REVIEW OF APPLICATION FOR LIHI CERTIFICATION OF THE ROLLINSFORD HYDROELECTRIC PROJECT

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FERC Project No. 3777 Salmon Falls River, Town of Rollinsford, NH

Source: GMP 2022

February 27, 2023 Nuria Holmes, LIHI Reviewer

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FINAL REVIEW OF APPLICATION FOR LIHI CERTIFICATION OF THE ROLLINSFORD HYDROELECTRIC PROJECT

This report provides final review findings and recommendations related to the certification application submitted to the Low Impact Hydropower Institute (LIHI) by Green Mountain Power (GMP or "Applicant"), who operates the Rollinsford Project (FERC Project No. 3777) (Rollinsford Project) on behalf of the Town of Rollinsford, New Hampshire. The final certification application package was filed on December 30, 2022, and is subject to review under the current 2nd edition LIHI Handbook (Revision 2.05, January 1, 2022).

I. INTRODUCTION

The 1.5-megawatt (MW) Rollinsford Project is located in Maine and New Hampshire on the Salmon Falls River, and lies at the intersection of the Town of Rollinsford in Strafford County, New Hampshire (NH), and the Town of South Berwick in York County, Maine (ME). The majority of the Project's infrastructure including the intake, penstocks, and powerhouse are located in the Town of Rollinsford, NH. The left abutment of the dam is located in South Berwick, ME.

The Rollinsford Dam was originally constructed in 1910. The penstock was built in 1923. In the early 1980's, a 9-foot-diameter, 3/8-inch-thick steel liner was installed within the lower 250 feet of the penstock. The existing hydropower generating units were installed in 1983. No major modifications have been made to the Rollinsford Project since it's original construction.

II. PROJECT LOCATION

The Rollinsford Project is located at approximately river mile (RM) 5.0 and is the second dam on the main stem of the Salmon Falls River (Figure 1). The South Berwick Project (FERC Project No. 11163) is located between the Rollinsford Project and the mouth of the Salmon Falls River. The river reach below the South Berwick Project (RM 0.0 to the coast) is tidally influenced. Approximately 3.9 miles downstream of the South Berwick dam, the Salmon Falls River joins the Cocheco River to form the confluence of the Piscataqua River near Dover, New Hampshire.

Upstream of the Rollinsford Project, there were historically 24 dams, but some have been removed, breached, or are in ruins (Figure 2).¹ Today, there are 15 dams on the Salmon Falls River, seven of which are used for hydropower generation. The other dams are used for flood control, water supply, and recreation (FERC 2022). The next dam upstream on the Salmon Falls River, the Lower Great Falls Dam (FERC Project No. 4451) which is owned and operated by the City of Somserworth and GMP, is located at RM 3.1 (2.2 miles away).

The Rollinsford Project is located in watershed unit area 01060003. The watershed at the dam covers 232 square miles, which is approximately 98.3% of the Salmon Falls River drainage area.

¹ A complete list of current and historic dams on the Salmon Falls River can be found in GMP's 2022 Certification Application Table 1-1, pg. 5 (2022).



Figure 1 Location of Rollinsford Project



Figure 2 Current and Historic Dams on the Salmon Falls River

III. EXISTING FACILITIES

The Rollinsford Project is a 1.5-MW run-of-river project such that the inflows approximately equal the outflows. The Project's facilities include (Figure 3) (Photos 1-10):

- a 19-foot-high, 317-foot-long concrete gravity dam consisting of 12-foot-long left abutment, a 247-foot-long spillway section, a 22-foot-long right abutment, and a 36foot-long gated section containing five (5) vertical lift gates, with a crest elevation of approximately 70 feet msl (National Geodetic Vertical Datum of 1929 [NGVD 29]) and 15-inch-high flashboards, resulting in a normal pond elevation of 71.25 feet msl NGVD 29;
- an integral 247-foot-long spillway section with a flood discharge capacity of 17,300 cubic feet per second (cfs);²
- an impoundment with a gross volume of 456 acre-feet with a surface area of 84 acres at the normal pond elevation of 71.25 feet msl NGVD 29 and negligible useable storage volume;
- a concrete reinforced intake structure on the left (eastern) abutment of the dam measuring approximately 52 feet wide by 82 feet long;
- five manually operated vertical lift gates located at the entrance to the intake headworks each measuring approximately 5.5 feet high and 5.5 feet wide (two of the gates are operated with Rodney Hunt crank actuators, and the remaining three gates are operated with Rodney Hunt handwheel actuators);
- trashracks with a 2.5-inch bar spacing and measuring 17.6 feet high by 22.8 feet wide;
- a concrete penstock measuring 10 square feet by 600 feet long, traveling from the intake headworks structure to the foreboy at the powerhouse;
- a forebay measuring approximately 40 feet wide by 30 feet long constructed of reinforced concrete with a crest elevation of 73.0 feet msl NGVD 29;
- a 38-foot-long by 60-foot-wide brick masonry powerhouse;
- two identical vertical 750-kilowatt (kW) (833 kVA at 0.9 Power Factor) Siemens Allis synchronous generators each with an output voltage of 4,160 volts and two identical vertical James Leffel Co. Type "Z" Francis turbines, each having a rated output of 1,000 horsepower (hp) and operating at 360 revolutions per minute (rpm) at a rated flow of 228 cubic feet per second (cfs) and an average head of 45 feet;
- a 680-foot-long bypass reach between the dam and the tailrace; and
- appurtenant facilities.

The Project feeds power into a 100-foot-long underground transmission line to a 2000 kVA 4.16/13.8 kV step-up transformer located adjacent to the powerhouse. The Project's average annual generation from 2005-2018 was 5,837 megawatt-hours (MWh). There are no FERC authorized recreation facilities associated with the Rollinsford Project.

The current FERC project boundary encloses approximately 82 acres, including approximately 70 acres of the impoundment, approximately 7 acres of land on the shoreline

 $^{^{2}}$ There are no low-level outlet gates at the Rollinsford Dam; flow conveyance over the dam is limited to the spillway.

of the impoundment above the normal maximum pool elevation of 71.25 feet msl NGVD 29, the 680-foot-long bypassed reach, approximately 0.4 acres of land adjacent to the bypassed reach on the east side of the river, and land underlying the Project facilities listed above (FERC 2022). The bypass reach width varies from a maximum of approximately 265 feet just below the dam, to a minimum of approximately 120 feet at the lower end of the reach near the powerhouse. All land within the FERC Project boundary is fee-owned property. During the recent relicensing, GMP proposed to modify the existing FERC project boundary, which would increase the area enclosed by the FERC project boundary to a total of 88 acres.



Figure 3 Key Project Structures and Features



Source: GMP 2022 Photo 1 Upstream View of Rollinsford Dam



Source: GMP 2022 Photo 2 Project Impoundment



Source: GMP 2022 Photo 3 Intake Headwork Gates



Source: GMP 2022 Photo 4 Penstock Intake and Trashracks



Source: GMP 2022 Photo 5 Intake Headworks Skimmer Waste Gate



Source: GMP 2022 Photo 6 Penstock



Source: GMP 2022 Photo 7 Forebay



Source: GMP 2022 Photo 8 Forebay (left) and Powerhouse (right)



Source: GMP 2022 Photo 9 Substation



Source: GMP 2022 Photo 10 Tailrace

IV. EXISTING OPERATIONS

The Rollinsford Project's new license was issued June 16, 2022, and expires June 1, 2062 (new license). GMP operates the Rollinsford Project purusant to the terms, conditions, and license requirements outlined in their new license. GMP operates the Rollinsford Project as a run-of-river facility. The impoundment is maintained at a flashboard crest elevation of 71.25 feet msl NGVD 29. When the Project is generating, water is diverted from the impoundment to the intake headworks structure via the headgates. From the intake headworks structure, water is passed through the penstock and enters the forebay which provides water to the turbines, and is then discharged to the tailrace and the Salmon Falls River. When not generating, water is passed over the dam into the bypassed reach (FERC 2022). Under Article 403 of the new license, GMP must release minimum flows to the 680-foot-long bypass reach, to protect and enhance aquatic resources and water quality, in a manner consistent with the Maine Department of Environmental Protectin (MDEP) and the New Hampshire Department of Environmental Services (NHDES) Water Quality Certification (WQC) condition 2A and E-10(b), respectively.

A pond level sensor is installed near the intake to monitor and ensure the Project impoundment is maintained at the flashboard crest elevation, and to regulate the turbine operation. The Project maintains a continuous minimum bypass flow of 35 cfs or inflow, whichever is less. The Project is operated under an average head of 45 feet.

The flashboards on the spillway crest are constructed of wood and held in place with steel pins. Flashboards are typically replaced as-needed after high-flow events. During installation/repair of the spillway flashboards, the Project impoundment is temporarily drawn down by increasing generation flows above inflow rates, during a time when streamflow conditions allow. The impoundment level is lowered just below the spillway crest to allow operations personnel to safely work on the spillway crest. Flashboards and pins are then repaired or replaced as needed. When restoring the elevation of the impoundment, 90 percent of the inflow is passed downstream, allowing the impoundment to slowly rise and prevent dewatering of the river reach below the dam.

V. REGULATORY AND COMPLIANCE STATUS

The Rollinsford Project was issued its original minor FERC license on September 18, 1981, with an expiration date of August 31, 2021 (16 FERC \P 62,474 (1981) (FERC 2022). As noted above, the new license was issued June 16, 2022.

A WQC was issued on June 1, 2021 by the MDEP. NHDES issued a separate WQC on June 10, 2021. Both WQCs were incorporated into the FERC license which includes the following compliance requirements:

License Article	Compliance Point				
	 (a) Requires licensee to file the following management plans: Water Quality Mitigation and Enhancement Plan (filed November 21, 2022) Operations Compliance Monitoring Plan (filed November 21, 2022) Final Fishway Operation and Maintenance Plan (due July 18, 2023) Fish Passage Effectiveness Testing Plan (due November 14, 2025) Interim and Permanent Upstream Anadromous Fishway Design and Operational Plan (due December 15, 2025) Interim and Permanent Downstream Fishway Design and Operational Plan (due December 1, 2024) Interim and Permanent Upstream Eel Fishway Design and Operational Plan (due March 1, 2027) and Long Term Water Quality Monitoring (due February 18, 2027, and subsequently every five years thereafter). 				
401	 (b) Requires licensee to file reports and schedules: Flow and Impoundment Management Report (due May 31, 2023) Upstream and Downstream Anadromous Fish Implementation Schedule (due May 14, 2026) Downstream Eel Passage Implementation Schedule (due May 14, 2026) Upstream Eel Siting Survey Results (due November 30, 2026) Interim Upstream and Downstream Anadromous Fish Fishway Effectiveness Monitoring Reports (due April 26, 2027) Interim Downstream Eel Fishway Effectiveness Monitoring Report (due April 16, 2027) Upstream Eel Passage Implementation Schedule (due June 30, 2027) Long Term Water Quality Monitoring Report (due February 29, 2027, and subsequently every five years thereafter) Final Upstream Anadromous Fish Fishway Effectiveness Monitoring Reports (due April 16, 2029) Interim Upstream Eel Fishway Effectiveness Monitoring Report (due April 16, 2029) Final Downstream Anadromous Fish Fishway Effectiveness Monitoring Report (due April 16, 2029) Final Downstream Eel Fishway Effectiveness Monitoring Report (due April 16, 2029) Final Downstream Eel Fishway Effectiveness Monitoring Report (due July 14, 2029) and Final Upstream Eel Fishway Effectiveness Monitoring Report (due July 14, 2029) and 				
	 Final Upstream Eel Fishway Effectiveness Monitoring Report (due June 29, 2031) 				

License Article	Compliance Point				
	(c) Notify FERC of planning, temporary modifications to mandatory condition				
	 requirements (d) Notify FERC of unplanned deviations from mandatory conditions requiring more than three hours or resulting in environmental effects (e) Notify FERC of unplanned deviations from mandatory conditions lasting three hours or less with no environmental effects (Note: the due date of this report was changed via a February 9, 2023 license amendment Order to May 31 annually). (f) File amendment applications when necessary 				
402	Reserves FERC authority to require GMP to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior or Secretary of Commerce pursuant to section 18 of the Federal Power Act				
403	Requires GMP release a minimum bypass flow of 35 cfs or inflow if less through a notch in the flashboards at the Project dam. Should upstream anadromous fish passage facilities be installed at the Project, a minimum bypass flow of 35 cfs or inflow if less is required from July 16 through April 14 from the downstream fish passage facility and 60 cfs is required from April 15 through July 15 from a combination of the downstream fish passage facility and upstream fish passage facility and upstream fish passage facility at the dam.				
404	Within one year of license issuance, GMP must file, for FERC approval, and include a consultation record, a downstream fish passage plan that provides for the installation of downstream fish passage facilities at the project for downstream migrating anadromous fish species and American eels.				
405	To protect the federally listed northern long-eared bat (NLEB) during its active season (April 1 to October 1), GMP must limit non-hazardous tree removal to the period of October 2 through March 31. Tree removal is defined herein as cutting down, harvesting, destroying, trimming, or manipulating in any other way the non-hazardous trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats (i.e., woody vegetation greater than or equal to 3 inches diameter at breast height).				
406	Implement the Programmatic Agreement Among the Federal Energy Regulatory Commission (FERC), the New Hampshire State Historic Preservation Office, and the Maine State Historic Preservation Office for Managing Historic Properties that May be Affected by Issuing a Subsequent License to the Town of Rollinsford, New Hampshire for the Continued Operation of the Rollinsford Hydroelectric Project in Strafford County, New Hampshire and York County, Maine (FERC No. 3777-011) executed on January 10, 2022, and including but not limited to the Historic Properties Management Plan (HPMP).				
	File an HPMP within one year of license issuance.				
407	Grant permission for certain types of use and occupancy of Project lands and waters and to convey certain interests in Project lands and waters for certain types of use and occupancy, without prior FERC approval.				

A historic review of the Rollinsford Project's compliance deviations from 2010 through the date of this report indicated one recent deviation.

 On October 7, 2022, GMP filed a notice of deviation that occurred on September 25 and September 27, 2022. The deviations occurred because the impoundment elevation was inadvertently drawn down to 70.8 feet on September 27, and to 70.5 feet on September 25. In both cases, FERC determined that the deviations would not be considered a violation of license conditions.

VI. PUBLIC COMMENTS RECEIVED OR SOLICITED BY LIHI

The LIHI application was publicly noticed on January 4, 2023 and notice of the application was forwarded to resource agency and stakeholder representatives listed in the application.

On January 12, 2023, the Maine Council of Trout Unlimited (TU) submitted a comment letter. TU noted that GMP (as of the date of TU's letter) had not yet submitted a response to FERC's additional information request (AIR) on the Operational Compliance Monitoring Plan (OCMP), see Section VII.A below. The Reviewer finds these claims are no longer relevant as FERC's November 28, 2022 issuance noted that GMP had 60 days to respond to the AIR. GMP responded to FERC's AIR on January 27, 2023 with submittal of the revised OCMP. On February 9, 2023, FERC approved the OCMP.

The Reviewer did not solicit additional comments from resource agencies since GMP is still in the process of fulfilling the requirements of the new license, and resource agencies were actively engaged during the recent relicensing.

No other public comments were received by LIHI during the 60-day comment period which ended on March 5, 2023.

VII. ZONES OF EFFECT

The Applicant delineated the Project into three Zones of Effect (ZoEs) which are the Impoundment, Bypass Reach and Downstream Reach (Figure 4):

- ZoE 1 starts at the most upstream point of the FERC Project Boundary (RM 3.0) on the Salmon Falls River in the Project impoundment and ends at the Project dam (RM 0.9). The approximate length of the 84-acre impoundment is 2.1 RM. The normal pond elevation of 71.25 feet msl NGVD 29.
- The Project dam discharges to the Salmon Falls River, designated as ZoE 2 Bypass Reach. The Project bypass reach is approximately 0.1 RM in length.
- The Project bypass reach and powerhouse discharge to the Salmon Falls River in the reach designated as ZoE 3 Downstream reach. This ZoE extends downstream of the Project powerhouse approximately 0.15 RM to where Driscoll Brook enters the Salmon Falls River, near the top of the South Berwick Project impoundment.

GMP selected the standards shown in Table 1 below. The Reviewer agrees with these selections.



Figure 4 Rollinsford Zones of Effect

		Impoundment	Bypass Reach	Downstream
CRITERION		RM 3.0 to 0.9	RM 0.9 to 0.89	RM 0.89 to 0.875
		Standard Selected		
А	Ecological Flow Regimes	2	2	2
В	Water Quality	2	2	2
С	Upstream Fish Passage	1	2	2
D	Downstream Fish Passage	2	2	1
Е	Watershed and Shoreline Protection	1	1	1
F	Threatened and Endangered Species	3	3	3
G	Cultural and Historic	2	2	2
Н	Recreational Resources	1	1	1

Table 1 Rollinsford Project Standards Matrix

VIII. DETAILED CRITERIA REVIEW

A: Ecological Flow Regimes

Goal: The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.

Assessment of Criterion: GMP selected Standard A-2, Agency Recommendation for all three ZoEs. Impoundments can typically qualify for A-1 since this criterion is focused primarily on riverine reaches; however, since GMP is required to maintain specific reservoir elevations, Standard A-2 is more appropriate.

Discussion (Impoundment and Downstream): The Salmon Falls River at the Project has a drainage area of 232 square miles. The dam creates an approximately 84-acre impoundment with a maximum depth of 12 feet. Average monthly flows at the Project, from 1968 to 2005 and 2011 through 2018, ranged from a low of 138 cfs in August to a high of 914 cfs in April, with an average annual flow of 407 cfs (FERC 2021). The river reach below the Rollinsford Project contains only one other dam (South Berwick dam). Downstream of South Berwick the Salmon Falls River is tidally influenced.

As noted above, GMP operates the Rollinsford Project such that inflows approximately equal outflows. The pond level sensor ensures that the impoundment is maintained at the flashboard crest elevation of 71.25 feet msl NGVD 29. The license requires GMP to release a minimum bypass flow of 35 cfs or inflow if less through a notch in the flashboards at the Project dam. Once the upstream anadromous fish passage facilities are installed at the Project, a minimum bypass flow of 35 cfs or inflow if less is required from July 16 through April 14 from the downstream fish passage facility and 60 cfs is required from April 15

through July 15 from a combination of the downstream fish passage facility and upstream fish passage facility at the dam (FERC 2022).

Flows in the Salmon Falls River equal or exceed the maximum hydraulic capacity of the Project approximately 30 percent of the time on an annual basis, based on the prorated gage flows at <u>USGS gage #01072100</u> near Milton, New Hampshire.³ Similarly, the minimum hydraulic capacity is equaled or exceeded approximately 85 percent of the time on an annual basis. Generation flows are discharged to the mainstem of the Salmon Falls River at the end of the 680-foot-long bypassed reach (FERC 2021).

To achieve compliance with the run-of-river operational requirements a Programmable Logic Controller (PLC) is utilized to accept various operational inputs and to direct operational outputs. The primary purpose of the PLC is to control headpond water level as river flows vary by modulating the turbine gate setting. A pressure transducer is utilized in the impoundment to determine the water level and transmit the information to the PLC for appropriate action. On-site computers enable electronic data collection and storage and reporting for monitoring purposes.

The Project's run-of-river operation provides a stable impoundment level and a natural flow regime below the Project to protect aquatic and riparian habitats.

Several conditions of the NHDES and MDEP WQCs related to flows were incorporated into the new license, and are outlined below (FERC 2022):

- Condition E-10a of the NHDES WQC and Condition 1A of the MDEP WQC requires that the Project be operated in a run-of-river mode, such that outflow from the Project approximates inflow. A pond level sensor is installed near the Project intake to monitor and ensure the Project impoundment is maintained at the flashboard crest elevation of 71.25 feet msl, and to regulate turbine operation.
- Condition E-10d of the NHDES WQC requires that after drawdown of the Project impoundment for maintenance or emergencies, GMP release 90 percent of the inflow downstream to the Salmon Falls River and utilize the remaining 10 percent of inflow to refill the impoundment.
- Condition E-10e of the NHDES WQC requires that when drawing the water level in the impoundment down for scheduled maintenance, GMP lower the impoundment water level no more than six inches per day.
- Condition E-12 of the NHDES WQC and Condition 1B of the MDEP WQC required the development of an Operations Compliance Monitoring Plan to ensure compliance with impoundment level and bypass flow requirements, as well as reporting of Project operational parameters (i.e., generation, turbine flow, etc.). Pursuant to Article 401 of the new license, GMP filed the required OCMP on November 21, 2022 and a revision on January 27, 2023 in response to a November 28, 2022 FERC additional information request. FERC approved the plan on February 9, 2023.

Although there are no formal agreements with other facilities to regulate inflows and outflows from the Project, GMP is the owner and operator of the next upstream and downstream facilities, which allows for coordination of flows (if necessary). All three of these projects are FERC licensed and operate in run-of-river mode.

³ There are no stream gages downstream of the Project.

As noted above, on October 7, 2022, GMP filed a notice of deviation that occurred on September 25 and September 27, 2022. The deviations occurred because the impoundment elevation was inadvertently drawn down to 70.8 feet on September 27, and 70.5 feet on September 25. In both cases, FERC determined that the deviations would not be considered a violation of license conditions.

Discussion (Bypass Reach): As noted above, the Project must maintain a minimum bypass flow of 35 cfs or inflow if less through a notch in the flashboards at the Project dam. Once the upstream anadromous fish passage facilities are installed at the Project, a minimum bypass flow of 35 cfs or inflow if less is required from July 16 through April 14 from the downstream fish passage facility and 60 cfs is required from April 15 through July 15 from a combination of the downstream fish passage facility and upstream fish passage facility at the dam (FERC 2022).

Minimum bypass flow requirements at the Project are based upon a 2018 IFIM study conducted by GMP during relicensing to evaluate the relationship between aquatic habitat and flow within the bypass reach. The study found that the total wetted area available in the bypassed reach does not change significantly from the pre-existing 10-cfs minimum flow to 35 cfs (the Applicant recommended flow), or even to the agency recommended flows of 60 and 82 cfs. All would provide 89 percent of the bank-full wetted width in the bypassed reach. While maximum weighted usable area (WUA) increases with increased flow, water velocity barriers and depth restrictions in the lower bypassed reach greatly restrict alosine passage to the upper bypassed reach even under higher flows.

Several conditions of the NHDES and MDEP WQCs were incorporated into the new license, and are outlined below:

- Condition E-12 of the NHDES WQC and Condition 1B of the MDEP WQC required the development of an Operations Compliance Monitoring Plan to ensure compliance with impoundment level and bypass flow requirements, as well as reporting of Project operational parameters (i.e., generation, turbine flow, etc.). Pursuant to Article 401 of the new license, GMP filed the required OCMP on November 21, 2022. FERC issued a November 28, 2022 letter requesting additional information and that GMP had 60 days to respond. GMP responded on January 27, 2023 with submittal of the final OCMP⁴. On February 9, 2023, FERC approved the OCMP.
- Condition E-10b of NHDES WQC and Condition 2A of MDEP WQC require the following:
 - When the Project is generating power from July 16 through April 14, a continuous conservation flow of at least 35 cfs or inflow, whichever is less, shall be released to the bypass reach.
 - When the Project is generating power from April 15 through July 15, prior to implementation of volitional upstream alosine passage at the Project, a continuous conservation flow of at least 35 cfs or inflow, whichever is less, shall be released to the bypass reach.
 - When the Project is generating power from April 15 through July 15, after implementation of volitional upstream alosine passage at the Project, the bypass reach flow and the manner it is released to the bypass reach, will be determined by

⁴ <u>https://elibrary.ferc.gov/eLibrary/filedownload?fileid=AC59838C-EC81-CA10-9E19-85F457F00000</u>

the US Fish and Wildlife Service (USFWS) in accordance with their fish passage design guidelines, and after consultation with the NHDES, New Hampshire Fish and Game Department (NHFGD), MDEP, Maine Department of Marine Resources (MDMR) and Maine Department of Inland Fisheries and Wildlife (MDIFW).

• When the Project is not operating, 100 percent of inflow will be passed over the spillway and into the bypass reach.

GMP also notes that the bypass minimum flow requirements protect water quality and aquatic habitat, and also provide for zone of passage for migratory fish species.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project is in compliance with flow requirements and operates to protect aquatic habitat, and therefore satisfies the ecological flow regimes criterion.

B: Water Quality

Goal: Water Quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

Assessment of Criterion: The Applicant selected Standard B-2, Agency Recommendation for all ZoEs. Standard B-2 is appropriate as the facility is in compliance with all water quality conditions contained in the two WQCs for all ZoEs.

Discussion: The Salmon Falls River forms the boundary between the states of New Hampshire and Maine, but the Project tailrace and intake are on the New Hampshire bank of the river. Both New Hampshire and Maine have regulatory authority over water quality in the Salmon Falls River. Thus, the NHDES and MDEP are both responsible for issuing WQCs for the Rollinsford Project (FERC 2022).

The Salmon Falls River at the site of the Rollinsford Project is classified as Class B in New Hampshire⁵ and Class C in Maine⁶ (FERC 2021). As noted in FERC's Environmental Assessment (EA), the "section of the river in which the [Rollinsford Project] is located is listed on the Clean Water Act (CWA)section 303(d) list of impaired waters for pH, with the source unknown (New Hampshire DES, 2017)" (2021). In Maine, the "section of river in which the [Rollinsford Project] is located is listed on the CWA section 303(d) list of impaired waters (Maine DEP, 2016) for the following impairments: Escherichia coli, ammonia, eutrophication, dissolved oxygen (DO), phosphorus, and biochemical oxygen demand" (FERC 2021). A review of the 2022 state lists indicates that Maine no longer lists the Project area for phosphorus. However, Maine lists additional impairments for dioxins and PCBs. Both states list the Project reaches for mercury in fish tissue and New Hampshire also lists the impoundment as impaired for non-native aquatic plants and the downstream reach for low DO saturation. FERC also noted that there are eight permitted National Pollutant Discharge

⁵ In New Hampshire, Class B water bodies are considered acceptable for fishing, swimming, and other recreational purposes, and after treatment, are potential water supplies.

⁶ In Maine, Class C water must ensure suitability for designated uses of drinking water, fishing, agriculture, recreation, industrial processes, cooling water, hydroelectric power generation, navigation, and habitat for fish and other aquatic life.

Elimination System (NPDES) discharge points in the vicinity of the Project, four of which are from municipal wastewater treatment plants (USEPA, 2018). The Town of Rollinsford's wastewater treatment facility is located less than a quarter mile downstream of the Project powerhouse.

As part of relicensing, GMP conducted a water quality study from June through October in 2018. to determine if the Project: (1) is impacting water quality in the Salmon Falls River upstream and downstream of the Project; and (2) follows New Hampshire and Maine's surface water guality standards (FERC 2021). The monitoring showed that the impoundment exhibited low dissolved oxygen levels, below state standards during low flow periods. Low dissolved oxygen levels were attributed to the stratification that occurs in the impoundment during low flow in the summer months. To improve water quality in the Rollinsford Project impoundment during low flow. GMP submitted a draft Water Ouality Mitigation Plan to NHDES and MDEP. The final WOMP was filed with FERC on November 21, 20227, and approved by FERC on January 6, 2023. The plan requires dissolved oxygen and temperature monitoring at five locations in the impoundment during the low flow seasons in 2023 and 2024. The 2024 monitoring report will include a feasibility assessment of potential alternatives that could be implemented to address any violations of dissolved oxygen standards, if found, in the Project impoundment. The alternatives examined will include such things as temporary impoundment drawdowns, flow augmentation from upstream reservoirs, and aeration methods. The report will also consider the potential effects on downstream water quality for each alternative.

Several conditions of the NHDES and MDEP WQCs related to water quality were incorporated into the new license, and are outlined below:

- Condition E-14 of the NHDES WQC and Condition 5A of the MDEP WQC required GMP to consult with NHDES and MDEP regarding finalization of the WQMP within 60 days of license issuance. Article 401 of the new license required GMP to file the final plan with FERC for approval by September 22, 2022 (as noted above, this has already been approved by FERC).
- Condition 5B of the MDEP WQC requires that GMP monitor dissolved oxygen in the Project impoundment during low flows in the summer months for two years following license issuance. If the monitoring shows that dissolved oxygen levels fall below state standards, then the WQMP will be implemented in the third year after license issuance.
- Condition E-15 of the NHDES WQC also requires long term water quality monitoring and reporting every five years beginning the fifth year after license issuance and ending five years prior to the expiration of the new license. The purpose of the monitoring is to 1) determine the future effects of Project operation during the duration of the new license, on water temperature and dissolved oxygen, 2) compare results to water quality standards, and 3) determine if additional changes in Project operation are necessary to comply with surface water quality standards. Should monitoring indicate that water quality standard exceedances exist, GMP will consult with NHDES regarding changes to Project operations to improve water quality, and then implement the NHDES approved revisions to Project operations.

Based on the application, supporting documentation, and review of FERC eLibrary documents, this review finds that the Project is in compliance with water quality requirements and recommendations, and does not appear to adversely impact water quality

⁷ https://elibrary.ferc.gov/eLibrary/filedownload?fileid=42D86EDE-0E9A-CF03-91C6-849B27400000

since low DO in the impoundment is typically due to normal thermal stratification. Therefore, the Project satisfies the water quality criterion, with the recommended condition regarding the upcoming water quality monitoring.

C: Upstream Fish Passage

Goal: The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the facility.

Assessment of Criterion: The Applicant selected Standard C-1, Not Applicable/De Minimis Effect for the Impoundment ZoE and Standard C-2, Agency Recommendation for the Bypass Reach and Downstream ZoE. Standard C-1 is appropriate for the Impoundment ZoE since once fish pass the dam there is no further Project-related barrier to continued migration.

Discussion (Downstream and Bypass Reach): As outlined in GMP's LIHI application, diadromous fish historically present in the Project tailwater include American shad (*Alosa sapidissima*), American eel (*Anguilla rostrate*), as well as blueback herring (*Alosa aestivalis*) and alewife (*Alosa pseudoharengus*) (hereafter collectively referred to as river herring). Atlantic salmon (*Salmo salar*) runs were heavily impacted such that by 1750 (prior to the dam's construction), these runs were sufficiently disrupted by older upstream dams, overfishing, and sawdust pollution that salmon no longer returned to the Salmon Falls River for spawning. American shad (*Alosa sapidissima*) are present in very small numbers downstream of the South Berwick Project; however, no shad have been recorded using the upstream fishway at the South Berwick Project, which was installed in 2011, and no entity has reported observing shad in the Salmon Falls River between the South Berwick dam and the Rollinsford dam.

The low shad population is similar in other NH coastal rivers where for instance, monitoring at the Cocheco Falls dam has documented a total of 198 American shad from 1983 to 2019, an average of less than 6 per year, with a maximum of 24 in 1992, and similar small numbers of shad observed at the other monitored NH coastal rivers.^{8, 9, 10} NHFGD also notes "with the lack of concerted restoration efforts, only American Shad remnant runs remain in NH coastal rivers. In 2019, no American Shad returned to NH coastal rivers." (footnote 8, see Table 1.1-8).

However, approximately 72,041 and 41,209 river herring passed upstream using the fish passage facilities at the South Berwick Project in 2021 and 2022, respectively (data proved by NHFGD to LIHI).

Article 401 of the new license requires GMP to comply with all terms, conditions, prescriptions, and requirements of resource agency recommendations that were

⁸ <u>https://www.stateofourestuaries.org/wp-content/uploads/2018/06/Diadromous-Fish-</u> <u>Investigations-2016</u> -Anadromous-Alosid-Restorati.pdf

⁹ <u>https://www.stateofourestuaries.org/wp-content/uploads/2017/12/migratory-fish.pdf</u>

¹⁰ <u>https://www.wildlife.state.nh.us/marine/documents/rvr-herring-am-shad.pdf</u>

incorporated into the new license. The US Department of Interior (Interior) issued its Modified Prescription for Fishway Prescriptions pursuant to Section 18 of the Federal Power Act on January 31, 2022 (Appendix C of the license). The Interior's fishway prescriptions were modified as a result of a Settlement Agreement between the Town of Rollinsford, GMP, and the USFWS executed in January 2021, which was filed on the FERC eLibrary on February 22, 2022, and resubmitted March 5, 2022.¹¹ Regarding upstream anadromous fish passage, the Prescription requires the following measures be implemented during the term of the new license.

- Construct, operate, and maintain upstream fish passage facilities that pass anadromous fish species in a safe, timely and effective manner. Based on the best scientific information available at this time, one of the following types of fishway could satisfy the standard of safe, timely, and effective: (a) two technical fishways (one fishway at the dam and one fishway through the lower section of the bypass reach); or (b) one technical fishway at the dam and one nature-like fishway (NLF) through the lower section of the bypass reach. The NLF should modify the existing chute in the bypass reach to provide a suitable zone of passage for adult alosines over the emergent bedrock adjacent to the powerhouse.
- The above fishways will be operational by March 15 of the fourth passage season after license issuance, unless interim trap and transport fish passage (described below) is implemented instead.

Per the settlement agreement, GMP can alternatively request from FERC within two years of license issuance (by June 2024), approval to construct interim trap and truck facilities to transport fish from the South Berwick Project upstream of the Rollinsford dam. If FERC does not approve the request, the Town proposed to construct the Denil fishway and excavate the lower bypassed reach prior to the fourth passage season after the denial. If GMP receives authorization to install the trap and truck facility, but later discontinues its operation during the term of the new license, the Town would still install the fishway and excavate the lower bypassed reach within four years after the cessation of the trap and truck operation.

The trap and truck facility would be designed to have the capacity to accommodate the anticipated alosine population for the Rollinsford impoundment, move fish within 24 hours of reaching the facilities to the extent practicable, and pass fish volitionally into the South Berwick Project impoundment when trapping operations for the trap and transport program are not in progress. If implemented, the trap and truck program would begin in the third year after the new license was issued. The trap and truck program contemplates stocking alosines into the Rollinsford Project, and the upstream Lower Great Falls Project (FERC Project No. 4451), and Somersworth Project (FERC Project No. 3820) impoundments that will increase the abundance and sustainability of migratory fish species in the river system by providing increased access to spawning and rearing habitat.

Thus, upstream passage will be implemented no later than the fourth year of the license whether via the onsite passage facilities (by 2026) or the trap and truck facility (by 2025).

¹¹ <u>https://elibrary.ferc.gov/eLibrary/filedownload?fileid=020C1085-66E2-5005-8110-C31FAFC91712</u>

For upstream American eel passage, the Prescription requires the following measures be implemented during the term of the new license:

- Construct, operate, and maintain upstream fish passage facilities that provide safe, timely, and effective upstream passage for American eels.
- To determine proper siting of the permanent upstream eelway(s), conduct an American eel ramp siting study in the 4th year after the issuance of the new license.
- Based on the results of the siting study construct permanent eel ladder(s) to be operational no later than May 1 within 5 years of the effective date of the new license or the second passage season after the completing the siting survey, whichever is later.

The Prescription also requires development of a Fishway Effectiveness Monitoring Plan (FEMP) in consultation with and approved by the USFWS. The FEMP will contain plans for ensuring the effectiveness of the upstream anadromous and eel passage measures required by the Prescription. Effectiveness testing measures will commence the first migratory season after the upstream fishway(s) is operational and continue for a minimum of two fish passage seasons.

GMP must also develop a Fishway Operation and Maintenance Plan (FOMP) within one year of issuance of the new license to cover operations and maintenance of the upstream fish passage facilities. GMP will meet annually, in the late fall, with resource agencies to report on a) the occurrence of fish passage maintenance and operations, b) monitoring results, and c) review the operating plan.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that GMP is in compliance with the agency recommendation for upstream passage at the Rollinsford Project, although many elements of the upstream fish passage standard have yet to be developed and implemented by GMP. To date, the Project satisfies the upstream passage criterion with the recommended condition regarding future activities.

D: Downstream Fish Passage

Goal: The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by Facility operations. Migratory species can successfully complete their life cycles and to maintain healthy populations in the areas affected by the Facility.

Assessment of Criterion: The Applicant selected Standard D-2 for the Impoundment ZoE and Bypass Reach ZoE and Standard D-1, Not Applicable / De Minimis Effect for the Downstream ZoE which is appropriate since once below the Rollinsford Project there is no further Project-induced impediment to downstream movement.

Discussion (Impoundment and Bypass Reach): As outlined in GMP's LIHI application, the Salmon Falls River is known to support a variety of resident fish, including yellow perch, largemouth bass, bluegill, golden shiner, brown bullhead, and redfin pickerel. Additionally, the habitat can support fluvial-dependent fish such as white sucker and fallfish. There are

several non-native species at the Project, including several species of bass that were introduced via stocking programs.

American eel, American shad and river herring are present downstream of the Rollinsford Project but currently do not have access to the Salmon Falls River upstream of the Project. Under the recently issued FERC license, upstream passage will be provided at the Project, as prescribed by DOI and discussed above. Therefore, downstream fish passage facilities are necessary to provide safe downstream passage for migratory fish as they emigrate through the Project on their way back out to sea.

According to FERC's EA, the Salmon Falls River, in the vicinity of the Rollinsford Project, is known to support a variety of fish species, including macrohabitat generalists such as yellow perch, largemouth bass, bluegill, golden shiner, brown bullhead, and redfin pickerel; and fluvial-dependent fish such as white sucker and fallfish. Several non-native species are present at the project, including black crappie, bluegill, and several species of bass that were introduced to the Salmon Falls River via stocking (2021).

FERC's EA noted that to protect eels during downstream passage, GMP must implement nighttime turbine shutdowns from 8:00 pm to 4:00 am from September 1 through October 31, for three consecutive nights following rain accumulation of 0.5 inch or more over a 24-hour period, within four years of the effective date of the new license (FERC 2021).

Several conditions of the NHDES and MDEP WQCs were incorporated into the new license, and are outlined below:

- Within 3 years of license issuance, construct, operate, and maintain a downstream passage and protection system that provides safe, timely, and effective downstream passage for both spent adult and juvenile anadromous fish.
- Develop a plan to provide permanent downstream alosine passage and protection, including the design of permanent downstream passage facilities, developed in consultation with, and approved by, the USFWS.

For downstream American eel passage, the Prescription requires the following measures be implemented during the term of the new license.

- Develop a plan to provide permanent downstream eel passage and protection including the design of permanent eel passage facilities and/or operational measures, to be developed in consultation with, and approved by the USFWS.
- Within 3 years of license issuance, construct, operate, and maintain a downstream eel passage and protection system that provides safe, timely, and effective downstream passage for American eels.
- Upon license issuance, implement, as an interim measure, targeted nighttime turbine shutdowns to protect emigrating eels. Turbine shutdowns will occur from dusk to dawn for three consecutive nights following rain accumulations of 0.50 inch or more over a 24-hour period. Turbine shutdowns will occur during the duration of the downstream eel passage season (August 15-November 15).

GMP has committed to install and operate a downstream eel passage facility within four years of the effective date of the new license pursuant to Article 404, and to develop the

associated management plans listed in Article 401 of the new license. As well, MDEP's WQC conditions 4A and 4B require GMP to construct and operate downstream eel and anadromous fish passage facilities in consultation with the USFWS, MDMR, NHFGD and other fish resource agencies; and "employ appropriate operational measures for the safe, timely and effective downstream passage" of American eel and anadromous fish. MDEP requires that the facilities be constructed and operated in accordance with schedules established by FERC and measures prescribed by DOI. NHDES's condition E-13 requires GMP to comply with DOI's prescription. MDMR, NHFGD, and TU supported DOI's Prescription.

Article 404 requires GMP to file within one year of license issuance, for FERC approval, a downstream fish passage plan that provides for the installation of passage facilities at the Project for downstream migrating anadromous fish species and American eels. The downstream fish passage facilities must consist of:

- (1) a full-depth diversionary guidance boom placed upstream of the headgates;
- (2) a 3-foot-wide surface weir at the dam that has a hydraulic capacity of 35 cfs and provides a water depth of 2 feet; and
- (3) a 4-foot-deep plunge pool located downstream of the dam. The downstream fish passage facilities must be operational by June 1 of the third year after license issuance (2025).

The Prescription also requires development of a FEMP in consultation with and approved by the USFWS. The FEMP will contain plans for ensuring:

- (1) the effectiveness of the downstream anadromous and downstream eel passage measures required by the Prescription; and
- (2) that the minimum bypass flow of 35 cfs provides safe, timely, and effective downstream passage to emigrating diadromous species (i.e., does not strand fish). Effectiveness testing measures will commence the first migratory season after the downstream fishway(s) is operational and continue for a minimum of two (2) fish passage seasons.

The Prescription also requires GMP to develop the FOMP mentioned above within one year of license issuance to cover operations and maintenance of the downstream fish passage facilities.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project is in compliance with agency recommendations for downstream passage and therefore satisfies the downstream fish passage criterion with the recommended condition regarding future activities.

E: Shoreline and Watershed Protection

Goal: The facility has demonstrated that sufficient action has been taken to protect, mitigate or enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.

Assessment of Criterion: The Applicant selected Standard E-1, Not Applicable/ De Minimis Effect for all ZoEs.

Discussion: The Rollinsford Dam creates an impoundment that has a gross volume of 456 acre-feet, with a surface area of approximately 84 acres at the normal pond elevation of

71.25 feet msl NGVD29 (with 15-inch-high flashboards). The maximum water depth in the impoundment is approximately 12 feet. The shoreline length within the Project boundary is approximately 2.4 miles, encompassing both banks of the Salmon Falls River above the dam along the impoundment. There are also several small, vegetated islands in the impoundment as well. Bottom substrate in the littoral zone is primarily sand, silt, and mud. Emergent aquatic vegetation and submergent aquatic vegetation beds are also common within the impoundment.

According to USFWS's National Wetlands Inventory system, approximately 15 acres of wetland habitat occur within the Rollinsford Project boundary, including 8 acres of emergent wetlands, 6.5 acres of scrub-shrub/forested wetlands, and a 0.5-acre freshwater pond. The emergent wetlands are small islands located within the impoundment, while the scrub-shrub/forested wetlands and the freshwater pond are scattered along the shoreline of the impoundment (FERC 2021).

Land use adjacent to and within the Project boundary is primarily developed, forested, or farmland. Upstream of the dam, land in New Hampshire is forested, some of which abuts conserved forest on the Scoutland property. The Scoutland property is owned by the Town of Rollinsford and encompasses some 87.8 acres for watershed protection, wildlife habitat, and recreational opportunities. In Maine upstream of the dam, the banks are vegetated but give way to farmland, both cultivated crops and pasture lands.

There is no Shoreline Management Plan required or in place to manage the impoundment for piers, boat docks, or other shoreline facilities at the Rollinsford Project. In addition, GMP does not maintain a buffer zone around the Project impoundment. None of these provisions were prescribed in the new license.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project with its run-of-river operation and stable impoundment elevation, has little to no impact on the shoreline and therefore satisfies the shoreland and watershed protection criterion.

F: Threatened and Endangered Species

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

Assessment of Criterion Passage: The Applicant selected Standard F-2, Finding of No Negative Effects for all ZoEs. Based on this review, Standard F-2 is appropriate.

Discussion: The USFWS Information for Planning and Consultation (IPaC) database was accessed to determine federally-listed species that could occur in the Project vicinity. An updated IPaC review was conducted on February 25, 2023. Findings indicate that the candidate species monarch butterfly (*Danaus plexippus*) and the federally endangered Northern long-eared bat (NLEB) could occur in the Project vicinity. No critical habitats were identified for these species in the Project vicinity.

The monarch butterfly is a candidate species and not yet listed or proposed for listing. Monarch butterflies are considered imperiled wherever they are found.

NLEBs are vulnerable to white-nose syndrome, which is the predominant threat to this bat species. The Project is located within the white-nose syndrome buffer zone for this species. There is no documentation of NLEB at the Project, and no known NLEB hibernacula sites occur within 0.25 mile of the Project.

• Article 405 of the new license restricts the removal of trees with diameters that are equal to or greater than 3 inches at breast height from April 1 through October 1, to reduce the likelihood of disturbing NLEB and their newly born pups during the broader, active season of NLEB at the Project. Article 405 is based on the January 2016 USFWS 4(d) rule for this species.

Historically, Atlantic salmon (*Salmo salar*) migrated up the Salmon Falls River, however by the time the Rollinsford and South Berwick dams were constructed, overfishing, pollution, and dams led to severe enough disruption in migration that the salmon no longer return to the Salmon Falls River for spawning. Regardless, NOAA Fisheries maintains Atlantic salmon as a protected fish, with a Distinct Population Segment (DPS) in the Gulf of Maine. In 2019, NOAA Fisheries filed an updated Recovery Plan for the Gulf of Maine DPS of Atlantic Salmon. Currently, the intent of the plan is to attempt recovery "when conditions have been attained that" would allow for "self-sustaining populations to persist under minimal ongoing management and investment of resources" (NOAA Fisheries 2019).¹² Being as the Rollinsford Project is the second upstream barrier to Atlantic salmon migration on the Salmon Falls River, it is prudent to include discussion on this species, although to date, NOAA has not targeted the river for restoration.

Although not on the Salmon Falls River, federally endangered Shortnose sturgeon (*Acipenser brevirostrum*) is found in the Piscataqua River downstream of the South Berwick Project (which is downstream of the Rollinsford Project). There is no critical habitat in the South Berwick or Rollinsford Project areas.

NHFGD identified two state-listed endangered species that could occur in the Rollinsford Project area: Blanding's turtle (*Emydoidea blandingii*) and New England cottontail (*Sylvilagus transitionalis*). FERC's EA determined that the Rollinsford Project does not appear to be adversely affecting these species or their habitats as currently licensed, and no activities that would be expected to adversely affect these species have been proposed.

Existing vegetation management activities at the Rollinsford Project include mowing, which occurs approximately every week, in grassed areas adjacent to the powerhouse, along the above-ground portion of the penstock, and adjacent to the intake headworks during the months of May through September. Vegetation on the Rollinsford Project Dam embankments, as well as around the dam abutments and intake headworks structure are treated with herbicide (KleenUp®) once per year, during the spring or early summer. These areas are further maintained during the growing season (May through September) with a

¹² <u>https://www.fisheries.noaa.gov/resource/document/recovery-plan-2019-gulf-maine-distinct-population-segment-atlantic-salmon-salmo</u>

string trimmer and handheld cutters once a month. However, it is unlikely that these activities would impact the listed terrestrial species.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project is unlikely to affect listed species given run-of-river operations, limited footprint, and commitment to follow the 4(d) rule for NLEB should tree removal become necessary. Therefore, the Project satisfies the threatened and endangered species protection criterion.

G: Cultural and Historic Resources Protection

Goal: The Facility does not unnecessarily impact cultural or historic resources that are associated with the facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.

Assessment of Criterion: The Applicant selected Standard G-2 for all ZoEs. Based on this review, Standard G-2 is appropriate for this Project.

Discussion: GMP's LIHI application notes that the Project is partially located within the Salmon Falls Mill Historic District (District), which was listed on the National Register of Historic Places in 1980. The District is located on the New Hampshire side of the riverbank and includes four textile mill buildings and their contributing structures, including the Rollinsford Project powerhouse, dam, and intake headwork structure. The District buildings were constructed between 1840 and 1860, and are made from red brick, a typical example of a small northern New England textile manufacturing community. Presently, the four textile mill buildings are occupied by a guild of artists, and also used for office and commercial spaces (2022). The Boston and Maine Railroad Bridge and the Rollinsford Dam are contributing resources to the character of the District. The Boston and Maine Railroad Bridge that spans the Salmon Falls River just downstream of the Project dam, was constructed in 1888, as a lattice-deck, truss bridge with a cut-stone masonry sub-structure. The Project dam was constructed between 1909 and 1910, replacing the original 1843 wooden dam.

During relicensing, GMP conducted a Phase I archaeological survey within the Maine portion of the FERC Project Boundary. The purpose of the survey was to identify known preand post-contact archaeological resources, and to identify additional areas within the Maine portion of the Project boundary that are potentially sensitive for pre- and postcontact archaeological resources. The Phase I survey investigated one previously recorded archaeologically sensitive area and six additional archaeologically sensitive areas. However, the surveys concluded that no pre- or post-contact archaeological sites are present within the Maine portions of the Project boundary. No archaeological surveys were conducted within the New Hampshire portion of the Project boundary.

Article 406 of the FERC license and the terms of a Programmatic Agreement (PA) with the New Hampshire and Maine State Historic Preservation Offices (SHPOs) require GMP to develop and implement a Historic Properties Management Plan (HPMP) to ensure that measures are in place to protect Project historic properties from adverse effects related to

the operation and maintenance of Project facilities and potential adverse effects related to installation of eel and fish passage structures. An HPMP also ensures that any previously undiscovered archaeological resources are not adversely affected by the Project during the term of the FERC license. As part of the PA, GMP must file, for FERC approval, an HPMP within one year of issuance. If the PA is terminated prior to FERC approval of the HPMP, GMP must obtain approval from FERC and the New Hampshire and Maine SHPOs before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the Rollinsford Project's areas of potential effects.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project does not adversely impact cultural or historic resources and the Project satisfies the cultural and historic resources protection criterion.

H: Recreational Resources

Goal: The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.

Assessment of Criterion Passage: The Applicant selected Standard H-1, Not Applicable/De Minimis Effect for all ZoEs. Based on this review, Standard H-1 is appropriate.

Discussion: According to the FERC license and EA the Project has a relatively small footprint, and there are no licensed Project recreation facilities. However, the Town of Rollinsford owns, operates, and maintains several recreation facilities partially within and/or adjacent to the Project boundary. Due to the existing access provided by these facilities, FERC and the resource agencies did not recommend substantive additional measures to enhance recreational use and access at the Rollinsford Project during the recent FERC relicensing process, and no conditions were placed in the new license.

GMP's LIHI application notes that Bicentennial Park is located just upstream of the Rollinsford Project dam along the New Hampshire side of the impoundment providing a gazebo, benches, parking for a few vehicles, and a gravel and concrete boat ramp that provides access to the impoundment (see Figure 2 above). There is also an unmarked, primitive trail nearby, and downstream, the South Berwick Project has a boat launch at that Project's impoundment. There are other recreation sites adjacent to the Rollinsford Project including Malley Farm and The Mills at Salmon Falls. None of these facilities are associated with the Rollinsford Project.

GMP's application notes that the Scoutland property is located on the New Hampshire side of the Project impoundment approximately 0.75-mile upstream of the dam. The 88-acre property is open to the public for low impact recreational use, including several miles of walking and hiking trails. The 1.6-mile Scoutland Trail is a multi-use trail that parallels the Project impoundment and connects to Bicentennial Park. There are no restrictions to public access at the site; however, the access road to the property is gated to prevent unauthorized travel by large vehicles. There is no formal access to the impoundment from Scoutland. Condition 6a of the MDEP WQC requires GMP to consult with MDIFW within 6 months of the new license issuance regarding opportunities for improvements to access streamside angling opportunities, including additional signs and foot trails to the tailrace and bypass reach.

Based on the application, supporting documentation, and FERC eLibrary documents, this review finds that the Project is in compliance with its limited recreation requirements, and therefore satisfies the recreational resources criterion with the recommended condition.

IX. CERTIFICATION RECOMMENDATION

This review included evaluation of the application and additional information provided, a review of the FERC eLibrary, and review of other publicly available information. Based on this evaluation, the Reviewer recommends that the Rollinsford Project be certified for a term of ten (10) years. Since some requirements of the new FERC license have not yet been implemented, the following conditions are recommended.

Condition 1: In applicable annual compliance submittals to LIHI, the facility Owner shall provide a summary of water quality monitoring results from 2023 and 2024 including agency comments, and any proposed operational alternatives to ensure that water quality standards are met including agency consultation and, if needed, a plan and schedule for implementation of the selected alternative.

Condition 2: In annual compliance submittals to LIHI, the facility Owner shall provide updates on the status of upstream and downstream fish passage activities including construction of interim and permanent fishways or alternative prescriptions, results of studies and monitoring and agency comments on them, and any related agency consultation until all passage measures are implemented and deemed sufficient by the resource agencies.

Condition 3: In annual compliance submittals to LIHI, the facility Owner shall report on consultation with MDIFW regarding opportunities for improvements to access streamside angling opportunities with a plan and schedule for implementation, if improvements are needed. If no improvements are required, this result shall be reported with documentation of agreement by MDIFW.

APPENDIX A – TROUT UNLIMITED COMMENT LETTER

January 12, 2023

Ms. Shannon Ames, Executive Director Low Impact Hydropower Institute 329 Massachusetts Avenue, Suite 2 Lexington, MA 02420



Transmitted via e-mail to comments@lowimpacthydro.org

Subject: Comments on Application for LIHI Certification for the Rollinsford Project

Dear Ms. Ames:

On behalf of its six chapters and over 2,000 members, Maine Council of Trout Unlimited (TU) submits these comments on the Green Mountain Power (GMP) Application for LIHI Certification for the Rollinsford Project dated September 20, 2022. The project is located on the Salmon Falls River that forms the boundary between Maine and New Hampshire. TU members fish in and otherwise enjoy the use of the watershed. LIHI received the application on January 4, 2023 indicating that the applicant had delayed its submission. We think that GMP should have continued to delay submission of its LIHI Application.

While recognizing that the Rollinsford Project well may meet LIHI certification requirements at some future date, there are still unresolved issued involving the project. GMP has not submitted the Operational Compliance Monitoring Plan that FERC requested¹ provided as Attachment A. This is linked to compliance with both Maine and New Hampshire Water Quality Certificates.² The LIHI certification process states regarding supporting information:

"The supporting information provided in an application should justify the standard selected for each criterion in each ZoE and include sufficient documentation to demonstrate exactly how the facility satisfies (beyond simply that it does satisfy) each criterion in each ZoE. Appendix B contains additional instructions, a recommended application outline, and tables for each criterion that list the types of information required for each alternative standard.

In all cases, the applicant must demonstrate that the facility is in compliance with or has taken action to regain compliance with, its current regulatory requirements related to the LIHI criteria contained in relevant FERC license or exemption articles, water quality certification conditions, resource agency terms and conditions, and other authorizations, permits, and enforceable agreements. **Any issues surrounding the**

¹ FERC Additional Information Request – Operation Compliance Monitoring Plan dated November 28, 2022.

² Id., page 1.

facility's compliance and current status of the issues should be discussed in the application with supporting documentation. "³ (bold provided for clarity)

This issue was not discussed in the application.

Accordingly, we ask that LIHI deny LIHI certification to the Rollinsford Project until this matter has been resolved to the satisfaction of FERC, Maine Department of Environmental Protection's (Maine DEP), and New Hampshire Department of Environmental Services' (New Hampshire DES).

Maine TU Council appreciates the opportunity to comment on this application.

Respectfully,

Stephen G. Heinz Maine TU Council FERC Coordinator

Reply to: heinz@maine.rr.com

Attachment:

A – FERC Additional Information Request – Operation Compliance Monitoring Plan dated November 28, 2022

³ LIHI Handbook 2nd Edition – Revision 2.05, 01/01/2022, page 23, 4.1.3 Supporting Information.

Attachment A

FEDERAL ENERGY REGULATORY COMMISSION Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 3777-016 – Maine and New Hampshire Rollinsford Hydroelectric Project The Town of Rollinsford, New Hampshire

November 28, 2022

VIA FERC Service

Mr. Jason L Lisai Director, Generation and Relay Green Mountain Power Corporation 163 Acorn Lane Colchester, VT 05446

Subject: Additional Information Request - Operation Compliance Monitoring Plan

Dear Mr. Lisai:

This letter is in response to the November 21, 2022 filing of an Operation Compliance Monitoring Plan (Plan) for the Rollinsford Hydroelectric Project No. 3777.¹ You filed the Plan pursuant to Article 401 of the license. Within 60 days from the date of this letter, please address the following comments to allow us to complete our review:

1. The Maine Department of Environmental Protection's (Maine DEP) and New Hampshire Department of Environmental Services' (New Hampshire DES) section 401 water quality certifications (certification)² specify how you must operate the project including maintaining a target impoundment elevation at the flashboard crest elevation of 71.25 feet National Geodetic Vertical Datum of 1929 (NGVD 1929). Section 5.1 of the Plan explains that the headwater level sensor operates continuously to measure water level in the impoundment

² Ordering paragraphs (E) of the license subjects the license to the conditions submitted by the Maine DEP and the New Hampshire DES under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), as those conditions are set forth in Appendices A and B to the license, respectively.

¹ *The Town of Rollinsford, New Hampshire*, 179 FERC ¶ 61,203 (2022).

to maintain a headpond elevation of 71.25 feet NGVD 1929 +/- 0.01 feet. However, the Plan does not specify the threshold for reporting deviations of this operating requirement. Please revise the Plan in the appropriate sections to include this information.

- 2. It is unclear from the Plan if you consulted consistent with Article 401 of the license. First, it does not appear that you provided the Plan to the National Marine Fisheries Service (NMFS). Second, the New Hampshire DES's November 15, 2022 email states "NHDES consulted with staff of the New Hampshire Fish and Game Department, U.S. Fish and Wildlife Service, and Maine Department of Environmental Protection. Those staff informed NHDES that they do not have concerns about GMP's responses." It is unclear the position of the Maine Department of Inland Fisheries and Wildlife, the Maine Department of Marine Resources, and the NMFS on the Plan and your responses to the New Hampshire DES's questions/comments on the Plan. Please follow the consultation requirements of Article 401 of the license when you revise the Plan.
- 3. The Plan identifies two annual reports. Article 401(b) requires you to file a Flow and Impoundment Management Report by May 31 of each year pursuant to New Hampshire DES condition E-11. Article 401(e) of the license requires you to file an annual report by January 31 of unplanned deviations lasting three hours or less that do not result in environment effects. It appears there may be overlap in these two annual reports. Please discuss this matter with the resource agencies. You may need to file an amendment application to revise one, or both, of the reporting deadlines based on the outcome of your discussion.

Please make the necessary revisions to address the matters in this letter and consult with the resource agencies pursuant to Article 401 of the license. After the resource agencies review and comment on the revisions, please address all comments and file the revised Plan in two forms:

a. A strikethrough format (i.e., strikethrough items to be removed and underline or bold items to be added to the Plan), and

b. A final, clean copy incorporating the changes (i.e., without the strikethrough, underline, and bold notations).

The Commission strongly encourages electronic filing. Please file the requested information using the Commission's eFiling system at <u>http://www.ferc.gov/docs-filing/efiling.asp</u>. For assistance, please contact FERC Online Support at <u>FERCOnlineSupport@ferc.gov</u>, (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, submissions sent via the U.S. Postal Service must be

addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing related to this proceeding should include docket number P-3777-016.

Thank you for your cooperation. If you have any questions regarding this letter, please contact me at (202) 502-6779 or <u>Jeremy.Jessup@ferc.gov</u>.

Sincerely,

Jeremy Jessup, PE Headwater Benefits Lead Engineering Resources Branch Division of Hydropower Administration and Compliance

CC: VIA FERC Service

John Tedesco Green Mountain Power Corporation 163 Acorn Lane Colchester, VT 05446