to, among other things, provide comments on FERC's Environmental Assessment for the Project (see footnote 3 of this certification) and FERC's Preliminary Determination of Inconsistency (see footnote 7 of this certification).⁸ In the letter, NHFGD informed FERC that it withdrew and amended recommendations 2 and 3, respectively, that NHFGD had initially recommended in its letter that it filed with FERC on October 21, 2022 (see paragraph C-4 of this certification). NHFGD informed FERC that it withdrew Recommendation 2: *Plunge Pool Assessment* because FERC confirmed that there is no plunge pool below the dam's spillway notch in its Environmental Assessment for the Project; and amended Recommendation 3: *Plunge Pool Construction* using the same language that USFWS used in the letter USFWS filed with FERC on August 14, 2023. In addition, NHFGD provided the same comments for Recommendation 5: *Fishway Operation and Maintenance Plan* that USFWS provided in its August 14, 2023 letter (see paragraph C-5 of this certification).
- C-7. On October 12, 2023, NHFGD informed NHDES that it determined that requiring the Applicant to install the plunge pool, as NHFGD described under Recommendation 3 in its August 15, 2023 letter to FERC (see paragraph C-6 of this certification), is not necessary at this time. However, NHFGD asserted that it may be necessary at a later time if circumstances of downstream fish passage at the Project change.

D. DISCHARGES

Potential and proposed discharges to surface waters from the Project include discharges of various water quantities to the Cocheco River upstream and downstream of the Project's dam, which affects flow of the Cocheco River and water surface elevation levels of the Project's impoundment.

E. CERTIFICATION CONDITIONS

Unless otherwise authorized or directed by NHDES, the following conditions shall apply to this certification:

1. **Compliance with Surface Water Quality Standards:** The Applicant shall ensure that the discharges from the Project will maintain and protect Surface Water Quality Standards of surface waters that are affected by the Project, including the chemical, physical, and biological integrity of those surface waters, to achieve the purposes of the legislative classification of those surface waters.
 - a. This condition is necessary to assure that the discharges from the Project will comply with the Surface Water Quality Standards because those standards apply to all surface waters of the

⁸ FERC Document Accession No. [20230815-5123](#).

state and any person who undertakes any activity that affects the beneficial uses or the water quality of surface waters. Those standards require, among other things, that all surface waters be restored to meet the water quality criteria for their designated classification, including existing and designated uses, and to maintain the chemical, physical, and biological integrity of surface waters; provide for the protection of designated uses; and maintain surface water quantity at levels that protect existing and designated uses.

- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:8; RSA 485-A:12, III; and Chapter Env-Wq 1700.
2. **Proposed Modifications to the Project:** The Applicant shall consult with and receive prior written approval from NHDES regarding any proposed modifications to the Project, including any modifications to the operation of the Project that could have a significant or material effect on discharges to surface waters from the Project.
 - a. This condition is necessary to assure that the discharges from the Project, with any proposed modifications, would comply with the Surface Water Quality Standards. This certification is based on the Project's proposed operation as described in the Application and the Applicant's request for certification for the Project, as modified by conditions of this certification. Additional, proposed modifications to the Project may require amendment of the associated FERC license, a new or additional water quality certification, or compliance with New Hampshire's antidegradation requirements of the Surface Water Quality Standards before the modifications are implemented. Therefore, the Applicant must notify NHDES of proposed modifications to the Project so that NHDES can determine the applicability of certain laws and rules implemented by NHDES.
 - b. Citations that authorize this condition: section 401 of the CWA; 40 CFR § 121.1; RSA 485-A:12, III; and Env-Wq 1708.
3. **Compliance Inspections:** The Applicant shall allow NHDES to inspect the Project and have access to inspect any records and monitoring equipment at reasonable times to determine compliance with the conditions of this certification.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because NHDES' inspections would help ensure compliance with and enforcement of the conditions of this certification.
 - b. Citations that authorize this condition: section 401(a)(4) of the CWA; 40 CFR § 121.11(a); RSA 485-A:12, III; and RSA 485-A:18.
4. **Submittal of Information:** The Applicant shall provide to NHDES such information pertaining to discharges into surface waters of the Project upon written request of the NHDES within 5 days of the request or other time period mutually agreeable to the Applicant and NHDES.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because NHDES' evaluation of the

requested information would help ensure compliance with and enforcement of conditions of this certification.

- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:12, III; and RSA 485-A:18.
5. **Transfer of Certification:** If the Applicant plans to transfer or consolidate responsibility of the Project to another person (i.e., any municipality, governmental subdivision, public or private corporation, individual, partnership, or other entity), the Applicant shall provide the contact information of the new person, including the name, mailing address, phone number, and email address of the person, in writing to NHDES prior to the transfer.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because NHDES and other persons must be able to know who is responsible for the Project, and so NHDES may appropriately target inspection and enforcement of certification conditions, as necessary, to ensure compliance with and enforcement of conditions of this certification.
 - b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:12, III; and RSA 485-A:18.
6. **NHDES Water Use Registration and Reporting:** The Applicant shall measure all withdrawals and discharges of the Project and report them to the NHDES Water Use Registration and Reporting Program, in accordance with RSA 488:3, and the New Hampshire Code of Administrative Rules Env-Wq 2102 – Water Use Registration and Reporting.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because water use data is necessary to understand the effects of cumulative uses, transfers, discharges, and consumptive water losses in aquifers and watersheds in the state. Water use data is also necessary for verifying compliance with Surface Water Quality Standards related to quantity of surface waters.
 - b. Citations that authorize this condition: section 401(a) of the CWA; RSA 485-A:12, III; RSA 488; Env-Wq 2102; Env-Wq 1703.01(d); Env-Wq 1705.01(a); and Env-Wq 1708.09(a).
7. **NHDES Water Conservation:** The Applicant shall either comply with the rules for water conservation under New Hampshire Code of Administrative Rules Env-Wq 2101 – Water Conservation, which NHDES adopted in accordance with RSA 485:61, that are relevant to the Project, or hold a waiver to those rules from NHDES.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because the water conservation requirements strike a reasonable balance between environmental, energy, and economic impacts and be consistent with current industry standards and practices for different types of water users, including existing uses, designated uses, and best management practices specified under the Surface Water Quality Standards.

- b. Citations that authorize this condition: section 401(a) of the CWA; RSA 485-A:12, III; RSA 485:61; and Env-Wq 2101.
8. **NHDES Coastal Zone Program:** In accordance with 16 U.S. Code § 1456(c)(3)(A) (i.e., section 307(c)(3)(A) of the Coastal Zone Management Act), the Applicant shall obtain a finding from the New Hampshire Coastal Program that the Applicant’s federal consistency certification for the Project complies with the enforceable policies of New Hampshire’s federally-approved coastal management program.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because the enforceable policies of New Hampshire’s federally-approved coastal management program help ensure compliance with the Surface Water Quality Standards, including the protection of existing and designated uses.⁹
 - b. Citations that authorize this condition: section 401(a) of the CWA and RSA 485-A:12, III.
9. **Flow / Impoundment Management:** The Applicant shall operate the Project in accordance with the following requirements, which may be temporarily modified if required by operating emergencies beyond the control of the Applicant, such as flooding or drought, and as specified in a flow and impoundment compliance monitoring plan required in Condition 11 of this certification. These requirements may be temporarily modified upon mutual agreement between NHDES, NHFGD, and the Applicant, and approval by FERC and any other federal agency that has the authority to specify flow or impoundment levels of the Project. The Applicant shall determine surface water flows and elevation levels based on measurement data that is collected no less frequently than hourly.

This certification does not require the Applicant to comply with the following requirements during an “emergency condition”, which is defined under Env-Wr 101.15 as: “(a) A situation has arisen at a dam which could jeopardize the integrity of the dam; or (b) Failure of the dam is imminent or has occurred.”

- i. **Run-of-River Flow:** The Applicant shall operate the Project in a run-of-river mode whereby inflow to the Project approximates outflow from the Project at all times and water levels above the dam are not drawn down for the purpose of generating power.
- ii. **Bypass Reach Facility Flows:** The Applicant shall comply with the following bypass facility water flow requirements.
 - (1) At all times, the Applicant shall discharge a continuous minimum flow of no less than 19.6 cfs, or inflow to the Project, whichever is less, to the bypass reach of the Project.

⁹ A copy of the New Hampshire Coastal Program Enforceable Policies can be downloaded from the following NHDES website (accessed August 15, 2023):
<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/nhcp-enforceable-policies.pdf>.

(2) From June 1 through November 15 in years when NHFGD stocks river herring upstream of the Project, and from August 15 through November 15 in years when NHFGD does not stock river herring upstream of the Project, the Applicant shall discharge a minimum of 20 cfs to the downstream fish passage facility.

iii. **Impoundment Water Elevation Level:** The target impoundment water elevation under normal operating conditions shall be 110.06 feet NAVD 88, which is 0.5 inches below the flashboard crest elevation of 110.1 feet NAVD 88. The Applicant shall minimize the magnitude and frequency of fluctuations in the impoundment of the Project to the maximum extent practicable and shall not draw the water level in the impoundment down by more than one inch for the purpose of generating power.

If requested by NHDES, the Applicant shall submit a plan for NHDES approval to minimize the magnitude and frequency of impoundment fluctuations to the maximum extent practicable, due to factors that may include, but are not limited to, Project power generation and flashboard failure. The plan shall be submitted to NHDES within 120 days (or other date acceptable to NHDES) of when the NHDES issues the written request. The Applicant shall then implement the NHDES approved plan.

iv. **Impoundment Drawdown Procedure for Scheduled Maintenance or Repairs:** When drawing the water level in the impoundment down for scheduled maintenance or repairs, the Applicant shall lower the impoundment water level no more than six inches per 24-hour period.

v. **Impoundment Refill Procedure:** When refilling the impoundment of the Project after drawdown for maintenance or emergencies, the Applicant shall maintain bypass reach facility flows specified in Condition 9.ii. to the extent practicable, release 90 percent of the inflow to the Project downstream to the Coheco River, utilize the remaining 10 percent of inflow to refill the impoundment.

a. These conditions are necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because minimum flows downstream of the Project' dam and management of the surface water elevation level of the Project's impoundment will maintain and protect existing uses and designated uses of the Coheco River and the impoundment. These conditions will restore and protect the designated uses and existing uses in and on surface waters impacted by the Project, and maintain the chemical, physical, and biological integrity of those surface waters. These requirements will support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of the region; and ensure that existing uses and designated uses, and the water quality needed to maintain and protected those uses, are not eliminated.

Designated uses of surface waters, both upstream and downstream of the Project, that are impacted by the Project include the following:

- Aquatic life integrity, meaning the surface water must support aquatic life, including a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of the region. Examples of aquatic life integrity that may be impacted by the Project include wetland vegetation; and habitat of birds, benthic macroinvertebrates, mammals, fish, mussels, reptiles, and amphibians.
- Wildlife, meaning the surface water can provide habitat capable of supporting any life stage or activity of undomesticated fauna on a regular or periodic basis. Examples of wildlife that may be impacted by the Project include birds, benthic macroinvertebrates, mammals, fish, mussels, reptiles, and amphibians.
- Swimming and other recreation in and on the water, meaning the surface water must be suitable for swimming, wading, boating of all types, fishing, and similar activities. Examples of recreation that may be impacted by the Project include fishing, boating, and swimming.

Existing uses of surface water that are impacted by the Project include, but are not limited to, the following: withdrawals for industry; withdrawals for drinking water; hydropower; fishing; and on-water recreation.

- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:8; RSA 485-A:12, III; Env-Wq 1703.01; Env-Wq 1703.19; Env-Wq 1705.01(a); and Env-Wq 1708.03(a).

10. Flow / Impoundment – Notification and Reporting: The Applicant shall comply with the notification and reporting requirements specified in items 10.i through 10.iii, below.

- i. If the Project causes a deviation from the flow or impoundment management requirements in Condition 9, the Applicant shall notify NHDES and NHFGD no later than 24 hours after each such incident. The notification shall include, to the extent known, an explanation as to why the deviations occurred, a description of corrective actions taken, and how long it will take until operations will comply with Condition 9.
- ii. Within 45 days after each incident, the Applicant shall submit a report to NHDES and NHFGD that contains, to the extent possible, the cause, severity, and duration of the incident, any observed or reported adverse environmental impacts from the incident, pertinent data and a description of corrective measures completed or proposed by the Applicant.
- iii. By April 1 of each year (beginning the first April after the date the FERC license is reissued), the Applicant shall submit to NHDES and NHFGD a summary report for the previous calendar year with appropriate tables, graphs, text and supporting documentation that demonstrates compliance with the flow/ impoundment management requirements in Condition 9. For each deviation that occurred, if any, during the reporting period, the summary shall indicate when the deviation occurred,

the duration of the deviation, and a description of corrective actions taken to prevent such deviation from reoccurring.

- a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because reporting compliance or deviations of requirements of Condition 9 will allow NHDES and other persons to know whether the Applicant is complying with certain flow and impoundment management requirements that ensure compliance with Surface Water Quality Standards. If the reports identify noncompliance with Surface Water Quality Standards, NHDES and other persons may respond to help ensure compliance with Surface Water Quality Standards, mitigate unauthorized degradation of surface water quality, or restore and maintain the chemical, physical, and biological integrity of surface waters through enforcement or other mechanisms.
- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:8; RSA 485-A:12, III; RSA 485-A:18; Env-Wq 1703.01; Env-Wq 1703.19; Env-Wq 1705.01(a); and Env-Wq 1708.03(a).

11. Flow / Impoundment – Compliance Monitoring Plan (FICMP): Within 120 days of license issuance or other time period mutually agreeable to the Applicant and NHDES, the Applicant shall develop, file with FERC, and implement a flow and impoundment level monitoring and compliance plan (FICMP) that includes, at a minimum, the items specified in 11.i through 11.ix, below.

The FICMP, including any proposed revisions, shall be developed in consultation with NHDES and NHFGD, and submitted to NHDES for review and approval. The FICMP shall be kept up-to-date so that it reflects current operation of the Project. When revisions are made, the Applicant shall submit the updated FICMP to NHDES for approval within 10 days, or other time period mutually agreeable to the Applicant and NHDES, of making the revisions. If NHDES requests the FICMP to be updated, the Applicant shall submit the updated FICMP to NHDES for approval within 30 days, or other time period mutually agreeable to the Applicant and NHDES, of receiving a written request from NHDES to update the FICMP. Subject to any required approval(s) from FERC and other federal agencies, the Applicant shall implement the approved FICMP. The FICMP shall include, but not be limited to, the following:

- i. A description of the type of manual and automatic operation of the Project, including on-site and remote operation;
- ii. A detailed description of how the Project will be operated under all conditions (i.e., under normal operating conditions as well as during low flow, high flow, maintenance, and emergency conditions) to maintain compliance with the flow and impoundment level management requirements in Condition 9, including how the Applicant will determine whether NHFGD has stocked river herring upstream of the Project;
- iii. A description that includes calculations of how the bypass reach facility flows will be maintained during scheduled drawdowns and the minimum impoundment level that will pass the bypass reach facility flows;

- iv. A description of the mechanisms and structures (i.e., type, location and accuracy of all flow and impoundment elevation monitoring equipment and gages) to be used for maintaining compliance with operational requirements;
- v. Set point elevations for turning turbines on and off;¹⁰
- vi. Procedures for maintaining and calibrating monitoring equipment;
- vii. Rating curves and calculations for all methods of releasing flow downstream;
- viii. Procedures for collecting and recording continuous data (i.e., no less frequent than hourly and preferably every 15 minutes) on inflow, flow releases at the Project (i.e., bypass facility flows, spillage, and turbine discharge), and impoundment levels; and
- ix. A mussel protection plan that articulates measures to be implemented to protect mussel species from Project impacts associated with impoundment drawdowns due to flashboard failure or required maintenance and limit the effect of Project operations on mussel species during any drawdown.

a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because the development and implementation of a FICMP describing how flow and impoundment water level will be managed, monitored, and reported will document and facilitate the Applicant's execution of the Project in accordance with conditions of this certification. In addition, a FICMP is necessary because it will provide NHDES with the methods that the Applicant will employ to comply with conditions of this certification so that NHDES can determine compliance with and enforce the conditions, as necessary, to help ensure compliance with Surface Water Quality Standards.

b. Citations that authorize this condition: section 401(a) of the CWA; RSA 485-A:8; RSA 485-A:12, III; RSA 485-A:18; Env-Wq 1703.01; Env-Wq 1703.19; Env-Wq 1705.01(a); and Env-Wq 1708.03(a).

12. Water Quality Improvement Plan (WQIP): If NHDES determines that the Project is causing or contributing to a violation of Surface Water Quality Standards at a magnitude, duration, and frequency that contributes to an impaired designated use, or is not protecting or maintaining an existing use, then NHDES shall notify the Applicant in writing, and the Applicant shall submit a WQIP to NHDES for approval within 120 days of the notification or other time period mutually agreeable to the Applicant and NHDES:

- i. The purpose of the WQIP is to restore surface waters to meet surface Water Quality Standards, in accordance with Env-Wq 1703.01(b), for parameters that are influenced by the Project.
- ii. If the riverine segments immediately upstream and beyond the influence of the Project impoundment are not meeting Surface Water Quality Standards, then the

¹⁰ Set point elevations for providing bypass facility flows should account for the accuracy of the pond level sensor equipment. For example, if the accuracy is +/- 0.01 feet, the sensor should be set 0.01 feet above the elevation determined.

purpose of the WQIP is to restore surface waters so that the parameters of water quality that are influenced by the Project are not any worse than in the upstream riverine segment.

- iii. Parameters that may be influenced by the Project include, but are not limited to, dissolved oxygen, temperature, pH, nutrients, chlorophyll-a, secchi disk (i.e., turbidity), and water quantity (i.e., flow and volume of surface water, including surface water elevation levels).
 - iv. The WQIP shall include:
 - (1) Measures to achieve the purpose of the WQIP;
 - (2) A schedule for implementing the measures;
 - (3) Water quality monitoring and reporting to determine the effectiveness of the implemented measures;
 - (4) Recommendations for next steps; and
 - (5) The monitoring and reporting specified in Condition 13 if there is violation of Surface Water Quality Standards for dissolved oxygen, pH, or temperature.
 - v. The Applicant shall implement the approved WQIP upon NHDES approval of the plan. If the monitoring shows that properly implemented measures of the WQIP are not effective to achieve the purpose of the WQIP within 5 years from implementation of the measures, NHDES may request an amendment to the WQIP. In such cases, NHDES shall notify the Applicant in writing, and the Applicant shall submit an amendment to the WQIP to NHDES for approval within 120 days of the request or other time period mutually agreeable to the Applicant and NHDES.
 - (1) The Applicant shall incorporate any changes to Project operation included in the approved WQIP in the FICMP and submit the updated FICMP to NHDES for approval as specified in Condition 11.
 - (2) The Applicant shall not be subject to Condition 12 for the violation of Surface Water Quality Standards that initially triggered the condition once NHDES notifies the Applicant in writing that NHDES has determined that the Applicant has achieved the purpose of the WQIP.
 - a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because it would be necessary to address any violations of Surface Water Quality Standards caused by the Project that may arise in the future at a magnitude, duration, and frequency that contributes to an impaired designated use, or failure to maintain and protect an existing use, in the Project influenced waters.
 - b. Citations that authorize this condition: section 401(a) of the CWA; RSA 485-A:8; RSA 485-A:12, III; Chapter Env-Wq 1700.
- 13. Dissolved Oxygen, Temperature, and pH Water Quality Monitoring and Reporting:** In the event that Condition 12 is triggered by a violation of Surface Water Quality Standards at a magnitude, duration, and frequency that contributes to an impaired designated use related to dissolved oxygen, pH, or temperature, and NHDES requests a WQIP, then the Applicant shall include in the WQIP a schedule to conduct water quality monitoring within the Project boundary at least every

five years to: 1) determine the effects of Project operation, both spatially and temporally (in terms of flow, impoundment elevation, and power generation) on water temperature, pH, and dissolved oxygen (i.e., dissolved oxygen concentration and dissolved oxygen percent saturation); 2) to compare results to Surface Water Quality Standards; and 3) to determine if additional changes in Project operation or the WQIP are necessary to comply with Surface Water Quality Standards. In the WQIP specified in Condition 12, the Applicant shall specify that it will submit a monitoring and reporting plan that describes, in detail, how, when and where monitoring will be conducted, and results reported:

- i. Unless otherwise authorized or directed by NHDES, the monitoring and reporting plan shall specify that monitoring that year shall last for at least five weeks and include periods of relatively low flows and high temperatures as well as at times when the Project is, and is not, generating power.
 - ii. Continuous (i.e., every 15 minutes) monitoring of temperature, pH, and dissolved oxygen (i.e., dissolved oxygen concentration and dissolved oxygen percent saturation) shall be conducted in the riverine reaches just upstream of the Project impoundment, at the deep spot of the Project impoundment, and below the dam of the Project and the Project tailrace, and vertical profiles for temperature and dissolved oxygen shall be conducted each week at the deep spot of the impoundment. Continuous (i.e., every 15 minutes) estimates of impoundment elevation, inflow, tailrace flow, and generation shall also be provided.
 - iii. By December 31st of each year that monitoring is conducted, the Applicant shall submit a report and supplemental information that clearly demonstrates via text, tables and plots, the spatial and temporal effect of Project operation on surface water quality and if Surface Water Quality Standards are met:
 - (1) Results of quality assurance/quality control checks (calibration, hand-held meter checks, duplicates, etc.) and identification of any deviations from the monitoring and reporting plan shall be clearly identified.
 - (2) In addition to the report, water quality (including uncorrected and any corrected data), continuous impoundment elevation, and continuous flow data (including calculations) should be provided in a working Microsoft Office Excel workbook or other database acceptable to NHDES.
 - (3) The Applicant shall also enter all data into the NHDES Environmental Monitoring Database (EMD) within 120 days of when monitoring is completed in each year monitoring is conducted.
 - iv. Should monitoring indicate that violations of Surface Water Quality Standards for dissolved oxygen, pH, or temperature persist, the Applicant shall consult with NHDES and, if requested by NHDES in writing, submit an amended WQIP in accordance with Condition 12.
- a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because dissolved oxygen, pH, and temperature are among the Surface Water Quality Standards to be impacted by the Project. If a violation of a Surface Water Quality Standard for dissolved oxygen, pH, or temperature

arises in the future at a magnitude, duration, and frequency that contributes to an impaired designated use, additional monitoring would be necessary during the term of the license. This is because FERC licenses are typically issued for 30 to 50 years and, during that time, conditions in the watershed that could affect water quality in the Project impoundment and Project discharges to the tailrace and bypass reach, can change. For example, an increase in the frequency and magnitude of lower river flows and higher temperatures caused by climate change could result in an increase in the frequency and magnitude of dissolved oxygen and pH excursions and higher water temperatures. If a WQIP becomes necessary, as described in Condition 12, because of a violation of a Surface Water Quality Standard for dissolved oxygen, pH, or temperature, additional monitoring would be necessary.

- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:8, II; RSA 485-A:12, III; Env-Wq 1703.07; Env-Wq 1703.13; and Env-Wq 1703.18.

14. Fish Passage and Protection: The Applicant shall implement the following items that USFWS recommended for the Project in a letter that USFWS filed with FERC on October 19, 2022, as amended by a letter that USFWS filed with FERC on August 14, 2023; and as supported by NHFGD in an email to NHDES on July 17, 2023, and in letters that it filed with FERC on October 19, 2023, and August 15, 2023 (see paragraphs C-3, C-4, C-5, and C-6 of this certification):

- i. Trashrack Replacement;
- ii. Fishway Operation and Maintenance Plan;
- iii. Upstream American Eel Passage;
- iv. American Eel Passage Assessment; and
- v. Plunge Pool Alteration, subject to the following:

(1) The Applicant shall only implement this item if NHDES determines, in consultation with NHFGD, that circumstances of downstream fish passage at the Project have changed and the Project is causing mortality or injury to fish at a magnitude, duration, and frequency that does not provide for the protection and propagation of fish and results in a violation of Env-Wq 1703.01(c). NHDES shall notify the Applicant in writing of this determination and the Applicant shall implement the actions described under Recommendation 3 of NHFGD's August 15, 2023 letter. However, the Applicant shall file the plunge pool plan with FERC within two years of NHDES's notification, and the Applicant shall make the plunge pool operational by June 1 of the third year after NHDES's notification.

- a. This condition is necessary to assure that the discharges from the proposed Project will comply with the Surface Water Quality Standards because the implementation of the recommendations would help protect, mitigate, and enhance fish and wildlife resources that are impacted by the Project and provide for adequate fish passage. Paragraph v. is an adaptive management condition necessary to assure that the proposed Project will comply with Env-Wq 1703.01(c) of the Surface Water Quality Standards.

- b. Citations that authorize this condition: section 401 of the CWA; RSA 485-A:8; RSA 485-A:12, III; Env-Wq 1703.01; Env-Wq 1703.19; and Env-Wq 1708.03(a).

F. NHDES CONTACT

Notifications, reports, and other items that must be submitted to NHDES under a condition of this certification should be sent to the NHDES Water Quality Certification Supervisor and to the following NHDES email address: wqc@des.nh.gov. On the date this certification is granted, James Tilley is the NHDES Water Quality Certification Supervisor and can be reached at james.w.tilley@des.nh.gov or (603) 271-0699. If you have questions regarding this certification, please contact James Tilley. If you are unable to reach the NHDES Water Quality Certification Supervisor, please contact NHDES at (603) 271-3503.


G. ENFORCEMENT

Certification conditions are subject to enforcement mechanisms available to the federal licensing or permitting agency and to the state of New Hampshire, including those provided under RSA 485-A:12, I, RSA 485-A:12, III, and 33 U.S.C. § 1365.

H. APPEAL PROCESS

Any person aggrieved by the decision to grant this certification with conditions, may appeal to the N.H. Water Council ("Council"). An Environmental Fact Sheet with information on appealing a decision of the NHDES can be found at the following link: [CO-7 \(nh.gov\)](#). A link to the Council's rules, is available on the [New Hampshire Environmental Council website](#) (or more directly at the [Water Council page](#)). Copies of the rules also are available from the NHDES Public Information Center at (603) 271-2975.

I. SIGNATURE AND DATE



Rene J. Pelletier, P.G., Director
NHDES Water Division



Date

ec: John N. Webster, General Partner, Watson Associates (the Applicant), hydromagnt@gwi.net
John Mullen, Chair, Cocheco River Local Advisory Committee, lunar.look34@gmail.com
J. Michael Joyal, Jr., City Manager, City of Dover, m.joyal@dover.nh.gov
Ken Hogan, USFWS Hydropower Program, kenneth_hogan@fws.gov
Michael Dionne, NHFGD Environmental Review Coordinator, michael.dionne@wildlife.nh.gov
Cheri Patterson, NHFGD Marine Division Chief, cheri.a.patterson@wildlife.nh.gov
Erin Holmes, NHDES Watershed Management Bureau Administrator, erin.l.holmes@des.nh.gov
Chris Williams, NHDES Program Coordinator NH Coastal Program, christian.p.williams@des.nh.gov

WQC 2022-FERC-002

Watson Dam Hydroelectric Project (FERC No. 6240)

Page 20 of 20

Tracie Sales, NHDES Rivers and Lakes Programs Administrator, tracie.sales@des.nh.gov

Kelsey Vaughn, NHDES Water Conservation Program, kelsey.a.vaughn@des.nh.gov

Christina Rambo, NHDES Water Use Registration and Reporting Program, christina.m.rambo@des.nh.gov

Judith Sears Houston, NHDES Water Quality Planning Section Supervisor, judith.e.houston@des.nh.gov

Ted Diers, NHDES Water Division Assistant Director, theodore.e.diers@des.nh.gov

FERC E-File (<https://ferc.gov/ferc-online/overview>)