182 FERC ¶ 61,024
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
James P. Danly, Allison Clements,
and Mark C. Christie.

Green Mountain Power Corporation and City of Somersworth, New Hampshire — Project No. 4451-024

ORDER ISSUING SUBSEQUENT LICENSE

(Issued January 20, 2023)

INTRODUCTION

1. On April 30, 2020, Green Mountain Power Corporation and the City of Somersworth, New Hampshire (GMP and the City, respectively), filed, pursuant to Part I of the Federal Power Act (FPA),[1] an application for a subsequent license to continue operating and maintaining the 1.28-megawatt (MW) Lower Great Falls Hydroelectric Project No. 4451 (Lower Great Falls Project, or project). The project is located on the Salmon Falls River within the City of Somersworth, Strafford County, New Hampshire, and the Town of Berwick, York County, Maine.[2]

2. As discussed below, this order issues a subsequent license for the Lower Great Falls Project.

BACKGROUND

3. The Commission issued the original license for the project on April 22, 1982, with an effective date of May 1, 1982, and an expiration date of April 30, 2022.[3] Since the

[1] 16 U.S.C. §§ 791(a) – 825(r).

[2] Because the project is located on a navigable waterway of the United States, it is required to be licensed by section 23(b)(1) of the FPA. 16 U.S.C. § 817(1). *See Spaulding Fibre Co., Inc.*, 12 FERC ¶ 61,028 (1980) (finding the Salmon Falls River is a navigable waterway of the United States).

[3] *Somersworth Hydropower Assocs.*, 19 FERC ¶ 62,108 (1982). The license was transferred to Somersworth Hydropower Company and the City of Somersworth, New Hampshire, on September 1, 1987. *Somersworth Hydropower Assocs.*, 40 FERC

expiration date, GMP and the City have operated the project pursuant to section 16.21 of the Commission's regulations, pending the disposition of the application.[4]

4. On October 28, 2020, the Commission issued a public notice that was published in the *Federal Register*, accepting the application for filing, and setting December 27, 2020, as the deadline for filing motions to intervene and protests.[5] The Maine Department of Inland Fisheries and Wildlife (Maine DIFW) and U.S. Department of the Interior (Interior) filed timely notices of intervention on December 7, 2020, and December 15, 2020, respectively.[6] Neither of the intervenors opposes relicensing the project.

5. On February 10, 2021, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis, and setting April 11, 2021, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions.[7] Interior filed comments and recommendations on April 14, 2021, and a preliminary fishway prescription on April 16, 2021, pursuant to FPA section 18.[8]

6. On April 6, 2021, GMP, on behalf of itself and the City, filed a Settlement Agreement for Fishways (Settlement Agreement) entered into by GMP, the City, and

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¶ 62,274 (1987). The license was transferred to Green Mountain Power and the City of Somersworth, New Hampshire, on May 24, 2017. *Somersworth Hydropower Co., Inc.*, 159 FERC ¶ 62,204 (2017).

[4] 18 C.F.R. § 16.21 (2021). *See* May 11, 2022 Notice of Authorization for Continued Project Operation.

[5] 85 Fed. Reg. 70,143 (Nov. 4, 2020). The Commission's Rules of Practice and Procedure provide that if a filing deadline falls on a Saturday, Sunday, holiday, or other day when the Commission is closed for business, the filing deadline does not end until the close of business on the next business day. 18 C.F.R. § 385.2007(a)(2) (2021). Because the 60-day filing deadline fell on a Sunday (i.e., December 27, 2020), the filing deadline was extended until the close of business on Monday, December 28, 2020.

[6] Under Rule 214(a) of the Commission's Rules of Practice and Procedure, Maine DIFW and Interior each became a party to the proceeding upon the timely filing of the notices of intervention. 18 C.F.R. § 385.214(a) (2021).

[7] 86 Fed. Reg. 9924 (Feb. 17, 2021). Because the 60-day filing deadline fell on a Sunday (i.e., April 11, 2021), the filing deadline was extended until the close of business on Monday, April 12, 2021. 18 C.F.R. § 385.2007(a)(2) (2021).

[8] 16 U.S.C. § 811.

Interior. The Settlement Agreement reflects agreement concerning the terms of Interior's fishway prescription. On October 7, 2021, GMP, on behalf of itself and the City, filed a letter stating that the terms of the Settlement Agreement are their relicensing proposal for providing upstream fish passage at the project.

7. Commission staff issued an environmental assessment (EA) on July 7, 2022, analyzing the effects of the proposed project and alternatives to it, and setting a deadline for comments of August 21, 2022.[9] Interior filed comments on August 18, 2022, and GMP filed comments on August 22, 2022.

8. The interventions, comments, recommendations, and fishway prescription have been fully considered in determining whether, and under what conditions, to issue the license.

PROJECT DESCRIPTION

A. Project Area

9. The Lower Great Falls Project is located at river mile (RM) 7.4 of the Salmon Falls River. The Salmon Falls River runs for approximately 38 miles from the mouth of the Great East Lake to its confluence with the Cocheco River, where the two rivers join to form the Piscataqua River, which flows approximately 12.7 miles to the Gulf of Maine. The Salmon Falls River Basin has a drainage area of approximately 236 square miles.

10. There are 15 dams on the Salmon Falls River, seven of which are used for hydropower generation.[10] The non-powered dams are used for flood control, water supply, and recreation. Land in the project vicinity is forested and interspersed with commercial and residential use.

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[9] Because the 45-day filing deadline fell on a Sunday (i.e., August 21, 2022), the filing deadline was extended until the close of business on Monday, August 22, 2022. 18 C.F.R. § 385.2007(a)(2).

[10] Of the seven projects used for hydropower generation, four operate under FERC-issued licenses and the remaining three operate under FERC-issued small hydropower project exemptions. The four licensed hydroelectric projects are South Berwick Project No. 11163 (RM 3.9), Rollinsford Project No. 3777 (RM 5.0), Lower Great Falls Project No. 4451 (RM 7.4), and Somersworth Project No. 3820 (RM 8.8); the three hydroelectric exemption projects are Boston Felt Project No. 4542 (RM 19.8), North Rochester Project No. 3985 (RM 25.8), and South Milton Project No. 3984 (RM 28.1).

B. Project Facilities

11. The Lower Great Falls Project includes a 297-foot-long, 32-foot-high stone masonry and concrete dam (Lower Great Falls Dam) that consists of the following sections: (1) a 50-foot-long north abutment section with two eight-foot-wide, eight-foot-high -low-level outlet gates that control flow into two seven-foot-diameter, 40-foot-long outlet pipes;[11] (2) a 176-foot-long spillway section with a 5.25-foot-wide, four-foot-high debris sluice gate, four-foot-high flashboards, and a crest elevation of 106.4 feet National Geodetic Vertical Datum of 1929 (NGVD 29) at the top of the flashboards; and (3) a 71-foot-long south abutment section with a 40.5-foot-wide, 20-foot-high intake structure equipped with four five-foot-wide, 10.5-foot-high steel frame gates and a trashrack- with two-inch clear bar spacing. The dam creates an impoundment that has a surface area of 40.2 acres at an elevation of 106.4 feet NGVD 29.[12]

12. From the impoundment, water flows through the intake structure to: (1) an 8.5-foot-diameter, 120-foot-long steel penstock that bifurcates into a 5.3-foot-diameter, 85-foot-long section and a 7.6-foot-diameter, 85-foot-long section; and (2) an 8.5-foot-diameter, 140-foot-long steel penstock that bifurcates into a seven-foot-diameter, 85-foot-long section and a 7.6-foot-diameter, 85-foot-long section. The penstocks provide water to two 260-kilowatt (kW) F-type Francis turbine-generator units and two 380-kW F-type Francis turbine-generator units located in a 46-foot-long, 30-foot-wide concrete and brick masonry powerhouse, for a total installed capacity of 1.28 MW. Water is discharged from the turbines through draft tubes to a 55-foot-long, 30-foot-wide tailrace, where it returns to the Salmon Falls River. The project bypasses approximately 250 feet of the Salmon Falls River (bypassed reach).

13. Electricity generated at the powerhouse is transmitted via a 260-foot-long, 4.16-kilovolt (kV) underground transmission line to the local distribution grid approximately 200 feet southwest of the powerhouse.

14. There are no project recreation facilities. A more detailed description of the project facilities is contained in ordering paragraph (B)(2).

C. Project Boundary

15. The current project boundary encloses approximately 42.9 acres, including: (1) about 40.4 acres of land and water in and around the impoundment; (2) the

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[11] Water flows though the low-level outlet pipes into the remains of an old mill foundation before emptying into the Salmon Falls River.

[12] EA at 6.

250-foot-long bypassed reach; (3) 0.24 acre of land that is occupied by two apartment buildings and an associated parking lot;[13] (4) 0.56 acre of land associated with Olde Mill Road; (5) the access road to the powerhouse; and (6) land underlying the project facilities listed above.[14]

16. GMP and the City propose to modify the current project boundary along the impoundment to follow a contour elevation of 106.4 feet NGVD 29 (i.e., the flashboard crest elevation), which would result in removing approximately 0.2 acre of land that is above 106.4 feet NGVD 29. GMP and the City also propose to: (1) remove 0.9 acre of land adjacent to the project powerhouse;[15] (2) add 0.07 acre of land associated with the north abutment of the dam and the low-level outlet pipes; and (3) add a 120-foot-long, 10-foot-wide area associated with the transmission line. The proposed changes would decrease the area enclosed by the project boundary from 42.9 to 41.9 acres.

D. Current Project Operation

17. GMP and the City voluntarily operate the project in a run-of-river mode, such that, at any given point in time, outflow from the project approximates inflow, maintaining the project impoundment at the flashboard crest elevation of 106.4 feet NGVD 29. When the project is generating, water is diverted from the impoundment to the intake structure. From the intake structure, water flows through the penstocks to the turbines, where it is then discharged to the project tailrace and the Salmon Falls River. When not generating, water is passed over the project dam into the bypassed reach.

18. Article 23 of the current license requires GMP and the City to release a minimum flow of 6.05 cubic feet per second (cfs) or inflow to the impoundment, whichever is less, from the dam to the bypassed reach to protect aquatic resources in the Salmon Falls River. GMP and the City release the minimum flow to the bypassed reach through a

[13] The apartment buildings are owned and operated by Great Baxter Mills, LLC. One of the apartment buildings is adjacent to the south abutment of the dam and the other is located on the shoreline of the bypassed reach, approximately 25 feet downstream of the dam.

[14] The current project boundary includes 30-foot-long portion of the 50-foot-long north abutment, and a 140-foot-long portion of the 260-foot-long transmission line.

[15] GMP and the City do not describe the 0.9 acre of land in detail. Based on sheet 1 of the proposed Exhibit G in the application, the 0.9 acre includes: (1) 0.56 acre associated with Olde Mill Road; (2) 0.04 acre occupied by a non-project apartment building adjacent to the south abutment of the dam; (3) 0.2 acre associated with the access road to the powerhouse; and (4) 0.1 acre associated with the parking lot and land adjacent to the apartment buildings.

12-inch-diameter pipe and a 4 inch-diameter pipe at the base of the dam.[16] Direct flow measurements downstream of the dam indicate that the pipes release approximately 10.3 cfs when the impoundment is at 106.4 feet NGVD 29.[17]

19. The minimum and maximum hydraulic capacities of the powerhouse are 60 and 702 cfs, respectively. GMP and the City discharge all flow over the dam to the bypassed reach until inflow to the impoundment reaches 70.3 cfs (minimum hydraulic capacity of the project plus the flow release through the pipes at the base of the dam). When inflow is between 70.3 cfs and 712.3 cfs (maximum hydraulic capacity of the powerhouse plus the flow release through the pipes at the base of the dam), the licensees release a flow of 10.3 cfs to the bypassed reach and divert the remaining flow from the Salmon Falls River to the turbine-generator units to generate electricity. When inflow exceeds 712.3 cfs, GMP and the City operate the four turbine-generator units at their maximum hydraulic capacities, release a flow of 10.3 cfs from the pipes at the base of the dam, and release the remaining flow over the dam. When inflow exceeds 712.3 cfs and water rises to approximately 10 inches above the flashboard crest, GMP and the City open the debris sluice gate and the low-level outlet gate to discharge additional flow. These discharges to the Salmon Falls River downstream of the dam and powerhouse occur in both Maine and New Hampshire.

20. The project's average annual generation is approximately 3,916.8 megawatt-hours (MWh). Generation at the project occurs on a year-round basis and is typically highest during the spring season (March and April) when river flow is highest.

E. Proposed Operation and Environmental Measures

21. To protect aquatic resources and water quality, GMP and the City propose to continue operating the project in a run-of-river mode, such that outflow approximates inflow at any given point in time, and the surface elevation of the impoundment is maintained at the flashboard crest elevation of 106.4 feet NGVD 29 under normal operating and flow conditions.

22. To enhance water quality in the impoundment, GMP and the City propose to implement a Water Quality Mitigation and Enhancement Plan (water quality plan) that includes: (1) lowering the impoundment by three feet by releasing flow for project

[16] The pipes drain water that collects between the old earthfill and stone masonry dam, and the reinforced concrete cap that was added to the dam in the early 1990's. The collected water originates from the entire water column within the impoundment.

[17] *See Somersworth Hydropower Assocs.*, 62 FERC ¶ 62,220 (1993); *see also* GMP's and the City's October 29, 2021 Response to Staff's Request for Additional Information.

generation during "critical low flow periods"[18] to "flush stagnant water from the impoundment;" (2) refilling the impoundment by retaining all inflow except for the proposed 30-cfs bypassed reach minimum flow; and (3) monitoring water temperature and dissolved oxygen (DO) concentrations in the impoundment, bypassed reach, and tailrace from July through September for three years after license issuance to determine the effectiveness of the impoundment drawdown procedures in improving water quality within the impoundment.

23. To enhance aquatic habitat in the bypassed reach, GMP and the City propose to increase the minimum flow from 10.3 to 30 cfs or inflow, whichever is less, by releasing 10 cfs from the two existing pipes at the base of the dam and 20 cfs from either: (1) a new notch in the flashboards of the dam; (2) the proposed downstream eel passage facility, when it is operating to pass downstream migrating eels; or (3) the low-level outlet gate at the base of the dam, when the impoundment is drawn down for flashboard repairs.

24. To provide upstream passage for American shad and river herring,[19] GMP and the City propose to construct and operate a 4-foot-wide Denil fishway at the dam by March 15 of the fourth passage season after permanent upstream passage facilities are installed at the Rollinsford Project No. 4451 (Rollinsford Project), located approximately 2.4 miles downstream of the Lower Great Falls Project (section 2 of Settlement Agreement).

25. To provide upstream eel passage, GMP and the City propose to: (1) conduct an upstream eel passage facility siting survey for two passage seasons after license issuance to determine the optimal location for siting an upstream eel ramp; (2) install an upstream eel ramp within four years after license issuance; and (3) operate the ramp from May 1 through September 15.

26. To protect downstream migrating eels from September 1 through October 31, GMP and the City propose to implement nighttime turbine shutdowns from 8 p.m. to 4 a.m. for three consecutive nights following rain accumulations of 0.5 inch or more over a 24-hour period, within four years of license issuance.

27. To provide downstream eel passage at the project, GMP and the City propose to install a two-foot-high flume on the crest of the spillway that conveys 35 cfs over the

[18] GMP and the City define "critical low flow periods" as when total inflow to the project has been less than 60 cfs for seven consecutive days during the months of July through September.

[19] Blueback herring and alewife are difficult to distinguish visually and are therefore often collectively referred to as river herring.

spillway to a new 5.25-foot-deep plunge pool downstream of the dam within four years after license issuance; and operate the facility from September 1 through October 31.

28. To protect cultural resources within the project boundary, GMP and the City propose to consult with the New Hampshire and Maine State Historic Preservation Officers (SHPO) prior to conducting any land-disturbing activities or alterations to known historic structures within the project boundary, to determine whether to conduct archaeological or historical surveys, or to implement avoidance or mitigation measures during the activity.

SUMMARY OF LICENSE REQUIREMENTS

29. This license, which authorizes 1.28 MW of renewable energy generation capacity, requires most of the proposed measures noted above, the staff-recommended measures described below, the conditions required by the Maine Department of Environmental Protection's (Maine DEP) and the New Hampshire Department of Environmental Service's (New Hampshire DES) water quality certifications (Appendices A and B), and the conditions required by Interior's section 18 fishway prescription (Appendix C). Combined, these measures will protect or enhance aquatic resources, water quality, federally listed species, and cultural resources at the project.

30. This license does not require GMP's and the City's proposal to protect downstream migrating eels by implementing nighttime turbine shutdowns from September 1 through October 31 from 8 p.m. to 4 a.m. for three consecutive nights following rain accumulations of 0.5 inch or more over a 24-hour period, beginning four years after license issuance. Instead, this license requires GMP and the City to protect downstream migrating eels by replacing the existing trashrack that has 2.0-inch clear bar spacing with a trashrack that has 0.75-inch clear bar spacing by May 15 of the third calendar year after license issuance.

31. This license also requires GMP and the City to develop a plan to provide passage for downstream migrating American eel, American shad, and river herring, which includes: (1) installing the proposed 2-foot-high flume at the spillway and the proposed 5.25-foot-deep plunge pool downstream of the dam by May 15 of the third passage season after license issuance; and (2) operating the proposed passage facilities from May 15 through November 15 each year, instead of GMP's and the City's proposal to install the downstream passage facilities within four years after license issuance to provide passage for eels from September 1 through October 31.

32. To protect the threatened northern long-eared bat, this license requires GMP and the City to avoid the removal of non-hazardous trees greater than or equal to three inches diameter at breast height from April 1 through October 31.

33. To protect the threatened small whorled pogonia, this license requires GMP and the City to survey for small whorled pogonia prior to any ground-disturbing activities and consult with the U.S. Fish and Wildlife Service (FWS) to determine if any measures are needed to protect any small whorled pogonias identified during the survey.

34. To protect historic properties that are eligible for or listed on the National Register of Historic Places (National Register), this license requires GMP and the City to develop a Historic Properties Management Plan (HPMP) in consultation with the New Hampshire and Maine SHPOs, instead of GMP's and the City's proposal to consult with the SHPOs prior to conducting land-disturbing activities or making alterations to known historic structures within the project boundary.

WATER QUALITY CERTIFICATIONS

35. Under section 401(a)(1) of the Clean Water Act (CWA),[20] the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued a water quality certification (certification) for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification must become a condition of any federal license that authorizes construction or operation of the project.[21] Discharges to the Salmon Falls River downstream of the project dam and powerhouse occur in both Maine and New Hampshire. Therefore, a certification is needed from each state.

A. Maine Water Quality Certification

36. On April 6, 2021, GMP and the City applied to Maine DEP for a water quality certification for the Lower Great Falls Project, which Maine DEP received on the same date. On April 6, 2022, Maine DEP issued a certification for the project that includes five conditions. Three of the conditions (conditions 1 through 3) are general or administrative in nature and are not discussed further. The remaining conditions require GMP and the City to: (1) implement the proposed water quality plan (Condition A); and (2) review the effectiveness of the proposed water quality plan within five years after implementation (Condition B). The conditions of Maine DEP's certification are set forth in Appendix A of this order and incorporated into the license by ordering paragraph (E).[22]

[20] 33 U.S.C. § 1341(a)(1).

[21] *Id.* § 1341(d).

[22] *See infra* PP 95 – 97 for a discussion of these conditions under FPA section 10(a).

B. New Hampshire Water Quality Certification

37. On April 6, 2021, GMP and the City applied to the New Hampshire DES for a water quality certification for the Lower Great Falls Project, which New Hampshire DES received on the same date. On April 4, 2022, New Hampshire DES issued a certification for the project that includes 16 conditions. Nine of the conditions (conditions E-1 through E-9) are general or administrative in nature and are not discussed further. The remaining conditions require GMP and the City to:

(1) operate the project in an instantaneous run-of river mode whereby outflow to the project equals inflow at all times, and water levels upstream of the dam are not drawn down for the purpose of generating power (condition E-10a), instead of operating the project in a run-of-river mode, such that outflow approximates inflow at any given point in time, as proposed by GMP and the City;

(2) release a year-round minimum bypassed reach flow of 37 cfs or inflow, whichever is less, to protect aquatic life in the bypassed reach (condition E-10b), instead of a minimum flow of 30 cfs or inflow, as proposed by GMP and the City;

(3) maintain the elevation of the impoundment at the flashboard crest elevation of 106.4 feet NGVD 29, "plus any additional elevation required to pass" the minimum bypassed reach flow required by condition E-10b (condition E-10c);

(4) when drawing down the impoundment for scheduled maintenance, lower the impoundment water level no more than six inches per day to protect aquatic resources in the impoundment (condition E-10e);

(5) when refilling the impoundment after a drawdown for maintenance or emergencies, release 90% of the inflow downstream to the Salmon Falls River and use the remaining 10% of inflow to refill the impoundment (condition E-10d);

(6) implement notification and reporting procedures for deviations from the certification conditions, including: (1) notify resource agencies within 24 hours after a deviation from the minimum flow or impoundment management requirements; (2) file a report with resource agencies within 45 days of a deviation describing the cause, severity, and duration of the deviation; any adverse environmental effects from the deviation; and corrective measures; and (3) file a report with the agencies by April 1 of each year demonstrating compliance with the minimum flow and impoundment management requirements; and describing any deviations

and corrective measures taken to prevent the reoccurrence of the deviation (condition E-11);

(7) develop an operation compliance monitoring plan (condition E-12);

(8) provide upstream and downstream passage for anadromous fish and American eel in a manner consistent with Interior's section 18 fishway prescription (condition E-13);

(9) develop a water quality improvement plan that includes measures to: (1) ensure that water in the impoundment, bypassed reach, and tailrace either: (a) meets New Hampshire DES's water quality standards or (b) is not "any worse than in the upstream riverine segment," to the extent that the riverine segment immediately upstream of the project is not meeting water quality standards; (2) monitor the effectiveness of the measures; (3) schedule the implementation of the measures; and (4) report on monitoring results (condition E-14), instead of developing the water quality plan proposed by GMP and the City;

(10) monitor DO and temperature in the riverine reach upstream of the impoundment, and in the impoundment, tailrace, and bypassed reach every five years, including five weeks of monitoring during "periods of relatively low flows and high temperatures" and "when the Project is, and is not, generating," in order to determine whether changes in project operation are necessary to comply with New Hampshire DES's water quality standards during the term of a subsequent license (condition E-15), instead of monitoring DO and temperature from July through September for three years after license issuance, as proposed by GMP and the City; and

(11) if New Hampshire DES notifies GMP and the City that invasive species control efforts are needed in portions of the river affected by the project, then GMP and the City must fund invasive species control efforts, and temporarily modify project operation as necessary to control invasive species (condition E-16).

1. Run-of-River Operation

38. New Hampshire DES's certification condition E-10a requires GMP and the City to operate the project in an instantaneous run-of-river mode whereby outflow from the project equals inflow at all times. This would be a change from the current run-of-river mode of operation, where outflow from the project approximates inflow to the impoundment at any given point in time.

39. The project is not capable of operating in an instantaneous run-of-river mode, with total outflow from the project equaling inflow on an instantaneous basis. The project is operated in a run-of-river mode using an automatic pond level control system. This system measures changes to the surface elevation of the impoundment, thus providing an indirect measure of changes to inflow. As inflow increases or decreases, a certain amount of time elapses before the impoundment elevation changes, depending on the rate and magnitude of the change in inflow. Once the change in inflow affects the impoundment elevation, the pond level control system automatically adjusts turbine flow. Based on these technical limitations and the delay associated with adjusting project outflow to match inflow, it is not possible to match outflows and inflows on an instantaneous basis, as required by New Hampshire DES's certification condition E-10a. Additionally, New Hampshire DES has not described how operating the project in an instantaneous run-of-river mode would provide additional protection or benefits to aquatic resources compared to the current mode of run-of-river operation.

40. Continuing to operate the project such that the total outflow from the project approximates, rather than equals, inflow at any point in time would result in stable impoundment elevations, which in turn would help protect fish spawning areas and freshwater mussel beds from becoming dewatered and limit project-related erosion along the impoundment shoreline. Operating the project in this manner would likewise ensure that downstream flows are not affected by project operation. Therefore, operating the project as run-of-river – defined as the sum of all outflows approximating the sum of all inflows at any given point in time – would provide the same level of benefits to aquatic resources upstream and downstream of the project as New Hampshire DES's certification condition E-10a, and is operationally feasible. However, condition E-10a is included in the license because it is mandatory under section 401 of the CWA.

2. Minimum Bypassed Reach Flow

41. New Hampshire DES's certification condition E-10b requires that GMP and the City release 37 cfs to the bypassed reach or inflow, whichever is less. In contrast, GMP and the City propose to enhance aquatic habitat in the bypassed reach by increasing the current minimum flow from 10.3 cfs to 30 cfs or inflow, whichever is less.

42. In the EA, Commission staff concluded that increasing the minimum bypassed reach flow from 10.3 cfs to 30 or 37 cfs would benefit aquatic resources in the bypassed reach by providing additional aquatic habitat. Relative to 10.3 cfs, the proposed minimum flow of 30 cfs would provide an approximately 71%, 24%, and 61% increase in suitable habitat for adult shad and river herring, brown trout, and longnose dace in the bypassed reach, respectively. By comparison, New Hampshire DES's required minimum

flow of 37 cfs would provide an approximately 80%, 33%, and 80% increase in suitable habitat for these species in the bypassed reach.[23]

43. In the EA, staff concluded that a minimum flow of 37 cfs would reduce annual energy production at the project by 404 MWh and result in an annual lost opportunity cost of $20,130. GMP's and the City's proposal to release a minimum flow of 30 cfs would reduce annual energy production at the project by 298 MWh, and result in an annual lost opportunity cost of $14,870. Staff concluded that the aquatic habitat benefits associated with the proposed 30-cfs minimum flow would be worth the cost, and recommended it. Staff concluded that the additional aquatic benefits associated with a 37-cfs minimum flow would not outweigh the additional annual lost opportunity cost of $5,260, and did not recommend it. However, condition E-10b, stipulating a 37-cfs minimum flow, is included in the license because it is mandatory under section 401 of the CWA.

44. The 16 conditions of New Hampshire DES's certification are set forth in Appendix B of this order and incorporated into the license by ordering paragraph (E).

COASTAL ZONE MANAGEMENT ACT

45. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[24] the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.[25]

46. By letter dated April 18, 2017, the Maine Department of Marine Resources notified GMP and the City that the project is not located within the state's designated coastal zone and a coastal zone consistency review is not required.[26]

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[23] EA at app. I-14.

[24] 16 U.S.C. § 1456(c)(3)(A).

[25] Discharges to the Salmon Falls River downstream of the project dam and powerhouse occur in both Maine and New Hampshire. Therefore, the applicants contacted both states for a consistency review.

[26] *See* GMP's and the City's October 13, 2020 Additional Information Response at Attachment 4.

47. On January 6, 2022, GMP and the City submitted a certification of consistency to the New Hampshire DES for compliance with the CZMA. By letter dated April 5, 2022, and filed with the Commission on October 21, 2022, New Hampshire DES issued GMP and the City its determination of consistency with the New Hampshire Coastal Management Program. The determination does not include any stipulations for compliance.

SECTION 18 FISHWAY PRESCRIPTION

48. Section 18 of the FPA[27] provides that the Commission must require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Secretary of the Interior, as appropriate.

49. On April 16, 2021, Interior filed a preliminary fishway prescription for the project that is consistent with the above-described Settlement Agreement.[28] The preliminary fishway prescription is attached to this order as Appendix C, and is made a requirement of this license by ordering paragraph (F).

50. The prescription requires GMP and the City to:

(1) provide upstream passage for American shad and river herring by installing either a "technical" fishway[29] from the tailrace, a technical fishway at the dam, or a "nature-like" fishway[30] at the dam by March 15 of the fourth calendar year after permanent upstream fishways for American shad and

[27] 16 U.S.C. § 811.

[28] The preliminary prescription stated that Interior would finalize its prescription within 30 days of the comment period for the EA (i.e., by September 20, 2022). On October 12, 2022, Interior notified the Commission that it will file a modified fishway prescription by February 28, 2023. Any requirements that Interior submits with its modified fishway prescription will become conditions of the license after the license is issued. *See City of Tacoma, Wash. v. FERC*, 460 F.3d 53 (D.C. Cir. 2006).

[29] A "technical" fishway is a constructed chute, series of pools, or elevator-like lift designed to provide a pathway over a dam for fish migrating upstream. Interior states that a 4-foot-wide Denil fish ladder (or equivalent) installed at a slope no greater than 1:8 (vertical:horizontal) would accommodate the anticipated production potential of the Lower Great Falls impoundment, including 12,425 river herring, 1,595 shad, and approximately 500 resident or target species.

[30] A nature-like fishway is a fishway structure that is designed to mimic the natural functions and/or aesthetics of a river.

river herring become operational at the Rollinsford Hydroelectric Project No. 3777 (conditions 11.6 and 11.8);

(2) operate and maintain the upstream fish passage facilities annually from April 15 through July 15 (condition 11.3);

(3) conduct a two-season upstream eel passage facility siting survey beginning the first full passage season after license issuance, and consult with the FWS and other resource agencies to determine the optimal location for siting permanent upstream eel passage facilities (condition 11.9);

(4) install an upstream eel passage facility no later than May 1 of the fourth year after license issuance or the second calendar year after completing the siting survey, and operate and maintain the facility from May 1 through October 31 annually (conditions 11.3, 11.6, and 11.9);

(5) develop a plan to provide downstream passage for American shad and river herring within three years of license issuance, including design plans for fish passage facilities, and operate and maintain the facilities from June 1 through November 15 (conditions 11.3, 11.6, and 11.11);

(6) develop a plan to provide downstream passage for American eel within three years of license issuance, including design plans for eel passage facilities and/or operational measures, and implement the measures from August 15 through November 15 (condition 11.3, 11.6, and 11.10);

(7) to protect emigrating eels until permanent downstream passage facilities are operational, shut down the turbines from dusk to dawn for three consecutive nights following rain accumulations of 0.50 inch or more over a 24-hour period, from August 15 through November 15 annually (conditions 11.3 and 11.10);

(8) design upstream and downstream eel and anadromous fish passage facilities in a manner consistent with the FWS's Design Criteria Manual (conditions 11.8, 11.9, and 11.10);

(9) develop a fishway operation and maintenance plan that includes provisions for: (1) operating and maintaining upstream and downstream fish passage facilities at the project; and (2) monitoring and reporting on the operation and maintenance of the facilities as they affect fish passage (condition 11.4); and

(10) develop plans for testing the effectiveness of upstream and downstream fish passage facilities for a minimum of two years after the facilities are operational (condition 11.7.1).

51. By a letter filed April 16, 2021, Interior requested that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 402 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Lower Great Falls Project.

THREATENED AND ENDANGERED SPECIES

52. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)[31] requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of their designated critical habitat.

53. Based on the FWS's Information for Planning and Consultation (IPaC) website, the northern long-eared bat (*Myotis septentrionalis*), federally-listed as threatened, has the potential to occur at the project.[32] On April 14, 2021, Interior filed a letter stating that the small whorled pogonia, federally-listed as threatened, may also occur in the project vicinity. No critical habitat has been designated for the northern long-eared bat or small whorled pogonia.

A. Northern Long-Eared Bat

54. FWS finalized an ESA section 4(d) rule for the northern long-eared bat in January 2016.[33] In the FWS's January 5, 2016 Programmatic Biological Opinion for the

[31] 16 U.S.C. § 1536(a).

[32] *See* Commission staff's October 20, 2022 memorandum on FWS's Updated List of Threatened, Endangered, Candidate, and Proposed Species; *see also* IPaC, FWS, https://ipac.ecosphere.fws.gov/ (accessed Oct. 20, 2022). On November 30, 2022, FWS published a final rule reclassifying the northern long-eared bat as endangered, and removing its species-specific rule issued under section 4(d) of the ESA. The rule is effective on January 30, 2023. 87 Fed. Reg. 73,488 (Nov. 30, 2022).

[33] Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat, 81 Fed. Reg. 1900 (Jan. 14, 2016). Section 4(d) of the ESA directs FWS to issue regulations deemed "necessary and advisable to provide for the conservation of [threatened] species." 16 U.S.C. § 1533(d).

section 4(d) rule,[34] FWS found that incidental take of the northern long-eared bat is not prohibited unless the action affects a northern long-eared bat hibernaculum, includes tree removal near a hibernaculum, or includes removal of an occupied maternity roost tree or any trees within 150 feet of an occupied roost tree.[35]

55. In the EA, Commission staff determined that the northern long-eared bat could be affected by construction of the new upstream and downstream fish and eel passage facilities at the project.[36] Commission staff recommended that non-hazardous tree removal be conducted outside of the bat's active period of April 1 through October 31, to minimize the adverse effects of the installation of fish and eel passage facilities on the northern long-eared bat.[37] With this measure in place, staff concluded that relicensing the project may affect the northern long-eared bat, but any incidental take that may result is not prohibited under section 4(d) of the ESA. By letter dated July 7, 2022, Commission staff requested FWS's concurrence that relicensing the project with the staff-recommended measures is not likely to adversely affect the northern long-eared bat. On August 18, 2022, FWS concurred with Commission staff's conclusions.[38] No further action is required for the northern long-eared bat.

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[34] FWS, Midwest Regional Office, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions* (Jan. 5, 2016), https://www.fws.gov/sites/default/files/documents/BOnlebFinal4d.pdf (Programmatic Biological Opinion).

[35] FWS's Programmatic Biological Opinion states that northern long-eared bats roost in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags with a diameter of three inches or greater at breast height. *See* Programmatic Biological Opinion at 11, 18. Diameter "at breast height" refers to the tree diameter as measured about four to 4.5 feet above the ground. FWS defines "tree removal" as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bat. Hazardous trees are trees that are removed for the protection of human life and property. Removal of hazardous trees is not prohibited under the 4(d) rule. Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat, 81 Fed. Reg. at 1901-1902.

[36] EA at app. E-3.

[37] *Id*. at app. I-10 – I-11.

[38] In addition, an official letter generated by the FWS's New England Ecological Services Field Office on June 23, 2022, stated that relicensing the project with staff's recommended tree-clearing restriction would be consistent with the FWS's January 5, 2016

56. Article 405 requires GMP and the City to limit the removal of trees greater than or equal to three inches in diameter at breast height to the period of November 1 through March 31, which is outside of the species' active season.

B. Small Whorled Pogonia

57. In its April 14, 2021 letter, Interior states that the small whorled pogonia may occur in the project vicinity. Suitable forest habitat for the small whorled pogonia could exist along the north side of the impoundment and in a few sections along the south side of the impoundment, where mature oak and softwood forests occur on the shoreline.

58. Under FPA section 10(j), Interior recommends that a qualified botanist conduct surveys for small whorled pogonia prior to any ground disturbing activities at the project. To the extent any small whorled pogonia is identified, FWS recommends that GMP and the City consult with the FWS on potential measures to protect the small whorled pogonia.

59. In the EA,[39] staff acknowledged that the small whorled pogonia could occur in the project area and could be affected by ground disturbance associated with the installation of upstream fish passage facilities proposed by the applicant and prescribed by Interior. Staff concluded that Interior's section 10(j) recommendation would protect small whorled pogonia from project effects, and recommended the measure.

60. By letter dated July 7, 2022, Commission staff requested FWS's concurrence that relicensing the project with the staff-recommended measure is not likely to adversely affect the small whorled pogonia. On August 18, 2022, FWS concurred with Commission staff's conclusions.[40] No further action is required for the small whorled pogonia.

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intra-Service programmatic biological opinion on the 4(d) rule for the northern long-eared bat and verified that the Commission's responsibilities were therefore fulfilled under ESA section 7(a)(2), with respect to the northern long-eared bat. *See* Commission staff's July 7, 2022 Memorandum on *Streamlined Consultation for the Northern Long-Eared Bat under the Final 4(d) Rule.*

[39] EA at app. E-4 & I-11.

[40] *See* FWS' Comments on the Draft Environmental Assessment, 10(j) Preliminary Determination of Inconsistency, and Request for Endangered Species Act Concurrence (Aug. 18, 2022).

61. Article 406 requires GMP and the City to survey for small whorled pogonia prior to ground-disturbing activities and, if the small whorled pogonia is found, consult with FWS on potential measures to protect the species.

C. Proposed Species

62. On September 14, 2022, FWS proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered based upon the range-wide impacts of white-nose syndrome that have caused declines in affected colonies.[41] Critical habitat is not being proposed for the species.

63. Tricolored bats are known to occur in 39 states including Maine and New Hampshire.[42] The active season for the tricolored bat is similar to the northern long-eared bat. During spring, summer, and fall, tricolored bats in the Eastern U.S. predominantly roost in foliage of live or recently dead deciduous hardwood trees, and form summer maternity colonies where young are born.[43]

64. Construction activities associated with the installation of new upstream and downstream fish and eel passage facilities could affect the tricolored bat, as discussed in the EA for the northern-long eared bat.[44] Article 405 requires GMP and the City to limit the removal of trees greater than or equal to three inches in diameter at breast height to the period of November 1 through March 31, which is outside of the species' active season. This tree clearing restriction will limit project effects on any bats present at the project. Because relicensing this project requires no change to project operation, and considering the limited scope of the project, we conclude that relicensing the project is not likely to jeopardize the continued existence of the tricolored bat.

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[41] 87 Fed. Reg. 56,381 (Sept. 14, 2022). Although proposed species are provided no special protection under the ESA, we nevertheless provide an analysis of the action on tricolored bat because the species may become federally listed during the term of a subsequent license.

[42] FWS, *Environmental Conservation Online System Tricolored Bat Species Profile* (Nov. 2022), https://ecos.fws.gov/ecp/species/10515.

[43] FWS, *Status Assessment Report for the Tricolored Bat* (*Perimyotis subflavus*), Version 1.1. (December 2021), https://www.fws.gov/sites/default/files/documents/Tricolored_Bat_SSA.pdf.

[44] EA at app. E-3 – E-4.

HISTORIC AND CULTURAL RESOURCES

A. National Historic Preservation Act

65. Under section 106 of the National Historic Preservation Act (NHPA),[45] and its implementing regulations,[46] federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register, defined as historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

66. GMP and the City initiated consultation with the Maine and New Hampshire SHPOs on December 19, 2016, to identify historic properties, determine the eligibility of cultural resources for listing on the National Register, and assess potential adverse effects on historic properties within the project's area of potential effects (APE).[47] Archaeological evaluations, conducted by GMP and the City in consultation with the SHPOs, concluded that three archaeological sites in the APE are eligible for listing on the National Register, including the remnants of a mid to late 19th century stone water tower, the remnants of a 19th century sawmill complex, and a Middle to Late Ceramic period site.[48] In addition, the north abutment of the project dam and the area surrounding the low-level outlet gates consist of stone masonry and structural remains that were originally constructed in 1825. In the EA, staff concluded that these features could be eligible for listing on the National Register.[49]

67. In the EA,[50] Commission staff concluded that relicensing the project as proposed could have an adverse effect on the historic properties. Adverse effects could occur if repairs are needed to maintain the structure and function of the north abutment of the dam or the low-level outlet gates, or to fix structural damage to the north abutment of the dam

[45] 54 U.S.C. § 306108.

[46] 36 C.F.R. pt. 800 (2022).

[47] On March 3, 2017, the Commission initiated informal consultation with the SHPOs and designated GMP and the City as the non-federal representatives for carrying out informal consultation pursuant to section 106 of the NHPA.

[48] EA at 76 – 77.

[49] *Id*. at 79.

[50] *Id*. at 77 – 80 & app. I-11 – I-12.

or the low-level outlet gates that occurs over the course of project operation. Adverse effects could also occur if the fish and eel passage facilities prescribed by Interior are installed on the historic properties. It is also possible that unknown historic resources may be discovered during project operation or other project-related activities within the APE.

68. Commission staff issued a draft Programmatic Agreement (PA) for the project on July 11, 2022, that included stipulations for developing an HPMP to ensure that project-related adverse effects on historic properties or previously undiscovered archaeological resources would be adequately addressed over the term of a subsequent license. On July 22, 2022, the New Hampshire SHPO filed a letter concurring with the draft PA. On August 5, 2022, the Maine SHPO filed a letter acknowledging receipt of the draft PA and stating that it did not have any comments on the draft PA.

69. On August 29, 2022, staff issued a final PA. The Maine and New Hampshire SHPOs signed the PA on September 8, 2022, and October 13, 2022, respectively. GMP and the City concurred on September 9, 2022. The PA requires the licensees to prepare an HPMP for the project, and upon Commission approval, implement the HPMP for the term of the subsequent license. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 407 requires the licensees to implement the PA and to file its HPMP for approval with the Commission within one year of license issuance.

B. Tribal Consultation

70. Commission staff invited consultation with the Penobscot Indian Nation, Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, and the Passamaquoddy Tribe (federally recognized Tribes) on April 21, 2016. The federally recognized Tribes did not respond to the initial consultation letter or file any comments in the record of the proceeding.

71. GMP and the City provided the pre-application document and the license application to the above federally recognized Tribes, and to the Abenaki Nation of New Hampshire and the Cowasuck Band of the Pennacook Abenaki People for review and comment.[51] On May 14, 2020, the Commission issued a public notice of the license application and solicited for additional study requests. Then, on November 30, 2020, the Commission issued a notice soliciting scoping comments. None of the federally recognized Tribes or other consulted Tribes filed comments or requested studies.

[51] The Abenaki Nation of New Hampshire and the Cowasuck Band of the Pennacook Abenaki People are not federally recognized Tribes.

72. The draft PA was sent to the federally recognized Tribes on July 11, 2022. None of the federally recognized Tribes filed comments on the draft PA. The final PA was sent to the federally recognized Tribes on August 29, 2022, and the federally recognized Tribes were invited to be concurring parties to the PA. None of them filed a response with the Commission or elected to be a concurring party to the PA.

73. The final PA was executed on October 28, 2022, with the New Hampshire and Maine SHPOs as signatories, and GMP and the City as concurring parties. None of the Tribes filed a response with the Commission on the executed PA.

ENVIRONMENTAL JUSTICE

74. In conducting NEPA reviews of proposed hydropower projects, the Commission follows the instruction of Executive Order 12898, which directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities).[52] Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[53] Environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[54]

[52] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). While the Commission is not one of the specified agencies in Executive Order 12898, the Commission nonetheless addresses environmental justice in its analysis, in accordance with our statutory duties.

[53] Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021). The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution. *Id*. The term also includes, but may not be limited to, minority populations, low-income populations, or indigenous peoples. *See* EPA, *EJ 2020 Glossary* (Aug. 18, 2022), https://www.epa.gov/environmentaljustice/ej-2020-glossary.

[54] EPA, *Learn About Environmental Justice* (Sept. 6, 2022), https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#:~:text=Environmental%20justice%20(EJ)%20is%20the,environmental%20laws%2C%20regulations%20and%20policies.

75. In the EA, Commission staff identified five environmental justice communities within a one mile radius of the project boundary and considered how relicensing the project could affect the communities.[55] None of the identified environmental justice communities are adjacent to the project impoundment, dam, or other project facilities. The EA concluded that because the environmental justice communities are not adjacent to where the fishway construction activities would occur (approximately 0.4 mile between the construction and the nearest community) and because the staff-recommended environmental measures would enhance aquatic, recreation, and aesthetic resources at the project, relicensing the project would not result in disproportionately high and adverse impacts on the identified environmental justice populations. Therefore, we find the project as licensed herein, which includes staff's recommended measures, will not result in disproportionately high and adverse impacts on the identified environmental justice communities.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(J) OF THE FPA

76. Section 10(j)(1) of the FPA[56] requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act,[57] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

77. On April 14, 2021, in response to the February 10, 2021 public notice that the project was ready for environmental analysis, Interior filed seven recommendations under section 10(j). Of the seven recommendations, one of Interior's recommendations is outside the scope of section 10(j) and is discussed in the next section.

78. The license includes five of the six recommendations that fall within the scope of section 10(j): (1) operate the project in an instantaneous run-of-river mode, whereby outflow from the project equals inflow to the project at all times (Appendix B, condition E-10a); (2) release a year-round minimum flow of 37 cfs to the bypassed reach, or inflow, whichever is less (Appendix B, condition E-10b); (3) implement an impoundment refill procedure after the impoundment is drawn down for emergencies and maintenance, whereby 90% of inflow is passed downstream, and the impoundment is refilled using the remaining 10% of inflow to the project (Appendix B, condition E-10d); (4) develop an operation compliance monitoring plan (Appendix B, condition E-12); and

[55] EA at 80 – 82.

[56] 16 U.S.C. § 803(j)(1).

[57] 16 U.S.C. §§ 661 *et seq*.

(5) survey for small whorled pogonia prior to any ground disturbing activities (Article 406).

79. In the EA,[58] Commission staff made a preliminary determination that the following section 10(j) recommendations are inconsistent with the comprehensive planning standard of section 10(a)(1) and the public interest standard of section 4(e) of the FPA because the benefits of the recommended measures do not justify their costs: (1) operate the project in an instantaneous run-of-river mode, whereby project outflow equals inflow to the impoundment; (2) release a year-round minimum flow of 37 cfs to the bypassed reach, or inflow, whichever is less; and (3) implement a seasonal tree-clearing limitation from April 1 through October 31, during which time trees can only be removed after determining through the use of "protocol-level surveys" that the northern long-eared bat is not present.

80. If the Commission believes that any section 10(j) recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies.[59] If the Commission still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

81. By letter dated July 7, 2022, Commission staff advised Interior of the preliminary determinations of inconsistency, asked whether the agency was satisfied with the alternative conditions set forth in the EA, and offered a meeting to attempt to resolve the apparent inconsistencies. On August 18, 2022, FWS requested a meeting to attempt to resolve Commission staff's preliminary determination of inconsistency for the 37-cfs minimum flow recommendation. By conference call on September 15, 2022, Commission staff attempted to resolve the inconsistency for the 37-cfs minimum flow recommendation, pursuant to section 10(j)(2) of the FPA.[60] The issue was not resolved during the meeting. In addition, FWS did not request a meeting on the other two recommendations involving run-of-river operation and northern long-eared bat protection. However, New Hampshire DES's certification condition E-10a requires Interior's section 10(j) recommendation for run-of-river operation (i.e., that the project be

[58] EA at app. I-10 – I-14, app. J-1 & J-3.

[59] 16 U.S.C. § 803(j)(2).

[60] *Id*. *See* August 31, 2022 Notification of FPA Section 10(j) Meeting and October 3, 2022 Summary of Section 10(j) Meeting.

operated in an instantaneous run-of-river mode) whereby outflow from the project equals inflow to the project at all times.[61] In addition, New Hampshire DES's certification condition E-10b requires Interior's section 10(j) recommendation for minimum bypassed reach flows (i.e., that a minimum flow of 37 cfs be released to the bypassed reach or inflow, whichever is less).[62] Therefore, these measures are mandatory under section 401 of the CWA and are included in Appendix B of this license. Because these recommendations are included in this license, the section 10(j) inconsistencies for run-of-river operation and minimum bypassed reach flows are moot.

82. With respect to the northern long-eared bat, in the EA, Commission staff recommended a seasonal clearing restriction for trees greater than or equal to three inches in diameter at breast height from April 1 through October 31.[63] Staff concluded that implementing a seasonal tree-clearing restriction would protect northern long-eared bats at no substantial cost to GMP and the City. Although protocol-level surveys could be used to determine the presence of northern long-eared bats at the project at an estimated levelized annual cost of $810, staff concluded that its recommendation to restrict tree removal activities from April 1 through October 31, would provide a similar level of protection for the species at no cost. Therefore, staff concluded that Interior's recommendation to protect bats by allowing tree clearing from April 1 through October 31 to proceed only after GMP first conducts surveys and finds no bats is not worth the cost.[64]

83. For the above reasons, in accordance with FPA section 10(j)(2)(A), we find that Interior's recommendation is inconsistent with the FPA. We further find, in accordance with section 10(j)(2)(B) of the FPA, that the seasonal clearing restriction required by this license (Article 405) will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project.

SECTION 10(A)(1) OF THE FPA

84. Section 10(a)(1) of the FPA[65] requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the

[61] *See supra* PP 38 – 40.

[62] *See supra* PP 41 – 43.

[63] EA at app. I-10 – I-11.

[64] *Id*. at 119.

[65] 16 U.S.C. § 803(a)(1).

improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. Post-licensing Consultation

85. Interior filed one recommendation under section 10(j) that is not a specific measure to protect, mitigate damages to, or enhance fish and wildlife.[66] Consequently, this recommendation is not considered under section 10(j) of the FPA. Instead, this recommendation is considered under the broad public-interest standard of section 10(a)(1) of the FPA.

86. Interior recommends that GMP and the City notify the resource agencies and Commission of any activity that may affect a federally listed species in a manner not considered in the subsequent license.[67] In addition, Interior recommends that GMP and the City be required to notify Interior if the licensees file an amendment or appeal of any fish and wildlife-related license conditions or a request for an extension of time to implement the articles.[68]

87. In its August 18, 2022 comments on the EA, Interior explained that a licensee is granted significant authority and discretion in its maintenance and operation of a project.[69] Interior asserts that a license issued for a 30- to 50-year term cannot adequately predict how project maintenance or operation will affect a species or designated critical habitat so far into the future and states that its recommendation is intended to require the licensees to evaluate potential activities and how an activity may affect a listed species or designated critical habitat. If, upon conclusion of that evaluation, the licensees determine the activity may affect listed species or designated critical habitat in a manner not previously considered, then Interior's recommendation would require the licensees to provide that information to the Commission and FWS for consideration and potential initiation of the procedures outlined in the Interagency Task Force Report.[70]

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[66] Recommendations under section 10(j) must be specific measures. *See*, e.g.*, Ala. Power. Co.*, 153 FERC ¶ 61,298, at PP 70-71 (2015) (rejecting a 10(j) recommendation as unduly vague), *order on reh'g*, 157 FERC ¶ 61,100 (2016).

[67] *See* Interior's April 14, 2021 Comments at 8.

[68] *Id*.

[69] *See* Interior's August 18, 2022 Comments at 5.

[70] *Id*. at 5 – 6.

88. Once a license is issued, the ESA does not require additional consultation during the term of the license, absent a subsequent federal agency action.[71] If issues related to federally listed species arise during the term of a license, either based on new listings or availability of new information, post-licensing procedures developed by the Commission and resource agencies provide a framework for identifying issues, information gaps, and the need for protection measures.[72] The Interagency Task Force Report published in 2000 specifically sets forth a process for resolving post-licensing ESA issues.[73] Appendix II of the report recognizes that the Commission may receive new information from licensees, non-governmental organizations, or Interior regarding project effects on listed species (including newly-listed species) or critical habitat after a project is licensed and operational, after which the Commission, the licensees, and Interior will "consult to identify the information that would be needed to determine potential project effects."[74]

89. In addition, standard license Article 11[75] requires the licensee to construct, maintain, and operate facilities, and modify project structures and operation for the conservation and development of fish and wildlife resources, if ordered by the Commission upon its own motion, or upon the recommendation of the Secretary of the Interior or the fish and wildlife agencies of any state in which the project is located, after

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[71] *See Cal. Sportfishing Prot. All. v. FERC*, 472 F.3d 593, 595, 599 (9th Cir. 2006) (holding that the continued operation of a hydroelectric project does not require additional section 7 consultation regardless of whether new information becomes available after issuance of the license, in the absence of a subsequent federal action).

[72] *See* Interagency Task Force Report on Improving Coordination of ESA Section 7 Consultation with the FERC Licensing Process, *Work Group on the Coordination of Federal Mandates* (Dec. 8, 2000) (ITFR), https://www.ferc.gov/sites/default/files/2020-04/ImprovingCoordinationofEndangeredSpeciesActSection7ConsultationwiththeFERCLicensingProcess.pdf (accessed September 2, 2022); *The Town of Rollinsford, N.H.*, 180 FERC ¶ 61,176, at PP 11-12 (2022); *Brookfield White Pine Hydro LLC*, 180 FERC ¶ 61,185, at P 66 (2022).

[73] *See id*. at 2 ("[The ITFR] describes procedures to coordinate and integrate the ESA consultation process with the FPA licensing process, *and provides a means of addressing post-licensing consideration of ESA issues*.") (emphasis added).

[74] *Id.* at 17.

[75] *See Standardized Conditions for Inclusion in Preliminary Permits & Licenses Issued Under Part I of the Fed. Power Act*, Order No. 540, 54 FPC 1792 (1975) (providing Form L-9, Article 11). As explained in ordering paragraph (G), this license is subject to the articles in Form L-9, which is reproduced at the end of this order.

notice and opportunity for hearing.[76] The licensee is also required to file an application to amend the license and receive Commission authorization before substantially modifying project works or operation.[77] Before filing an amendment application, the licensee must consult with any resource agency whose interests would be affected by the amendment,[78] such as the FWS if federally listed species would be affected by the amendment.

90. Article 11 and the Commission's regulations, coupled with the interagency report referenced above, already provide post-license ESA procedures, thus obviating the need for Interior's proposed measure.[79]

B. Water Quality Plan

91. GMP and the City propose a water quality plan[80] to increase DO conditions in the impoundment during low flow periods. The plan includes: (1) drawing down the

[76] *See The Town of Rollinsford, N.H.*, 180 FERC ¶ 61,176 at P 12; *Brookfield White Pine Hydro LLC*, 180 FERC ¶ 61,185 at P 67.

[77] *See id.* at Article 3; *see also The Town of Rollinsford, N.H.*, 180 FERC ¶ 61,176 at P 15 n.35; *Brookfield White Pine Hydro LLC*, 180 FERC ¶ 61,185 at P 67.

[78] *See* 18 C.F.R. §§ 4.38(a)(6), 4.201 (2021).

[79] *The Town of Rollinsford, N.H.*, 180 FERC ¶ 61,176, at PP 10-16; *Brookfield White Pine Hydro LLC*, 180 FERC ¶ 61,185, at PP 66-68. This license order includes several conditions to ensure adequate information flows from the licensees to the Commission during the term of the license. Article 401(c) – (e) require the licensees to notify the Commission of planned and unplanned deviations from run-of-river, impoundment level, and minimum flow requirements related to the project's operation. Article 401(f) requires the licensees to file an application to amend the license and receive Commission authorization prior to implementing any changes to the project for the purpose of mitigating environmental impacts. Standard Article 2 of the license states that "[n]o substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission." Lastly, Standard Article 4 requires the licensees to "cooperate fully with [the Commission's Regional Engineer or his designee] and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto." This information would all be in the Commission's public record and thus available to Interior.

[80] *See* GMP's and the City's May 19, 2022 Additional Information Filing.

impoundment by 3 feet within 48 hours by releasing flow for project generation during "critical low flow periods"[81] to "flush stagnant water from the impoundment;" (2) refilling the impoundment by retaining all inflow except for the proposed 30-cfs bypassed reach minimum flow; and (3) monitoring water temperature and DO concentrations in the impoundment, bypassed reach, and tailrace from July through September for three years after license issuance to determine the effectiveness of the impoundment drawdown procedures.

92. Maine DEP's certification requires GMP and the City to implement the proposed water quality plan after any license issued (condition A) and to review the effectiveness of the plan within five years after implementation (condition B). If the plan does not result in compliance with Maine DEP's surface water quality standards for DO, GMP and the City must revise the plan and submit it to Maine DEP for review and approval.

93. As discussed in the EA, GMP and the City observed low DO concentrations in the impoundment (i.e., below 5.0 milligrams per liter) that may not be adequate to sustain aquatic life.[82] In the EA, Commission staff concluded that because the project operates in a run-of-river mode and does not store water for generation, DO concentrations in the impoundment appear to be the result of natural biochemical processes occurring in the impoundment during periods of low inflow during the summer.[83]

94. Commission staff also concluded that although the proposed plan could increase DO in the impoundment by pulling water with low DO from the impoundment and releasing it downstream, these benefits would not be worth the adverse effects on aquatic resources in the downstream reach. During impoundment drawdowns, freshwater mussels in the impoundment could be stranded and exposed to desiccation, and low DO water would be released into the Salmon Falls River downstream of the powerhouse for 48 hours, which would degrade aquatic habitat and adversely affect aquatic organisms in the downstream reach. The drawdown and refill process would also reduce attraction and conveyance flows for fish and eel passage because the facilities that release these flows from the dam would not be able to operate at their full capacity when the impoundment elevation is below 106.4 feet NGVD 29, which would delay migration through the project area for American shad, river herring, and American eels. Therefore, staff did not recommend the proposed plan for water quality in the impoundment. For the same reasons, staff did not recommend Maine DEP's requirement to implement the proposed

[81] GMP and the City define "critical low flow periods" as when total inflow to the project has been less than 60 cfs for seven consecutive days during the months of July through September.

[82] EA at 20 – 21.

[83] *Id*. at 27 – 28.

plan and test the effectiveness of the plan.[84] However, Maine DEP's certification conditions A and B are included in Appendix A of this license as mandatory under section 401 of the CWA.

C. Upstream Eel Passage

95. American eels have been documented upstream and downstream of the project. To migrate upstream past the project, juvenile eels must climb over or around the Lower Great Falls Dam. Climbing over or around dams is a well-documented behavior for juvenile eels but can cause passage delay and increase the risk of predation.

96. GMP and the City propose to conduct a two-season upstream eel passage facility siting survey, beginning the first full passage season after the effective date of any subsequent license, to determine where to install an upstream eel passage facility at the project. GMP and the City propose to install an eel ramp within four years of license issuance, and operate the facility annually from May 1 through September 15.

97. Interior's fishway prescription conditions 11.3 and 11.9 require GMP and the City to conduct an upstream eel passage facility siting survey from May 1 through October 31 for two years, starting the first full passage season after any license issued. Interior's prescription also requires GMP and the City to install eel passage facility by May 1 of the second calendar year after the siting survey is completed, and to operate the facility from May 1 through October 31 each year thereafter. New Hampshire DES's certification condition E-13 requires GMP and the City to provide upstream eel passage consistent with Interior's prescription.

98. In the EA,[85] staff recommended GMP's and the City's proposal and Interior's prescription to conduct the siting survey for two passage seasons and install the facilities within four years after any license issued. Staff concluded that providing upstream passage from May 1 through October 31, as required by Interior, would reduce passage delay throughout the entire passage season.[86] In comparison, GMP's and the City's proposed operating period of May 1 through September 15, would provide upstream passage for the majority of the migration season, but would not provide passage for juvenile eels migrating upstream from September 16 through October 31 (a total of 46 days).

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[84] *Id*. at app. I-16.

[85] *Id*. at 84.

[86] *Id*. at app. I-4.

99. The levelized annual cost of operating the permanent upstream eel passage facility from May 1 through October 31, as prescribed by Interior, would be $6,910. In comparison, the levelized annual cost of operating the permanent upstream eel passage facility from May 1 through September 15, as proposed by GMP and the City, would be $5,180. Staff concluded that the incremental benefits of the longer season prescribed by Interior (i.e., provide passage for juvenile eels for an additional 46 days) would be worth the incremental additional cost of $1,730, and recommended Interior's prescribed operating period. This license includes Interior's prescribed operating season of May 1 through October 31, as mandatory under section 18 of the FPA (Appendix C, condition 11.3).

D. Downstream American Eel and Anadromous Fish Passage

1. Downstream Passage Facilities

100. As discussed in the EA, American eels have been documented upstream and downstream of the project, and downstream migrating eels could be adversely affected by project operation through turbine entrainment mortality.[87] Similarly, following the installation of the upstream fish passage facilities required by this license, shad and river herring would have access to the Salmon Falls River upstream of the project for spawning. Afterwards, downstream migrating juvenile and adult shad and river herring could be adversely affected by project operation through turbine entrainment mortality.[88]

101. GMP and the City did not propose any downstream anadromous fish passage measures. However, GMP and the City propose to install and operate a downstream eel passage facility within four years of license issuance, including a two-foot-high flume fixed to the crest of the spillway that conveys 35 cfs over the dam to a new 5.25-foot-deep plunge pool downstream of the dam.

102. Interior's prescription conditions 11.10 and 11.11 require GMP and the City to develop plans to provide downstream eel and anadromous fish passage within three years of license issuance. Interior's prescriptions require the licensees to construct, operate, and maintain downstream eel and anadromous fish passage facilities that are designed in a manner that is consistent with FWS's Design Criteria Manual and operate the passage facilities from August 15 to November 15 for eels, and from June 1 to November 15 for anadromous fish (condition 11.3). Additionally, New Hampshire DES's certification condition E-13 requires downstream passage facilities to be constructed and operated as prescribed by Interior. However, Interior's prescription does not include any specific design measures regarding the passage facilities, including where the facilities would be

[87] *Id*. at 46 – 49, app. I-5 – I-7.

[88] *Id.* at app. I-7 – I-8.

located and what type of facility is to be installed. In the EA, staff noted that without more specifics, staff was not able to assess the costs verses benefits of Interior's prescribed facility.[89]

103. In the EA,[90] staff concluded that GMP's and the City's proposed downstream eel passage facility could be used to pass downstream migrating eel, American shad, and river herring. The proposed depths of the flume and plunge pool, and the proposed conveyance flow are consistent with the recommendations in the FWS's Design Criteria Manual, as prescribed by Interior. Commission staff concluded that there would be no additional capital cost associated with providing downstream shad and river herring passage through the downstream eel passage facility and recommended it. Article 403 requires GMP and the City to file a plan for installing and operating the staff-recommended downstream eel and anadromous fish passage facility. The plan must be consistent with the requirements specified by Interior's prescription conditions 11.10 and 11.11.

2. Downstream Eel Passage Implementation and Operation Schedule

104. GMP and the City propose to install the downstream eel passage facility within four years of license issuance and operate the facility from September 1 through October 31 annually. Interior's prescription requires GMP and the City to provide downstream passage within three years of license issuance and implement the measures from August 15 through November 15 annually. In the EA,[91] staff concluded that implementing downstream passage measures within three years of license issuance would provide protection and downstream passage for downstream migrating eels, while still providing sufficient time for agency consultation and the completion of design plans prior to the initiation of construction. Implementing downstream passage measures within four years of any license issued would provide sufficient time for construction but would continue the existing adverse effects associated with turbine entrainment for an additional year relative to Interior's prescribed implementation date.

105. Interior's prescribed operating period is consistent with the reported downstream eel migration season. Providing passage through the proposed downstream passage facility for the entire migration season would protect eels from injury and mortality associated with passage over the spillway. GMP's and the City's proposal to provide downstream passage from September 1 through October 31 would protect eels from

[89] *Id.* at app. I-6.

[90] *Id.* at app. I-6 & I-8.

[91] *Id.* at app. I-6.

injury and mortality for most of the downstream passage season, but eels would be susceptible to injury and mortality for 32 days of the passage season (i.e., 17 days in August and 15 days in November) when downstream passage would not be provided through the proposed facilities.

106. The levelized annual cost of installing the proposed facilities within four years and operating the facility from September 1 through October 31, as proposed by GMP and the City, would be $18,430. The levelized annual cost of installing the proposed facility within three years of any license issued and operating the facility from August 15 through November 15, as prescribed by Interior, would be $24,220. In the EA, staff concluded that the additional benefits of installing the facility within three years of any license issued and operating the facility from August 15 through November 15, would outweigh the additional annual cost of $5,790 relative to GMP's and the City's proposed implementation and operation schedule, and recommended it. This license includes Interior's prescribed dates for installing and operating the downstream eel passage facility as mandatory under section 18 of the FPA (Appendix C, conditions 11.3 and 11.10).

3. Timing of Downstream Fish Passage Installation

107. Interior's prescription would require a downstream anadromous fish passage facility to be operational within three years of a new license being issued. As discussed above, shad and river herring do not currently have access to the Salmon Falls River upstream of the project.[92] In the EA,[93] staff concluded that shad and river herring would have access to the Salmon Falls River upstream of the project by March 15, 2030, following the installation of upstream fish passage facilities at the Rollinsford Project (by March 15, 2026)[94] and the installation of the upstream fish passage facilities required herein for the Lower Great Falls Project (by March 15, 2030).[95] Once shad and river herring access spawning habitat upstream of the project, adult and juvenile shad and river herring would be outmigrating and susceptible to injury and mortality at the Lower Great

[92] *See supra* P 32.

[93] EA at app. I-8.

[94] *See The Town of Rollinsford, N.H.*, 179 FERC ¶ 61,203 at app. C, condition 10.8.1 (requiring installation of upstream fish passage facilities by March 15 of the fourth passage season after license issuance).

[95] *See infra* app. C, condition 11.8 (requiring the upstream fish passage facility to be constructed and operational by March 15 of the fourth calendar year after permanent volitional upstream fishways for American shad and river herring become operational at the Rollinsford Project).

Falls Project. Since there is not a reasonably foreseeable action that would result in shad and river herring outmigration until 2030, staff concluded that there was no basis for recommending Interior's prescription to provide downstream anadromous fish passage within three years of any license issued. Based on the timeline above, staff recommended operating the downstream fish passage facilities within eight years of license issuance (i.e., by March 15, 2030) to provide downstream passage and reduce the potential of injury and mortality that would be associated with turbine entrainment or passage over the spillway.

108. In its August 18, 2022 comments on the EA, Interior states the EA did not fully consider its fishway prescription in the June 16, 2022 license order for the Rollinsford Project, which includes provisions for the installation of a trap and truck facility at the South Berwick Project No. 11163 (located approximately 1 mile downstream of the Rollinsford Project), and the transport of American shad and river herring upstream (including to the Lower Great Falls Project's impoundment) within three years of license issuance (i.e., by March 15, 2025).[96] Interior contends that this provision in the prescription for the Rollinsford Project makes the need for downstream passage at the Lower Great Falls Project reasonably foreseeable within three years of license issuance. Interior requests that the Commission reassess the need for downstream anadromous fish passage measures with three years of license issuance.

109. As explained in the June 16, 2022 license order for the Rollinsford Project,[97] Interior's prescription for the Rollinsford Project does not require a trap and truck facility to be installed at the South Berwick Project or for an amendment to be filed by the licensee of the South Berwick Project. Because the licensee of the South Berwick Project has not actually submitted a request to amend the license for the South Berwick Project to install a trap and truck facility, there is unlikely to be a need for downstream anadromous fish passage at the Lower Great Falls Project within three years of license issuance. Nonetheless, this license includes Interior's prescription condition to install a downstream anadromous fish passage facility at the Lower Great Falls Project within three years of license issuance, as mandatory under section 18 of the FPA.

4. Downstream Fish Passage Facility Operation Period

110. Interior's prescription condition 11.3 requires GMP and the City to provide downstream anadromous fish passage from June 1 to November 15. However, based on studies conducted at the South Berwick Project, located downstream of the Lower Great Falls Project, and the Vernon Project No. 1904, located on the Connecticut River,

[96] *See The Town of Rollinsford, N.H.*, 179 FERC ¶ 61,203 at app. C, condition 10.8.2.

[97] *See id*. P 127.

downstream passage for post-spawning adult shad and river herring could start as early as May 15.[98] Interior's prescribed operating period for downstream shad and river herring passage would protect adults beginning June 1, but would not protect adults migrating downstream from May 15 to May 31. Operating the downstream passage facility annually from May 15 through November 15 would protect alosines for an extra 17 days relative to Interior's prescribed June 1 through November 15 operating period.

111. The estimated levelized annual cost of operating the passage facility from May 15 through November 15 would be $2,620, and the cost of operating the facility from June 1 through November 15 would be $2,350.[99] Although the cost of operating the facility beginning May 15 would be $270 greater than the cost of beginning operation on June 1, the 17 additional days of downstream passage for shad and river herring is worth the cost. Article 403 requires the downstream fish passage facilities to be operated annually from May 15 through November 15.

5. Protection Measures for Downstream Migrating Anadromous Fish and American Eel

112. In its April 14, 2021 comments, Interior recommends that GMP and the City replace the existing trashrack having a clear bar spacing of 2.0 inches with a trashrack that has a clear bar spacing of 0.75 inch to protect fish from turbine entrainment and mortality. GMP and the City propose nighttime turbine shutdowns for the duration of any license in lieu of replacing the trashrack.

113. In the EA,[100] Commission staff concluded that replacing the current two-inch trashrack with a 0.75-inch trashrack, as recommended by Interior, or shutting down the turbines at night for the duration of any subsequent license, as proposed by GMP and the City, would protect eels during downstream passage by either excluding them from the turbine intake or reducing attraction to the turbine intake, respectively. However, shutting down the turbines at night from September 1 through October 31, as proposed by GMP and the City, would not protect shad and river herring from turbine entrainment, as these species migrate during the day and begin their downstream migration earlier in year, from May 15 through November 15. As discussed in the EA, a 0.75-inch trashrack

[98] EA at 59 – 60 & app. I-8 – I-9.

[99] As discussed above, the cost of the facility prescribed by Interior are unknown. Staff developed a cost for Interior's prescribed operational period by estimating the cost of operating the staff-recommended downstream passage facility, assuming the facility would be used beginning the third year after any license issuance.

[100] EA at app. I-9 – I-10.

would physically exclude adult shad and river herring from turbine entrainment and mortality but would not exclude juvenile shad and river herring.

114. Staff estimated that installing a trashrack with a 0.75-inch clear bar spacing would have a levelized annual cost of $23,430. In comparison, the levelized annual cost of the proposed nightly shutdowns would be $8,820. Staff concluded that the additional cost of replacing the trashrack is outweighed by the additional benefit of protecting downstream migrating American shad and river herring and recommended it. Article 404 of this license requires GMP and the City to replace the current trashrack with a trashrack that has a clear bar spacing of 0.75 inch by May 15 of the third calendar year after license issuance.

115. In comments filed on August 22, 2022, GMP and the City requested that the Commission analyze the costs and benefits of two alternative measures for entrainment protection for migratory fish: (1) installation of a diversionary guidance boom at the project, similar to the diversionary guidance boom required in the June 16, 2022 license order for the Rollinsford Project; and (2) seasonal installation of the 0.75-inch trashrack, from May 15 through November 15.

116. Neither the licensees nor any stakeholders in the relicensing proceeding actually proposed or recommended, respectively, the two measures contemplated that the licensees asked the Commission to analyze. Moreover, as discussed above, the EA analyzed and considered the licensee's actual proposed fish protection measure and the recommended agency alternative measures. Therefore, there is no need for an analysis of the additional measures contemplated but not actually proposed by the licensees or recommended by anyone else.

E. Project Boundary

117. Project boundaries enclose the project works that are to be licensed and are to include "only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources."[101]

118. Regarding the land that GMP and the City propose to remove from the project boundary, staff concluded in the EA that revising the project boundary upstream of the dam to follow a contour elevation of 106.4 feet NGVD and removing 0.2 acre of land adjacent to the impoundment would not affect project uses or substantially affect land use. Similarly, the 0.56 acre associated with Olde Mill Road and 0.04 acre occupied by the non-project apartment building adjacent to the south abutment of the dam, which

[101] 18 C.F.R. § 4.41(h)(2) (2021).

GMP and the City are proposing to remove, are not necessary for project purposes.[102] In addition, approximately 0.1 acre of land occupied by the non-project apartment building located on the shoreline downstream of the project dam is not necessary for project purposes. Therefore, in total, 0.9 acre should be removed from the project boundary.

119. In the EA, staff concluded that the 0.2 acre of land associated with the access road is necessary to access the powerhouse for project operation and maintenance.[103] Similarly, the 0.1 acre of land associated with a portion of the parking lot and land adjacent to the apartment buildings is needed for project purposes because the project penstocks are partially located underneath the 0.1 acre, and access to the land could be necessary for project maintenance. Therefore, this 0.3 acre of land should remain in the project boundary, and should not be removed as proposed by GMP and the City.[104]

120. Regarding the land that GMP and the City are proposing to add to the project boundary, staff concluded in the EA that the 0.07 acre of land that is associated with the north abutment of the dam and the low-level outlet pipes is necessary for maintaining and controlling the impoundment water surface elevation, and therefore should be included in the project boundary. Also, the existing transmission line, in its entirety, is necessary for operation and maintenance of the project and should be included in the project boundary, as proposed.

121. Article 205 of this license requires GMP and the City to file a revised Exhibit G drawing that: (1) includes the 0.2 acre of land associated with the access road to the powerhouse; (2) includes the 0.1 acre of land adjacent to the apartment buildings; and (3) does not include the 0.1 acre of land associated with the apartment building on the shoreline downstream of the dam.

F. Recreation Resources

122. There are no project recreation facilities. Recreational activities that occur at the project include flatwater boating, swimming in the impoundment, and hiking, picnicking, and fishing along the shoreline and downstream of the project.[105]

123. The City owns, operates, and maintains the Riverwalk Park, which is located along the New Hampshire shoreline of the project impoundment. The Riverwalk Park is

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[102] EA at 72.

[103] *Id*.

[104] *Id*.

[105] *Id.* at 70.

a 10-acre recreation area with a 12-vehicle capacity dirt parking lot, river overlooks, dirt trail, and several shoreline locations providing put-in access to the impoundment for non-motorized boaters.[106]

124. Great Baxter Mills, LLC owns a private picnic area and car-top boat launch along the impoundment shoreline in New Hampshire, approximately 0.08 mile upstream of the project dam. Use of the picnic area and boat launch is limited to tenants of the apartment building located along Olde Mill Road, approximately 0.03 mile upstream of the project dam.[107]

125. GMP and the City are not proposing any recreation-related measures, and no stakeholders have provided comments on recreation resources at the project. The City's Riverwalk provides public access to the impoundment for boating, swimming, and fishing, and provides a hiking trail for walking along the impoundment. There is no indication that access to the impoundment would cease over the term of a subsequent license for the project. Given the abundance of recreational opportunities in the immediate project vicinity, additional recreation facilities do not appear to be necessary to meet recreation demand in the vicinity of the project.[108] Therefore, this license does not include any measures related to recreation resources at the project. However, to ensure recreational opportunities remain throughout the term of the license, Article 409 of this license requires GMP and the City to notify the Commission if any of the previously-discussed recreation facilities cease operation, and reserves the Commission's right to impose additional recreation measures in the future.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

126. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of these funds for administration of the FPA. Under the regulations currently in effect,[109] projects with an authorized installed capacity of less than or equal to 1.5 MW, like this project, are not assessed an annual charge.

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[106] *Id.*

[107] *Id*. at 71.

[108] *Id*. at 72.

[109] 18 C.F.R. § 11.1(b) (2022).

B. Reservation of Authority to Require Financial Assurance Measures

127. To confirm the importance of licensees maintaining sufficient financial reserves, Article 202 reserves the Commission's authority to require future measures to ensure that the licensees maintain sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

C. Project Financing

128. To ensure that there are sufficient funds available for project construction, operation, and maintenance (including for the installation of fish and eel passage facilities), Article 203 requires the licensees to file for Commission approval documentation of project financing for the construction, operation, and maintenance of the project at least 90 days before starting any construction associated with the project.

D. Exhibit F and G Drawings

129. The Exhibit F drawings filed on October 13, 2020, are approved, and made a part of the license (ordering paragraph (C)). Commission regulations require that licensees file sets of approved drawings in electronic format. Article 204 requires the filing of these Exhibit F drawings.

130. The Exhibit G drawing filed on October 13, 2020, does not conform to section 4.41 of the Commission's regulations, which requires licensees to file an Exhibit G map showing a project boundary that encloses all project works and other features necessary for the operation and maintenance of the project, or for other project purposes, such as recreation, shoreline control, or protection of environmental resources. The Exhibit G drawing includes the current and proposed project boundaries. Also, the project boundary shown on the Exhibit G drawing does not include: (1) 0.2 acre of land associated with the access road to the powerhouse; and (2) 0.1 acre of land adjacent to the apartment building located immediately downstream of the dam. In addition, the project boundary includes 0.1 acre of land occupied by the apartment building downstream of the dam that is not necessary for project purposes.

131. Article 205 requires the licensees to file a revised Exhibit G drawing that shows only a project boundary that includes all licensed project facilities, including: (1) the 0.2 acre of land associated with the access road to the powerhouse; and (2) the 0.1 acre of land associated with a portion of the parking lot and land south of the apartment building located immediately downstream of the dam. In addition, Article 205 requires the licensees to file a revised Exhibit G drawing that does not include the 0.1 acre of land occupied by the apartment building downstream of the dam. The Exhibit G drawing must be in conformance with sections 4.39 and 4.41 of the Commission's regulations.

E. As-Built Exhibits

132. Where new construction or modifications to the project are involved (e.g., new fish and eel passage facilities), the Commission requires licensees to file revised exhibits of project features as-built. Article 206 provides for the filing of these exhibits.

F. Review of Final Plans and Specifications

133. Article 301 requires the licensees to provide the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer with final design documents prior to construction, including plans and specifications, a supporting design report, a quality control and inspection program, a temporary construction emergency action plan, and a soil erosion and sediment control plan.

134. Article 302 requires the licensees to provide the Commission's D2SI – New York Regional Engineer with cofferdam and deep excavation construction drawings prior to the start of any construction requiring cofferdams or deep excavations.

135. Article 303 requires the licensees to consult with the Commission's D2SI – New York Regional Engineer on any proposed modifications resulting from environmental requirements.

G. Commission Approval of Resource Plans, Notification, and Filing of Amendments

136. In Appendices A, B, and C of this order, there are certain certification conditions and section 18 fishway prescription conditions that do not require the licensees to file certain plans or reports with the Commission, or that contemplate future changes to project facilities or operations without the opportunity for prior Commission review. Article 401 requires the licensees to file the plans and reports with the Commission for approval, notify the Commission of planned and unplanned deviations from the license requirements, and file amendment applications prior to making changes to project facilities or operations, as appropriate.

H. Use and Occupancy of Project Lands and Waters

137. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 408 allows the licensees to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

STATE AND FEDERAL COMPREHENSIVE PLANS

138. Section 10(a)(2)(A) of the FPA,[110] requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.[111] Under section 10(a)(2)(A), Commission staff identified and reviewed 21 comprehensive plans relevant to this project.[112] No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

139. In accordance with section 10 of the FPA[113] and the Commission's regulations, Commission staff evaluated GMP's and the City's record as licensees with respect to the following: (A) need for power; (B) safe management, operation, and maintenance of the project; and (C) conservation efforts.[114] We adopt staff's findings in each of the following areas.

A. Need for Power

140. To assess the need for power, staff looked at the needs in the operating region in which the project is located, which is the Northeast Power Coordinating Council's (NPCC) New England region of the North American Electric Reliability Corporation (NERC). NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report indicates the net internal demand in the NPCC's New England region is projected to increase at an annual rate of 0.1% from 2022 through 2031. Therefore, the project's power will continue to help meet the regional need for power.

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[110] 16 U.S.C. § 803(a)(2)(A).

[111] Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2022).

[112] The list of applicable plans can be found in Appendix E of the EA.

[113] 16 U.S.C. §§ 803(a)(2)(C), 808(a).

[114] In Order No. 513, we exempted licenses of minor projects, such as the Lower Great Falls Project, whose licenses waive sections 14 and 15 of the FPA, from the information requirements of 18 C.F.R. § 16.10 (2022). *See Hydroelectric Relicensing Reguls. Under the Fed. Power Act,* 54 Fed. Reg. 23,756 (June 2, 1989).

B. Safe Management, Operation, and Maintenance of the Project

141. Commission staff reviewed GMP and the City's record of management, operation, and maintenance of the Lower Great Falls Project pursuant to the requirements of 18 C.F.R. pt. 12 (2021) and the Commission's Engineering Guidelines. We conclude that the dam and other project works are safe, and that there is no reason to believe that GMP and the City cannot continue to safely manage, operate, and maintain these facilities under a subsequent license.

C. Conservation Efforts

142. Section 10(a)(2)(C) of the FPA[115] requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers in conserving electricity cost-effectively, and taking into account the published policies, restrictions, and requirements of state regulatory authorities. GMP and the City sell the project's energy to the wholesale market administered by the Independent System Operator of New England.

143. We conclude that, given the limits of GMP's and the City's ability to influence users of the electricity generated by the project, GMP and the City will operate the project in a manner that is consistent with section 10(a)(2)(C) of the FPA.

PROJECT ECONOMICS

144. In determining whether to issue a subsequent license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corporation, Publishing Paper Division*,[116] the Commission uses current costs to compare the costs of the project with the costs of the likely alternative source of power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

[115] 16 U.S.C. § 803(a)(2)(C).

[116] 72 FERC ¶ 61,027 (1995).

145. In applying this analysis to the Lower Great Falls Project, Commission staff considered three options: a no-action alternative, GMP's and the City's proposal, and the project as licensed herein.[117]

146. Under the no-action alternative, the project would continue to operate as it does now. The project has an installed capacity of 1.28 MW, a capacity benefit of 0.6 MW, and generates an average of 3,916.8 MWh of electricity annually.[118] The average annual project cost is about $231,196. The alternative source of power's annual cost to produce the same amount of energy and provide the same capacity benefit is $340,236, in 2022 dollars.[119] To determine whether the proposed project is currently economically beneficial, the project's annual cost is subtracted from the alternative source of power's cost. Therefore, the project costs $109,040 less than the alternative source of power's cost.

147. As proposed by GMP and the City, the levelized annual cost of operating the project is $369,789. The proposed project would generate an average of 3,441 MWh of energy annually and have a capacity benefit of 0.6 MW. The alternative source of power's cost to produce the same amount of energy and provide the same capacity benefit is $310,130, in 2022 dollars. Therefore, project power would cost $59,659 more than the alternative source of power's cost.

148. As licensed herein with mandatory conditions and Commission staff's measures, the levelized annual cost of operating the project is $431,044. The proposed project would generate an average of 3,450.2 MWh of energy annually and have a capacity benefit of 0.6 MW. The alternative source of power's cost to produce the same amount of energy and provide the same capacity benefit is $310,717, in 2022 dollars. Therefore, the project would cost $120,327 more than the alternative source of power's cost.

149. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system

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[117] Details of Commission staff's economic analysis for the project as licensed herein, and for the other two alternatives, are included in Appendix G of the EA.

[118] The term "capacity benefit" is used to describe the benefit a project receives for providing capacity to the grid, which may be in the form of a dependable capacity credit or credit for monthly capacity provided.

[119] The energy portion of the power cost is $63.27/MWh and is based on natural gas energy prices from the *Annual Energy Outlook 2022* published by the Energy Information Administration in March 2022. The capacity portion of the power cost is based on the annual cost of the hydro-equivalent natural gas-fired combined-cycle capacity, which staff estimates to be about $162.14/kilowatt-year.

(ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as by quickly adjusting power output to respond to rapid changes in system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil fuel-based generating stations and put them back on line. Additionally, although staff's analysis does not explicitly account for the effects inflation may have on the future cost of electricity, the fact that hydropower generation is a renewable resource and relatively insensitive to inflation compared to fossil-fueled generators is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether, and under what conditions, to issue a license.

150. Commission staff's analysis shows that the project as licensed herein would cost more to operate than the likely alternative source of power. It is the applicant who must decide whether to accept the license and any financial risk that it entails.

COMPREHENSIVE DEVELOPMENT

151. Sections 4(e) and 10(a)(1) of the FPA[120] require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

152. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Lower Great Falls Project as described in this order will not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of the license.

153. Based on our independent review and evaluation of the Lower Great Falls Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, we have selected the project as licensed herein, and find that it is best adapted to a comprehensive plan for improving or developing the Salmon Falls River.

[120] 16 U.S.C. §§ 797(e), 803(a)(1).

154. We select this alternative because: (1) issuance of a subsequent license will serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures will protect and enhance aquatic resources, water quality, federally listed species, and cultural resources; and (3) the 1.28 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

155. On October 19, 2017, the Commission established a 40-year default license term policy for licenses, effective as of October 26, 2017.[121] The Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located in the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the subsequent license.

156. Because none of the above exceptions apply in this case, a 40-year license for the Lower Great Falls Project is appropriate.

The Commission orders:

(A) The license is issued to Green Mountain Power Corporation and the City of Somersworth, New Hampshire (licensees) to operate and maintain the Lower Great Falls Hydroelectric Project for a period of 40 years, effective the first day of the month in which this order is issued. The license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensees' interests in those lands, described in the project description and the project boundary discussion of this order.

(2) Project works consisting of: (1) a 297-foot-long, 32-foot-high stone masonry and concrete dam that consists of the following sections:

[121] *Pol'y Statement on Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078 (2017) (Policy Statement).

(a) a 50-foot-long north abutment section with two eight-foot-wide, eight-foot-high low-level outlet gates that control flow into two seven-foot-diameter, 40-foot-long outlet pipes; (b) a 176-foot-long spillway section with a 5.25-foot-wide, 4-foot-high debris sluice gate; four-foot-high flashboards; and a crest elevation of 106.4 feet National Geodetic Vertical Datum of 1929 (NGVD 29) at the top of the flashboards; and (c) a 71-foot-long south abutment section with a 40.5-foot-wide, 20 foot-high intake structure equipped with four five-foot-wide, 10.5-foot-high steel frame gates and a trashrack with two-inch clear bar spacing; (2) an impoundment that has a surface area of 40.2 acres at an elevation of 106.4 feet NGVD 29; (3) an 8.5-foot-diameter, 120-foot-long steel penstock that bifurcates into a 5.3-foot-diameter, 85-foot-long section and a 7.6-foot-diameter, 85-foot-long section; (4) an 8.5-foot-diameter, 140-foot-long steel penstock that bifurcates into a seven-foot-diameter, 85-foot-long section and a 7.6-foot-diameter, 85-foot-long section; (5) a 46-foot-long, 30-foot-wide concrete and brick masonry powerhouse containing two 260-kilowatt (kW) F-type Francis turbine-generator units and two 380-kW F-type Francis turbine-generator units with a total installed capacity of 1.28 megawatts; (6) a 55-foot-long, 30-foot-wide tailrace; (7) a 4.16- kilovolt, 260-foot-long underground transmission line that connects the turbine-generator units to the local distribution grid; and (8) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: Sections A.1.0 through A.1.9 of Exhibit A filed on October 13, 2020.

Exhibit F: The following Exhibit F drawings filed on October 13, 2020:

Exhibit No.	FERC Drawing No.	Drawing Title	Filename Title[122]
F-1	4451-1001	Site Plan	Site Plan
F-2	4451-1002	Dam Plan, Section, and Downstream Elevation	Project Dam
F-3	4451-1003	Headworks Intake and Section	Headworks Intake and Section

[122] These exact drawing titles must be used in the filename when filing the electronic file format drawings required in ordering paragraph (B). Commission staff shortened the drawing titles due to filename character limits. Do not modify the titles as they appear on the drawings.

Exhibit No.	FERC Drawing No.	Drawing Title	Filename Title[122]
F-4	4451-1004	Powerhouse Floor and Sections	Powerhouse Floor and Sections
F-5	4451-1005	North Abutment Plan, Elevation, and Section	North Abutment

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibits A and F described above are approved and made part of the license. Exhibit G filed as part of the application for license does not conform to Commission regulations and is not approved.

(D) The following sections of the FPA are waived and excluded from the license for this minor project:

Sections 4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the FPA that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This license is subject to the conditions submitted by the Maine Department of Environmental Protection and the New Hampshire Department of Environmental Services 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 this order, respectively.

(F) This license is subject to the conditions submitted by the Secretary of the U.S. Department of the Interior under section 18 of the FPA, as those conditions are set forth in Appendix C to this order.

(G) The license is also subject to the articles set forth in Form L-9 (Oct. 1975), entitled, "Terms and Conditions of License for Constructed Minor Project Affecting Navigable Waters of the United States" (*see* 54 F.P.C. 1792, *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. *Administrative Annual Charges*. The licensees must pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with the provisions of the Commission's

regulations in effect from time to time, for the purposes of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 1.28 megawatts (MW). Under the regulations currently in effect, projects with an authorized installed capacity of less than or equal to 1.5 MW will not be assessed an annual charge.

Article 202. *Reservation of Authority to Require Financial Assurance Measures*. The Commission reserves the right to require future measures to ensure that the licensees maintain sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

Article 203. *Documentation of Project Financing.* At least 90 days before starting construction authorized by this license, the licensees must file with the Commission, for approval, the licensees' documentation for project financing. The documentation must show that the licensees have acquired the funds, or commitment for funds, necessary to construct, operate, and maintain the project in accordance with the license. The documentation must include, at a minimum, financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term, which provide evidence that the licensees have sufficient assets, credit and projected revenues to cover project construction, operation and maintenance expenses, and any other estimated project liabilities and expenses.

The financial statements must be prepared in accordance with generally accepted accounting principles and signed by an independent certified public accountant. The licensees must not commence project construction associated with the project before the filing is approved.

Article 204. *Exhibit F Drawings*. Within 45 days of the effective date of this license, as directed below, the licensees must file the approved exhibit drawings in electronic file format.

(1) The licensees must prepare digital images of the approved exhibit drawings in electronic format. Prior to preparing each digital image, the licensees must add the FERC Project-Drawing Number (i.e., P-4451-1001 through P-4451-1005) in the margin below the title block of the corresponding approved drawing. The licensees must separate the Exhibit F drawings from the other project exhibits, and **label and file them as Critical Energy Infrastructure Information (CEII) material under 18 CFR § 388.113.** The submission should consist of: (1) a public portion consisting of a cover letter; and (2) a CEII portion containing only the Exhibit F drawings. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit Number, Filename Title, date of this order, and file extension in the following format [P-4451-1001, F-1, Site Plan, MM-DD-YYYY.TIFF]. All digital images of the exhibit drawings must meet the following format specification:

IMAGERY:	black and white raster file
FILE TYPE:	Tagged Image File Format (TIFF), CCITT Group 4 (also known as T.6 coding scheme)
RESOLUTION:	300 dots per inch (dpi) desired, (200 dpi minimum)
DRAWING SIZE:	22" x 34" (minimum), 24" x 36" (maximum)
FILE SIZE:	less than 1 megabyte desired

Article 205. *Exhibit G Drawings*. Within 90 days of the issuance date of the license, the licensees must file, for Commission approval, a revised Exhibit G drawing enclosing within the project boundary all principal project works necessary for operation and maintenance of the project. The Exhibit G drawing should not include the previously licensed project boundary. The Exhibit G drawing should only include the project boundary described in the project description and the project boundary discussion of this order. The Exhibit G drawing should also include: (1) 0.2 acre of land associated with the access road to the powerhouse; and (2) 0.1 acre of land associated with a portion of the parking lot and land south of the apartment building located on the shoreline immediately downstream of the dam. The Exhibit G drawing should not include the 0.1 acre of land occupied by the apartment building located on the shoreline immediately downstream of the dam. The Exhibit G drawing must comply with sections 4.39 and 4.41(h) of the Commission's regulations.

Article 206. *As-built Exhibits*. Within 90 days of completion of construction of the facilities authorized by this license (e.g., eel and fish passage facilities), the licensees must file for Commission approval, revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 301. *Contract Plans and Specifications*. At least 60 days prior to the start of any construction, the licensees must file final design documents with the Secretary of the Commission, preferably through eFiling. The licensees must also submit two hard copies of the documents to the Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer. The design documents must include: final plans and specifications, supporting design report, Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensees may not begin construction until the D2SI – New York Regional Engineer has reviewed and commented on the documents, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 302. *Cofferdam and Deep Excavation Construction Drawings*. Should construction require cofferdams or deep excavations, the licensees must: (1) have a Professional Engineer who is independent from the construction contractor, review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of any cofferdams or deep excavations, the licensees must file the approved cofferdam and

deep excavation construction drawings and specifications, and the letters of approval with the Secretary of the Commission, preferably through eFiling. The licensees must also submit two hard copies of the documents to the Commission's Division of Dam Safety and Inspections – New York Regional Engineer.

Article 303. *Project Modification Resulting from Environmental Requirements.* If environmental requirements under this license require modification that may affect the project works or operations, the licensees must consult with the Commission's Division of Dam Safety and Inspections – New York Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. Commission Approval, Reporting, Notification, and Filing of Amendments.

(a) *Requirements to File Plans for Commission Approval*

Various conditions of this license found in New Hampshire Department of Environmental Services' (New Hampshire DES) section 401 water quality certification (certification) (Appendix B) and the U.S. Department of the Interior's (Interior) section 18 fishway prescription (Appendix C) require the licensees to prepare plans in consultation with other entities for approval, and to implement specific measures without prior Commission approval. The following plans must be submitted to the Commission for approval by the deadlines specified below:

New Hampshire DES Certification Condition No.	**Interior Section 18 Prescription Condition No.**	**Plan Name**	**Commission Due Date**
E-14		Water Quality Improvement Plan	July 18, 2023
E-12		Operation Compliance Monitoring Plan	July 18, 2023
	11.4	Final Fishway Operation and Maintenance Plan	April 18, 2024
E-15		Long Term Water Quality Monitoring Plan	November 17, 2027, and every five years thereafter

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription Condition No.	Plan Name	Commission Due Date
	11.7.1	Fish Passage Effectiveness Testing Plans	September 15, 2029

With each plan filed with the Commission, the licensees must include documentation that it developed the plan in consultation with the U.S. Fish and Wildlife Service (FWS), the Maine Department of Environmental Protection (Maine DEP), the Maine Department of Inland Fisheries and Wildlife (Maine DIFW), the Maine Department of Marine Resources (Maine DMR), New Hampshire DES, the New Hampshire Fish and Game Department (New Hampshire FGD), and the National Marine Fisheries Service (NMFS), and provide copies of any comments received, as well as its response to each comment. The Commission reserves the right to make changes to any plan filed. Upon Commission approval, the plan becomes a requirement of the license, and the licensees must implement the plan, including any changes required by the Commission. Any changes to the above schedule or plans require approval by the Commission before implementing the proposed change.

(b) *Requirements to File Reports and Schedules*

Certain conditions of the New Hampshire DES's certification (Appendix B) and Interior's section 18 fishway prescription (Appendix C) require the licensees to file reports and schedules related to compliance with the requirements of the license. Each such report and schedule must be filed with the Commission to ensure compliance with the license. These reports and schedules are listed in the following table:

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription Condition No.	Report Name	Commission Due Date
E-11c		Flow and Impoundment Management Report	June 1 each year of license term
	11.9.2	Upstream Eel Siting Survey Results	November 30, 2024

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription Condition No.	Report Name	Commission Due Date
	11.7.1	Interim Upstream Eel Passageway Effectiveness Monitoring Report	April 15, 2028
	11.7.1	Interim Downstream Eel Passageway Effectiveness Monitoring Report	April 15, 2028
	11.7.1	Interim Downstream Anadromous Fishway Effectiveness Monitoring Report	April 15, 2028
	11.7.1	Final Downstream Eel Passageway Effectiveness Monitoring Report	July 15, 2028
E-15		Long Term Water Quality Monitoring Report	February 28, 2029, and every five years thereafter
	11.7.1	Final Upstream Eel Passageway Effectiveness Monitoring Report	June 30, 2029
	11.7.1	Final Downstream Anadromous Fishway Effectiveness Monitoring Report	July 15, 2029
	11.7.1	Interim Upstream Anadromous Fishway Effectiveness Monitoring Reports	April 15, 2032

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription Condition No.	Report Name	Commission Due Date
	11.7.1	Final Upstream Anadromous Fishway Effectiveness Monitoring Reports	March 15, 2033

With each report filed with the Commission, the licensees must file documentation of any consultation with the FWS, Maine DEP, Maine DIFW, Maine DMR, New Hampshire DES, New Hampshire FGD, and NMFS, and provide copies of any comments received, as well as its response to each comment. The Commission reserves the right to require changes to project operation, facilities, or reporting requirements based on the information contained in the reports, agency comments, or any other available information.

(c) *Requirement to Notify the Commission of Planned, Temporary Modifications to Mandatory Condition Requirements*

The licensees may deviate from the mandatory conditions related to operation for short periods of time, of up to three weeks, without prior Commission approval after concurrence from the conditioning agencies. The licensees must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the deviation. Each report must include: (1) the reasons for the deviation and whether operations were modified; (2) the duration and magnitude of the deviation; (3) any environmental effects; and (4) documentation of approval from the conditioning agencies. For deviations from the mandatory conditions exceeding three weeks, the licensees must file an application and receive Commission approval prior to implementation.

(d) *Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting More than Three Hours or Resulting in Environmental Effects*

If there is any unplanned deviation from the mandatory conditions that lasts longer than three hours ***or*** results in visible environmental effects such as a fish kill, the licensees must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the incident. Each report must describe the incident, including: (1) the cause; (2) the duration and magnitude; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensees' response; (5) any

environmental effects; (6) documentation that the respective conditioning agencies were notified and any comments received, or, affirmation that no comments were received; and (7) any measures to be implemented to prevent similar incidents in the future.

(e) *Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting Three Hours or Less with No Environmental Effects*

For unplanned deviations lasting three hours or less that do not result in environment effects, the licensees must file an annual report by January 31, describing each incident up to one month prior to the reporting date, including: (1) the cause of the event; (2) the duration and magnitude of the deviation; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensees' response; (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies; and (6) a description of measures implemented to prevent similar deviations in the future. Any deviations that occur within the month prior to the reporting date should be included in the following year's report.

(f) *Requirement to File Amendment Applications*

Certain Maine DEP and New Hampshire DES certification conditions in Appendices A and B, and Interior fishway prescription conditions in Appendix C contemplate unspecified or conditional long-term changes to project operation or facilities for the purpose of mitigating environmental impacts. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. In any amendment request, the licensees must identify related project requirements and request corresponding amendments or extensions of time as needed to maintain consistency among requirements.

Article 402. *Reservation of Authority to Prescribe Fishways*. Authority is reserved to the Commission to require the licensees 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.

Article 403. *Downstream American Eel and Anadromous Fish Passage Facilities*. Within one year of license issuance, the licensees must file, for Commission approval, a downstream eel and fish passage plan that provides for the installation of downstream eel and fish passage facilities at the project for downstream migrating American eels and anadromous fish species. The downstream passage facilities must consist of a two-foot-high flume fixed to the crest of the spillway that would convey 35 cfs over the dam and drop fish approximately 19 feet to a 5.25-foot-deep plunge pool downstream of

the dam. The plan must be consistent with the requirements specified by the U.S. Department of the Interior's prescription conditions 11.10 and 11.11 (Appendix C). In addition, the plan must include an installation schedule for the downstream passage facilities to be operational by May 15 of the third year after license issuance, and must include provisions for operating the facilities annually from May 15 through November 15.

The licensees must prepare the plan after consultation with the U.S. Department of the Interior's Fish and Wildlife Service, the Maine Department of Environmental Protection, the Maine Department of Inland Fisheries and Wildlife, the Maine Department of Marine Resources, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, and the National Marine Fisheries Service. The licensees must include with the plan, documentation of consultation, 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 licensees 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 licensees do not adopt a recommendation, the filing must include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensees are notified by the Commission that the plan is approved. Upon Commission approval, the licensees must implement the plan, including any changes required by the Commission.

Article 404. *Trashrack Replacement*. By May 15, 2025, the licensees must replace the current trashrack having 2.0-inch clear bar spacing with a trashrack that has 0.75-inch clear bar spacing, to protect downstream migrating fish from turbine entrainment and mortality.

Pursuant to Article 301 of this license, the licensees must provide contract plans and specifications to the Division of Dam Safety and Inspections (D2SI)-New York Regional Engineer, and receive authorization prior to starting construction. Within 90 days of completing the trashrack replacement, the licensees must file as-built exhibits in accordance with Article 206 of this license.

Article 405. *Seasonal Restriction on Tree Removal.* To protect the federally listed northern long-eared bat during its active season (April 1 to October 31), the licensees must limit non-hazardous tree removal to the period of November 1 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).

Article 406. *Surveys for Small Whorled Pogonia.* To protect the federally listed small whorled pogonia, the licensees must employ a qualified botanist to conduct surveys for the small whorled pogonia prior to any ground-disturbing activities. If the species is not present, the licensees must file the results of the survey with the U.S. Fish and Wildlife Service (FWS) and the Commission, and can proceed with the ground-disturbing activities in a manner consistent with other terms and conditions of this license, including but not limited to Articles 301, 302, and 303.

If the species is present, the licensees must consult with the FWS to determine the need for any measures to protect the species. The licensees must file with the Commission documentation of their consultation with the FWS, including any measures proposed by the licensees and/or recommended by the FWS. The licensees must not conduct ground-disturbing activities until informed by the Commission that the requirements of this article have been fulfilled.

Article 407. *Programmatic Agreement and Historic Properties Management Plan*. The licensees must implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, 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 Green Mountain Power Corporation and the City of Somersworth, New Hampshire for the Continued Operation of the Lower Great Falls Hydroelectric Project in Strafford County, New Hampshire and York County, Maine (FERC No. 4551-024)," executed on October 28, 2022, and including but not limited to the Historic Properties Management Plan (HPMP) for the project. Pursuant to the requirements of this Programmatic Agreement, the licensees must file, for Commission approval, a HPMP within one year of issuance of this order. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensees must obtain approval from the Commission and the New Hampshire and Maine State Historic Preservation Officers, before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project's areas of potential effects.

Article 408. *Use and Occupancy*. (a) In accordance with the provisions of this article, the licensees must have the authority to 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 Commission approval. The licensees may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensees must also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other

condition imposed by the licensees for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensees must take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensees may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensees must require multiple use and occupancy of facilities for access to project lands or waters. The licensees must also ensure that, to the satisfaction of the Commission's authorized representative, the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensees must: (1) inspect the site of the proposed construction; (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site; and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensees may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensees' costs of administering the permit program. The Commission reserves the right to require the licensees to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensees may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kilovolts or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project

impoundment. No later than January 31 of each year, the licensees must file with the Commission a copy of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. No report filing is required if no conveyances were made under paragraph (c) during the previous calendar year.

(d) The licensees may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensees must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date, requires the licensees to file an application for prior approval, the licensees may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensees must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensees must determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an

approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed must not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee must take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee must not unduly restrict public access to project lands and waters.

(4) The Commission reserves the right to require the licensees to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project must be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensees under this article must not apply to any part of the public lands and reservations of the United States included within the project boundary.

Article 409. *Recreation*. The licensees must notify the Commission if the City's Riverwalk Park or Great Baxter Mills, LLC's private picnic area and car-top boat launch cease operation. Authority is reserved to the Commission to require the licensees to implement additional recreation measures if in the public interest.

(H) The licensees must serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(I) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 825*l*, and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2021). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensees' failure to file a request for rehearing constitutes acceptance of this order.

By the Commission. Commissioner Danly is concurring with a separate statement attached.

(S E A L)

Kimberly D. Bose,
Secretary.

Form L-9
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED MINOR PROJECT AFFECTING NAVIGABLE WATERS OF THE UNITED STATES

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and

supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of

such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 7. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 8. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 9. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 10. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 11. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 12. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 13. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of

such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 14. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon the request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 15. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 16. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 17. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other

obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 18. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 19. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certificate Conditions
Issued by the Maine Department of Environmental Protection
Filed April 6, 2022

The Applicants have provided sufficient evidence and the Department finds and determines that as the Applicants propose to operate the Project the DO concentrations in the Salmon Falls River downstream of the Lower Great Falls dam, specifically in the bypass reach and tailrace, will meet or exceed five ppm standard 30-day average concentration standard of 6.5 ppm at 22 degrees centigrade. Therefore, the Salmon Falls River downstream of the dam meets Class C numeric water quality standards for DO. Further, the Applicants have provided sufficient evidence and the Department finds and determines that as the Applicants propose to operate the Project the DO concentrations in the Lower Great Falls impoundment can reasonably be expected to meet or exceed state water quality standards for DO, provided the Applicants comply with the following Conditions, in addition to the Standard Conditions attached to this approval:

A. Upon issuance of a new FERC license, the Applicants shall implement the Water Quality Mitigation and Enhancement Plan.

B. Five years after implementation of the Water Quality Mitigation and Enhancement Plan, the Applicants shall consult with the Department and review the effectiveness of the Plan. If implementation of the Plan has not resulted in compliance with the State's water quality standards for dissolved oxygen, the Applicants shall submit a revised Plan to the Department for review and approval, and then implement the revised Plan to bring operation of the Project into compliance with these water quality standards.

Therefore, the Department approves the water quality certification of the City of Somersworth and Green Mountain Power Corporation and certifies, pursuant to Section 401 of the Clean Water Act, that there is a reasonable assurance that the continued operation of the Lower Great Falls Hydroelectric Project, as described above, will comply with the applicable Class C water quality standard for dissolved oxygen.

Standard Conditions

1. Noncompliance. Should the project be found, at any time, not to be in compliance with any of the conditions of this approval, or should the project be operated in any way other than specified in the application or supporting documents, as

modified by the conditions of this approval, then the terms of this approval shall be considered to have been violated.

2. Inspection and Compliance. Authorized representatives of the Commissioner or the Attorney General shall be granted access to the project at any reasonable time for the purpose of inspecting the operation of the project and assuring compliance with the conditions of this approval.

3. Assignment of Transfer of Approval. This approval shall expire upon the assignment or transfer of the property covered by this approval unless written consent to transfer this approval is obtained from the Commissioner. To obtain approval of transfer, the licensee shall notify the Commissioner 30 days prior to assignment or transfer of property which is subject to this approval. Pending Commissioner determination on the application for a transfer or assignment of ownership of this approval, the person(s) to whom such property is assigned or transferred shall abide by all of the terms and conditions of this approval. To obtain the or Commissioner's approval of transfer, the proposed assignee or transferee must demonstrate the financial capacity and technical ability to: (1) comply with all terms and conditions of this approval; and (2) satisfy all other applicable statutory criteria.

   A "transfer" is defined as the sale or lease of property which is the subject of this approval or the sale of 50% or more of the stock of or interest in a corporation or a change in a general partner of a partnership which owns the property subject to this approval.

APPENDIX B

Water Quality Certificate Conditions
Issued by the New Hampshire Department of Environmental Service
Filed April 4, 2022

CERTIFICATION CONDITIONS

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

E-1. **Effective Date and Expiration of Certification:** This certification shall become effective on the date of issuance and shall remain effective for the term of the federal license permit. Should the federal authority deny a license or permit, the certification become null and void.

E.2. **Conditions in Federal License or Permit:** Conditions of this certification shall become conditions of the federal license or permit (U.S.C. § 1314(d)).

(For an explanation and citations, see Fact C-2 and Finding D-1.)

E.3 **Compliance with Water Quality Standards:** The Activity shall not cause or contribute to a violation of New Hampshire surface water quality standards.

(For an explanation and citations, see Facts Fact C-2, C-55, and Finding D-14.)

E.4. **Proposed Modifications to the Activity:** The Applicant shall consult with and receive prior written approval from NHDES regarding any proposed modifications to the Activity that could have a significant or material effect on the findings or conditions of this certification, including any changes to operation of the Activity. If necessary, to assure compliance with New Hampshire surface water quality standards and associated management objectives, NHDES may alter or amend this certification in accordance with condition E-5.

(For an explanation and citations, see Fact C-2 and Finding D-11.)

E.5. **Modification of Certification**: The conditions of this certification may be altered or amended at any time by NHDES to assure compliance with New Hampshire surface water quality standards and associated management objectives, when authorized by law, and, if necessary, after notice and opportunity for hearing.

(For an explanation and citations, see Fact C-2 and Finding D-11.)

E.6. **Reopening of License**: NHDES reserves the right to request, at any time, that FERC reopen the license to consider modifications to the license to assure compliance with New Hampshire surface water quality standards.

E-7. **Compliance Inspections:** In accordance with applicable laws, the Applicant shall allow NHDES to inspect the Activity and affected surface waters to monitor compliance with the conditions of this certification.

(For an explanation and citations, see Fact C-2 and Finding D-11.)

E.8. **Transfer of Certification:** Should this certification be transferred to a new owner, contact information for the new owner (including name, address, phone number and email) shall be provided to NHDES within 30 days of the transfer.

E.9 **NHDES Water Use Registration and Reporting:** The Applicant shall register, measure, and report all withdrawals and discharges with the NHDES Water Use Registration and Reporting Program (WURRP) in accordance with RSA 488:3 and its supporting regulations in Env-Wq 2102 and submit, if necessary, a water conservation plan in accordance with Env-Wq 2101.24.

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-47.)

E.10 **Flow / Impoundment Management:** The following requirements (items a. through e.) may be temporarily modified if required by operating emergencies beyond the control of the Applicant, as specified below, or as allowed in the approved Flow/Impoundment Compliance Monitoring Plan (FICMP) that is required by Condition E-12 of this Certification.

a. **Instantaneous Run-of-River Flow:** The Applicant shall operate the Activity in an instantaneous run-of- river mode whereby inflow to the Project equals outflow from the Project at all times and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Applicant or for short periods upon mutual agreement between NHDES, the New Hampshire Fish and Game Department (NHFGD), the U.S. fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the Maine Department of Environmental Protection (MEDEP), the Maine Department of Marine Resources (MDMR) and the Maine Department of Inland Fisheries and Wildlife (MEDIFW).

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-41.)

b. Bypass Reach Conservation Flows: The Applicant shall comply with the following bypass reach conservation flow requirements.

1. The Applicant shall provide a minimum continuous conservation flow in the bypass reach of 37 cfs, or inflow, whichever is less. Subject to approval by NHDES and NHFGD, this criterion may be modified as part of the USFWS's Fish Passage Prescription (see Condition E-13) in order to conform to the USFWS's fish passage design guidelines[1], or other guidelines acceptable to the USFWS.

2. The manner in which the bypass flow is released to the bypass reach shall be acceptable to NHDES, NHFGD and USFWS. The Applicant shall provide evidence within 60 days of receiving a written request from NHDES (or other date acceptable to NHDES), that demonstrates, to the satisfaction of NHDES and NHFGD, that the bypass reach conservation flow is being provided. Such evidence may include, but is not limited to, hydraulic calculations and instream flow measurements.

3. The method and supporting information for passing the bypass conservation flows into the bypass reach, including any future modifications, shall be included in the Flow / Impoundment Compliance Monitoring Plan (see Condition E-12).

4. Flow in the bypass reach shall comply with New Hampshire surface water quality criteria, including, but not limited to, dissolved oxygen (Env-Wq 1703.07 – see Fact C-30).

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-45.)

c. Impoundment Water Level: The target impoundment water elevation under normal operating conditions shall be the top of the flashboards (elevation 106.4 feet NGVD 29) plus any additional elevation required to pass the bypass reach conservation flow. The Applicant shall minimize the magnitude and frequency of fluctuations in the impoundment to the maximum extent practicable and shall not draw the water level in the impoundment down for the purpose of generating power. This requirement may be modified upon mutual agreement between NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW. If requested by NHDES, the

[1] USFWS (U.S. Fish and Wildlife Service). 2019. Fish Passage Engineering Design Criteria. USFWS, Northwest Region R5, Hadley, Massachusetts. 135 pages + Appendices.

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 90 days (or other date acceptable to NHDES) of when the NHDES issues the written request. The Applicant shall then implement the NHDES approved plan.

(For an explanation and citations, see Fact C-2 and Findings D-5, D-11 and D-42.)

d. **Impoundment Refill Procedure:** When refilling the impoundment after drawdown for maintenance or emergencies, the Applicant shall release 90% of the inflow downstream to the Salmon Falls River and utilize the remaining 10% of inflow to refill the impoundment. During impoundment refill, the bypass reach conservation flow specified in Condition E-10b shall be maintained. This refill procedure may be modified upon mutual agreement between NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW.

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-43.)

e. **Drawdown Procedure for Scheduled Maintenance:** When drawing the water level in the impoundment down for scheduled maintenance, the Applicant shall lower the impoundment water level no more than six inches per day. During impoundment drawdown, the bypass reach conservation flow specified in Condition E-10b shall be maintained. This drawdown procedure may be modified upon mutual agreement between NHDES and NHFGD

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-44.)

E.11. **Flow/Impoundment – Notification and Annual Report:** The Applicant shall comply with the following notification and reporting requirements:

a. If the Activity causes a deviation from the flow/ impoundment management requirements in Condition E-10, the Applicant shall notify NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW 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 E-10.

b. Within 45 days after each incident, the Applicant shall submit a report to NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW 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.

c. By April 1 of each year (beginning the first April after the date the FERC license is reissued), the Applicant shall submit to NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW 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 E-10. Where excursions occurred, the summary shall indicate when the excursion occurred, the duration of the excursion and a description of corrective actions taken to prevent such excursions from reoccurring.

(For an explanation and citations, see Fact C-2 and Finding D-11)

E.12 **Flow/Impoundment Compliance Monitoring Plan (FICMP):** Within 90 days of license issuance (or other date acceptable to NHDES) the Applicant shall develop, file and implement a flow and impoundment level monitoring and compliance plan (FICMP) that, as a minimum, includes the following:

a. a description of the level of manual, automatic, on-site and remote operation;

b. 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 E-10;

c. a description of how the bypass conservation flow will be maintained during scheduled drawdowns and the minimum impoundment level that will pass the conservation flows (including calculations);

d. 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;

e. set point elevations for turning turbines on and off;[2]

f. procedures for maintaining and calibrating monitoring equipment;

g. rating curves and calculations for all methods of releasing flow downstream (including a working excel spreadsheet);

h. 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., conservation flows in the bypass reach, spillage and turbine discharge), and impoundment levels.

The FICMP, including any proposed revisions, shall be developed in consultation with NHDES, NHFGD, USFWS, MEDEP, MDMR and MEDIFW, and submitted to NHDES for review and approval. The FICMP shall be kept up-to-date so that it reflects current operation. When revisions are made, the Applicant shall submit the updated FICMP to NHDES for approval within 10 days (or other date acceptable to 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 date acceptable to NHDES) of receiving a written request from NHDES to update the FICMP. The Applicant shall implement the approved FICMP.

(For an explanation and citations, see Fact C-2 and Findings D-11 and D-46.)

E-13. **Fish Passage:** The Applicant shall comply with the USFWS' "Preliminary Prescription for Fishways" (which includes prescriptions for upstream and downstream passage for anadromous fish and American eel - see Finding C-59), and any modifications made to the preliminary prescriptions that are acceptable to the USFWS, NHFGD and NHDES. Unless modifications are made that are acceptable to USFWS, NHFGD and NHDES, upstream and downstream fish passage protective measures shall be operational during the periods shown in the following table.

[2] Set point elevations for providing conservation 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.

Species	Upstream Migration Period	Downstream Migration Period
Alosines, American shad, river herring	April 15 – July 15	June 1 – November 15
American eel	May 1 – October 31	August 15 – November 15

(For an explanation and citations, see Fact C-2, and Findings D-11, and D-48 through D-54.)

E-14. **Water Quality Improvement Plan (WQIP):** Within 90 days of License issuance by FERC (or other date acceptable to NHDES) the Applicant shall submit a WQIP to NHDES for approval. The goal of the WQIP is for Project influenced waters (i.e., the Project impoundment, bypass reach and tailrace) to comply with New Hampshire surface water quality standards for parameters that can be influenced by the Project. If the riverine segment immediately upstream (and beyond the influence) of the Project impoundment is not meeting water quality standards for any of those parameters, the goal is for water quality in the Project influenced waters to not be any worse than in the upstream riverine segment. Parameters that can be influenced by the Project include, but are not limited to, DO, temperature, pH, nutrients, chlorophyll-a and secchi disk. The WQIP shall include proposed measures to achieve the goals, a plan to monitor the effectiveness of the improvement measures and a schedule for measure implementation, monitoring to determine the effectiveness of the implemented measures, and submittal of reports to NHDES for approval that includes a summary of the implementation measures, monitoring results (with supporting information including a working spreadsheet if requested by NHDES) and recommendations for next steps. The Applicant shall then implement the approved WQIP. NHDES reserves the right to require a new or updated WQIP should improvement measures not prove to be effective and/or new water quality issues arise. In such cases, the Applicant shall submit a new or updated WQIP within 90 days (or other date acceptable to NHDES) of when the Applicant receives a written request from NHDES to submit a new or updated WQIP for NHDES approval. The Applicant shall incorporate any changes to Project operation included in the approved WQIP, in the Flow/Impoundment Compliance Monitoring Plan (FICMP) and submit the updated FICMP to NHDES for approval as specified in Condition E-12.

(For an explanation and citations, see Fact C-2 and Findings D-11, D-14 and D-38.)

E-15. **Long Term Water Quality Monitoring and Reporting:** Unless otherwise authorized by NHDES, the Applicant shall conduct water quality monitoring in the Salmon Falls River every five years beginning the fifth year after issuance of the

FERC license and ending five years prior to the expiration of the issued license. The purpose of the monitoring is to: 1) determine the future effects of Project operation during the duration of the issued license, both spatially and temporally (in terms of flow, impoundment elevation and power generation) on water temperature and dissolved oxygen (mg/L and percent saturation); 2) to compare results to New Hampshire surface water quality standards; and 3) to determine if additional changes in Project operation are necessary to comply with surface water quality standards.

At least 90 days prior to monitoring in each year monitoring is conducted, the Applicant shall submit a monitoring and reporting plan to NHDES for review and approval that describes, in detail, how, when and where monitoring will be conducted, and results reported. The Applicant shall then implement the NHDES approved plan. Unless otherwise authorized or directed by NHDES, the 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 times when the Project is, and is not, generating power. Continuous (i.e., every 15 minutes) monitoring of temperature and dissolved oxygen (mg/L and percent saturation) shall be conducted in the riverine reach just upstream of the Project impoundment, at the deep spot of the Project impoundment, the Project tailrace and the Project bypass reach 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, bypass reach flow and generation shall also be provided.

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 (in terms of inflow and flow in the bypass reach and tailrace, impoundment elevation and power generation) on surface water quality and if New Hampshire surface water quality standards are met. 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. 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 MS Excel workbook or other database acceptable to NHDES. 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.

Should monitoring indicate that water quality standard excursions persist, the Applicant shall consult with NHDES and, if requested by NHDES in writing,

submit a new or updated Water Quality Improvements Plan (WQIP) in accordance with Condition E-14.

(For an explanation and citations, see Fact C-2, and Findings D-11, D-14, D-38 and D-39)

E-16. **Invasive Species Control**: If NHDES notifies the Applicant in writing that invasive species control efforts are needed in the river segments impacted by Project operation, the Applicant shall assist by seeking funding for implementation of control efforts and by temporarily modifying Project operation as necessary to facilitate those control efforts.

(For an explanation and citations, see Fact C-2, and Findings D-11 and D-55.)

APPENDIX C

U.S. Department of the Interior
Section 18 Fishway Prescription
Filed April 16, 2021

10 RESERVATION OF AUTHORITY TO PRESCRIBE FISHWAYS

In order to allow for the timely implementation of fishways, including effectiveness measures, and pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Interior, reserves their authority to prescribe the construction, operation, and maintenance of fishways at the Lower Great Falls Hydroelectric Project, FERC Project No. 4451, as appropriate, including, but not limited to, measures to determine, ensure, or improve the effectiveness of such fishways prescribed in section 11 below.

11 PRELIMINARY PRESCRIPTION FOR FISHWAYS

Pursuant to Section 18 of the FPA, as amended, the Secretary of the Interior, as delegated to the Service, hereby exercises her authority to prescribe the construction, operation and maintenance of such fishways as deemed necessary, subject to the procedural provisions contained above.

The Department's Preliminary Prescription for Fishways is the result of consultation among the Service, NHFGD, MEDIFW, MDMR, and the Licensees. Fishways shall be constructed, operated, and maintained to provide safe, timely, and effective passage for river herring (alewife and blueback herring), American shad, and American eel at the Licensees' expense.

11.1 UPSTREAM AND DOWNSTREAM PASSAGE

The Licensees shall construct, operate, maintain, and periodically test the effectiveness of fishways for river herring, American shad, and American eel (collectively, the "target species") as described below. The fishways will be designed, constructed, maintained, and operated (which includes project operations) to safely, timely, and effectively pass the target species upstream and downstream of the Project.

11.2 DESIGN POPULATIONS

The American eel is a panmictic species; therefore, there are no subpopulations. All individuals are genetically, behaviorally, and physically representative of the entire worldwide population, and offspring spawned in the Sargasso Sea have the same random chance of ending up in any watershed between Florida and Maine. Based on monitoring data at the downstream South Berwick eelway, we expect thousands of juvenile eel to use

upstream facilities at the Project. The type of eelway(s) likely to be used at the site has been shown to be capable of passing nearly 20,000 eels;[1] therefore, the Service expects it can accommodate the annual movement of eels on the Salmon Falls River.

As noted in Section 4.4.2, the anticipated alosine population for the Project's impoundment is approximately 1.595 American shad and 12,425 river herring. A standard 4-foot-wide Denil fish ladder has an annual biological capacity of approximately 25,000 adult American shad, 12,000 Atlantic salmon, or 200,000 adult river herring (USFWS 2019). Given these capacities, a single 4-foot Denil ladder (or equivalent), installed at a slope of 1:8 (vertical: horizontal) or milder, should be sufficient to pass the design populations of the target species for the foreseeable future.

11.3 FISH PASSAGE OPERATING PERIODS

Fishways shall be operational during the migration windows for target species present. The migratory season for diadromous fish has been studied for the major rivers of the Northeast (Facey and Van Den Avyle 1987, page 7; Mullen et al. 1986; Weiss-Glanz et al. 1986; Loesch 1987; ASMFC 2000, page 8; Saunders et al. 2006, page 539; ASMFC 2009, page 9; Shepard 2015; Eyler et al. 2016). The season depends on geographic location, water temperature, river flow, and other habitat cues. These dates may change based on new information, evaluation of new literature, and agency consultation. Based on data from nearby watersheds, approved fish passage protective measures shall be operational during the migration windows identified in Table 1 (below).

Table 1. Summary of migration periods for which fish passage will be provided.

Species	**Upstream Migration Period**	**Downstream Migration Period**
Alosines: American shad, river herring	April 15 – July 15	June 1 – November 15
American eel	May 1 – October 31	August 15 – November 15

11.4 FISHWAY OPERATION AND MAINTENANCE PLAN

Within 12 months of license issuance, the Licensees will prepare and provide to the Service, NHFGD, MEDIFW, MDMR, and the National Marine Fisheries Service, a Fishway Operation and Maintenance Plan (FOMP) covering all operations and maintenance of the upstream and downstream fish passage facilities in operation at the time. The FOMP shall include:

[1] In 2016, over 18,000 juvenile eels were counted passing an eel ramp at the Holyoke Project (FERC No. 2004).

a. a schedule for routine fishway maintenance to ensure the fishways are ready for operation at the start of the migration season;
b. procedures for routine upstream and downstream fishway operations; and
c. procedures for monitoring and reporting on the operation and maintenance of the facilities as they affect fish passage.

The FOMP shall be submitted to the Service for review and approval prior to submitting the FOMP to the Commission for its approval. Thereafter, the Licensees will 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 shall amend the FOMP within 30 days of the request and send a copy of the revised FOMP to the Service. Any modifications to the FOMP by the Licensees will require the approval of the Service prior to implementation and prior to submitting the revised FOMP to the Commission for its approval.

The Licensees shall provide information on fish passage operations and project generating operations that may affect fish passage, upon written request from the Service or other resource agencies. Such information shall be provided within 10 calendar days of the request, or upon a mutually agreed upon schedule.

11.5 INSPECTION

The Licensees shall provide access to the project site and to pertinent project records to Service personnel and its designated representatives, for the purpose of inspecting the fish passage facilities and to determine compliance with the Prescription.

11.6 SCHEDULING

Timely construction, operation, maintenance, and measures for upstream and downstream fish passage, including studies and evaluations, are necessary to ensure their effectiveness and to achieve restoration goals. Therefore, the Licensees shall notify, and obtain approval from, the Service for any extension to comply with prescribed conditions.

11.6.1 IMPLEMENTATION

The Licensees shall develop design plans for fishways and submit these plans to the Service and other resource agencies for review and approval during conceptual, 30%, and 90% design stages. This will ensure safe, timely, and effective fishway passage is designed and constructed on a timely schedule to meet the implementation dates indicated below. Designs shall be consistent with the 2019 Fish Passage Engineering Design Criteria Manual (USFWS 2019, entire) or updated version.

The Licensees shall adhere to the following dates for installing fishways:

a. The upstream anadromous fish systems are to be operational no later than March 15 of the fourth calendar year after permanent volitional upstream fishways for American shad and river herring become operational at the downstream Rollinsford Hydroelectric Project (FERC No. 3777).

b. The downstream anadromous fish and downstream eel passage system is to be operational within three years of license issuance.

c. The upstream eel passage systems are to be operational after the upstream anadromous fish systems are installed, within four years of license issuance.

For upstream and downstream anadromous fish and downstream eel passage systems, the Licensees shall adhere to the following design milestone schedule:

a. conceptual designs 15 months prior to the start of construction;

b. 30% design 12 months prior to the start of construction; and

c. 90% design and Basis of Design Report three months prior to the start of construction.

The Licensees shall adhere to the following design milestone schedule for the upstream eel passage system(s):

a. 30% designs four months prior to the start of construction, and following delivery of the eelway siting survey report; and

b. 90% designs two months prior to the start of construction.

Following approval by the Service and other resource agencies, the Licensees shall submit final design plans to the Commission for its approval and prior to the commencement of fishway construction activities. Once the fishways are constructed, final as-built drawings that accurately reflect the Project as constructed shall be filed with the Service, the other resource agencies, and the Commission.

11.7 FISH PASSAGE EFFECTIVENESS MEASURES

Effectiveness testing of both upstream and downstream American eel and anadromous fish passage is critical to evaluating passage success, diagnosing problems, determining when fish passage modifications are needed, and what modifications are most likely to be effective over the term of the license.

11.7.1 FISHWAY EFFECTIVENESS MONITORING PLAN

The Licensees must develop a Fishway Effectiveness Monitoring Plan (FEMP) in consultation with, and requiring approval by, the Service. The FEMP will contain plans for ensuring: (1) the effectiveness of upstream anadromous, upstream eel, downstream anadromous, and downstream eel passage measures required pursuant to Section 11.8 through 11.11; and (2) that the minimum bypass flow that provides safe, timely, and effective downstream passage to emigrating diadromous species (i.e., does not strand fish). The FEMP shall be submitted to FERC for approval six months prior to the implementation dates for installing upstream anadromous fish systems specified in Section 11.6.1.

The Licensees shall begin implementing effectiveness testing measures at the start of the first migratory season after a fishway(s) are operational and shall conduct quantitative fish passage effectiveness testing and evaluation for a minimum of two years. If the Service requests a modification of the FEMP, the Licensees shall amend the FEMP within 30 days of the request and send a copy of the revised FEMP to the Service and resource agencies. Any modifications to the FEMP by the Licensee will require approval by the Service prior to implementation.

The Licensee will submit yearly interim study reports to the Service following the conclusion of each study year. The interim reports for upstream passage studies will be submitted to the Service by February 15 following each study year. The final study report will be submitted to the Service within six months after the completion of the study. The final study report will include methods, data analysis, results, an assessment of any factors or potential problems hindering passage effectiveness, and provide recommended modifications to achieve safe, timely and effective passage. In conjunction with submitting the final study report, the Licensee will also provide electronic copies of all data collected from studies to the Service.

The Licensees shall meet annually, in the late fall, with the Service and the other resource agencies to report on the occurrence of fish passage maintenance and operations, monitoring results, and review of the operating plan. Any changes and planned maintenance must be completed prior to the start of the next migratory season.

11.8 UPSTREAM ANADROMOUS PASSAGE

1. The Licensees shall 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, these fishways could satisfy the standard of safe, timely, and effective: a technical fishway from the Project's tailrace, a technical fishway at the Project's dam, or a nature-like

fishway (NLF) at the Project's dam.[2] At the lowest end of its operating range, any NLF should be designed to meet Service criteria for depth, velocity, and pool size (USFWS 2019) while passing the minimum required flows in the bypass; additional bedrock modifications may be necessary to extend the operating range during periods of moderate spill.

2. The size of the fishway shall accommodate the anticipated production potential of the Lower Great Falls impoundment: 12,425 river herring, 1,595 shad, and approximately 500 resident or target species. A standard 4-foot-wide Denil fish ladder is estimated to have an annual biological capacity of 25,000 adult American shad, 12,000 Atlantic salmon, or 200,000 adult river herring (USFWS 2019). Given these capacities, a single 4-foot Denil ladder (or equivalent), installed at a slope of 1:8 (vertical:horizontal) or milder, should be sufficient to pass the design populations of target species.

3. The design elements (e.g., slope, pool/slot size, attraction water) of the fishway shall ensure successful passage of river herring and American shad. The fishway shall operate for the full range of design flows based on the migratory season for each species in accordance with provisions of Section 11.3.

4. The fishway shall be constructed and operational by March 15 of the fourth calendar year after permanent volitional upstream fishways for American shad and river herring become operational at the downstream Rollinsford Hydroelectric Project (FERC No. 3777).

5. Fishway design shall be consistent with the Service's 2019 Fish Passage Engineering Design Criteria Manual (USFWS 2019, entire) or updated version.

Justification

The Salmon Falls River, in the vicinity of the Project, once supported runs of diadromous species including alosines (Odell et al. 2006; Old Berwick Historical Society 2020) and existing FMPs call for restoring access to historical spawning and rearing habitat. Currently, alosines are provided freshwater access to the Salmon Falls River via the South Berwick Dam at the head-of-tide. Approximately 16,418 river herring passed South Berwick in 2019, and 24,571 river herring passed South Berwick in 2018 (M. Dionne, NHFGD, personal communication, May 22, 2020).

The Offer of Settlement for the downstream Rollinsford Hydroelectric Project includes provisions for interim upstream passage for alosines via trap and track and the future

[2] Nature-like fishways (NLF) are structures designed to mimic the natural functions and/or aesthetics of a river; NLF can include, but are not limited to, simple bedrock modification, weir placement, rock ramps, etc.

installation of volitional passage facilities.[3] The Lower Great Fall Project will impede migratory movement of river herring and American shad in the Salmon Falls River. Fish passage at the Lower Great Falls Project, along with the implementation of passage measures at the downstream Rollinsford Project will provide approximately 4.1 river miles of available habitat to anadromous fish in the Salmon Falls River.

11.9 UPSTREAM AMERICAN EEL PASSAGE

1. The Licensees shall construct, operate, and maintain upstream fish passage facilities that provide safe, timely, and effective upstream passage for American eel.
2. In order to determine proper siting of the upstream eelway(s), the Licensees shall conduct a two-season upstream eel ramp siting survey beginning the first full passage season after license issuance. Based on results of that survey, the Licensees shall, in consultation with the Service and other resource agencies, determine optimal locations for siting permanent upstream eelway(s).
3. Permanent eelway(s) shall be operational no later than May 1 of the second calendar year after the siting surveys are complete.
4. The upstream facilities shall be designed in consultation with the resource agencies, and the resource agencies shall review the 30% and 90% drawings.
5. The designs shall be consistent with the Service's 2019 Fish Passage Engineering Design Criteria Manual (USFWS 2019, entire) or updated version.

Justification

Dedicated upstream eel passage is necessary to provide access to rearing habitat upstream of the Project throughout the migratory eel passage season. Count data at South Berwick, as well as a study performed as part of the Rollinsford Project's licensing proceeding (Gomez and Sullivan 2019), and Appendix D of the Project's FLA, document eel are downstream of the Lower Great Falls Dam. Upstream migrating juvenile eel can be effectively passed at hydroelectric projects (Solomon and Beach 2004, entire).

Because the Project includes a bypass reach that will have a continuous flow, there are two potential areas of attraction for up-migrating eel: in the vicinity of the powerhouse; and at the base of the dam. Therefore, more than one eelway may be needed to provide effective passage. The most suitable location(s) for permanent eelway(s) should rely on empirical data which will be collected during the siting surveys.

[3] Accession Number: 20210305-5218.

11.10 DOWNSTREAM AMERICAN EEL PASSAGE

1. The Licensees shall construct, operate, and maintain a downstream eel passage and protection system that provides safe, timely, and effective downstream passage for American eel.
2. The Licensees shall implement, as an interim measure, targeted nighttime turbine shutdowns to protect emigrating eel during the first year of license issuance. Turbine shutdowns shall occur from dusk to dawn for three consecutive nights following rain accumulations of 0.50 inch or more, as measured at the Project, over a 24-hour period. Turbine shutdowns should occur during the duration of the downstream eel passage season in accordance with provisions of Section 11.3.
3. The Licensees shall implement permanent downstream eel passage and protection measures within three years of license issuance.
4. Pursuant to the conditions provided herein, the Licensee shall develop a plan to provide permanent downstream eel passage and protection, in conformance with the Downstream Implementation Schedule specified in 11.6.1. The plan, including the design of permanent eel passage facilities and/or operational measures and permanent downstream alosine passage, shall be developed in consultation with, and require approval by, the Service

Justification

Dedicated downstream fish passage facilities are necessary to protect diadromous species emigrating past the Project. State-led fisheries surveys as well as an upstream eel passage assessment performed at Lower Great Falls in 2020 (Gomez and Sullivan 2020) indicate eel are present upstream of the Project's dam. The eel population inhabiting the river upstream of the Project will increase over time as upstream eelway(s) become operational. Absent passage and protection measures, outmigrating silver eel are be susceptible to impingement and/or entrainment. Estimated project-specific survival rates indicate eel would sustain high mortality rates should they pass through the Project's turbines. 14 Facilities and/or measures to provide safe downstream passage for eel are needed as they migrate through the Project on their spawning migration to the Sargasso Sea. Downstream migrating adults and juvenile diadromous fish can effectively be protected from project operation impacts that result in injury and mortality (NMFS 2012; USFWS 2019).

11.11 DOWNSTREAM ANADROMOUS FISH PASSAGE

1. The Licensees shall construct, operate, and maintain a downstream passage and protection system that provides safe, timely, and effective downstream passage for both spent juvenile and adult anadromous fish.
2. The Licensees shall implement permanent downstream alosine passage and protection measures within three years of license issuance.
3. Pursuant to the conditions provided herein, the Licensees shall develop a plan to provide permanent downstream alosine passage and protection, in conformance with the Downstream Implementation Schedule specified in 11.6.1. The plan, including the design of permanent downstream alosine passage and permanent eel passage facilities and/or operational measures, shall be developed in consultation with, and require approval by, the Service.

Justification

Dedicated fish passage facilities are necessary to protect diadromous species emigrating past the Project. Downstream migrating adult and juvenile alosines are exposed to project-related impacts (Franke et al. 1997). Estimated project-specific survival rates indicate alosines would sustain a high level of entrainment and mortality should they pass through the Project's turbines. 15 Unless river flows are being spilled at the Project, or fish utilize the minimum flow cutout in the flashboards as a means of passage, there is no alternative downstream route of passage. Therefore, facilities to provide safe downstream passage for alosines are needed as they emigrate through the Project on their way back out to sea. Downstream emigrating adults and juvenile diadromous fish can effectively be protected from project operation impacts that result in injury and mortality (NMFS 2012; USFWS 2019).

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Green Mountain Power Corporation Project No. 4451-024
City of Somersworth, New Hampshire

(Issued January 20, 2023)

DANLY, Commissioner, *concurring*:

1. I concur with today's order[1] issuing Green Mountain Power Corporation and City of Somersworth a subsequent license to continue to operate and maintain the Lower Great Falls Hydroelectric Project. I write separately to express a few concerns.

2. *First*, it occurs to me that perhaps Maine Department of Environmental Protection (Maine DEP) waived certification by failing to act on the licensees' request within one year. Maine DEP received the licensees' request on April 6, 2021. Historical recitations in opinions by two circuit courts suggest that the last day of the one-year deadline would have been April 5, 2022.[2] Maine DEP issued its water quality certification one day later, on April 6, 2022. If Maine DEP did indeed waive certification, the Commission could not have accepted its terms as mandatory, and instead, would have had to consider whether the license, with Maine DEP's water quality terms, would be best adapted to a comprehensive plan for improving or developing a waterway under section 10(a) of the Federal Power Act (FPA).[3]

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[1] *Green Mountain Power Corp.*, 182 FERC ¶ 61,024 (2023) (*GMP*).

[2] *See Alcoa Power Generating Inc. v. FERC*, 643 F.3d 963, 966 (D.C. Cir. 2011) ("Alcoa Power . . . on May 8, 2008 . . . . re-fil[ed] its [water quality certification] request. . . . The Division of Water Quality issued a new certification on May 7, 2009, the last day of the one-year period."); *FPL Energy Maine Hydro LLC v. FERC*, 551 F.3d 58, 60 (1st Cir. 2008) (in a proceeding where the water quality certification application was dated November 15, 2002, the court stated, "on November 14, 2003 (the last day a decision could be reached before the one-year deadline expired) . . . ."); *see also* FPL Energy Maine Hydro LLC, Copy of Water Quality Certification Request, Project No. 2612-005 (filed December 27, 2002) (Accession No. 20030106-0395).

[3] *See* 16 U.S.C. § 803(a); *S. Feather Water & Power Agency*, 171 FERC ¶ 61,242 (2020) ("As we have long held, once a state agency has waived its authority to act on a water quality certification application, the water quality conditions are not mandatory and acceptance of the conditions is a matter with the Commission's discretion. Accordingly,

3. *Second*, I note that the Commission finds a certain recommendation filed by the Department of the Interior under section 10(j) of the FPA[4] to be "outside the scope" of that section and instead considers it under FPA section 10(a)(1).[5] As I have previously stated,[6] I have misgivings about this practice.

4. *Finally*, I write to express my concern about Article 202, which reserves authority for the Commission to impose financial assurance mechanisms without any limiting principle.[7] As I have previously stated,[8] this reservation may have the unfortunate effect of reinforcing uncertainty and limiting licensees' access to the very financing we should seek to encourage. It is imperative that the Commission take a hard look at our financial assurance requirements and deliberately determine what, if any, changes or improvements should be adopted.

For these reasons, I respectfully concur.

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James P. Danly
Commissioner

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we will consider all of the November 30, 2018 certification conditions as recommendations under FPA section 10(a)(1) in the relicensing proceeding.") (citations omitted). *See also GMP*, 182 FERC ¶ 61,024 at P 97 (explaining that the Environmental Assessment did not recommend Maine DEP's water quality plan).

[4] 16 U.S.C. § 803(j).

[5] *GMP*, 182 FERC ¶ 61,024 at PP 80, 88-93.

[6] *See, e.g.*, *Cornell Univ.*, 176 FERC ¶ 61,186 (2021) (Danly, Comm'r, concurring in part and dissenting in part at P 2).

[7] *See GMP*, 182 FERC ¶ 61,024 at P 130 & Ordering Para. G (listing additional license articles, including Article 202 which provides "The Commission reserves the right to require future measures to ensure that the licensee maintains sufficient financial reserves *to carry out the terms of the license and Commission orders pertaining thereto*.") (emphasis added).

[8] *See, e.g.*, *Pub. Util. Dist. No. 1 of Pend Oreille Cnty.*, 177 FERC ¶ 61,183 (2021) (Danly, Comm'r, concurring at PP 1-3).