



FirstLight Power
111 South Bedford Street, Suite 103
Burlington, MA 01803
Ph.: (781) 653-4247
Email: justin.trudell@firstlightpower.com

Justin Trudell
Chief Operating Officer

March 31, 2023

Via Electronic Filing

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: Turners Falls Hydroelectric Project (FERC No. 1889), FirstLight MA Hydro LLC,
Northfield Mountain Pumped Storage Project (FERC No. 2485), Northfield Mountain
LLC, Flows and Fish Passage Settlement Agreement and Explanatory Statement

Dear Secretary Bose:

Pursuant to Rule 602 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (“FERC” or “Commission”),¹ FirstLight MA Hydro LLC, owner and operator of the Turners Falls Hydroelectric Project (“Turners Falls Project”) and Northfield Mountain LLC, owner and operator of the Northfield Mountain Pumped Storage Project (“Northfield Mountain Project”) (collectively, “FirstLight”), are pleased to submit the attached Flows and Fish Passage Settlement Agreement for the relicensing of the Turners Falls Project and Northfield Mountain Project (together, “Projects”). Also enclosed is FirstLight’s Explanatory Statement as required by Rule 602.

The Flows and Fish Passage Settlement Agreement was executed among FirstLight and the National Marine Fisheries Service, the United States Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, The Nature Conservancy, American Whitewater, Appalachian Mountain Club, Crab Apple Whitewater, Inc., New England FLOW, and Zoar Outdoor (“Settling Parties”). FirstLight wishes to express its great appreciation to each of these entities for their tremendous efforts over the course of several years in achieving this important milestone and the collaborative spirit in which they engaged in resolving a number of complex and difficult issues.

The Flows and Fish Passage Settlement Agreement is a package that, by its terms, addresses all of the issues among the Settling Parties pertaining to fish passage, flows for fishery, ecological conservation, and recreation purposes, and protected, threatened, and endangered species for relicensing of the Projects. While recognizing that regulatory processes related to the relicensing of the Projects are not yet completed, the Flows and Fish Passage Settlement Agreement reflects agreement among the Settling Parties as to FirstLight’s obligations with regard to flows, fish passage, and protected, threatened, and endangered species at the Projects. It further reflects agreement among the Parties concerning recommendations, terms, conditions, and prescriptions

¹ 18 C.F.R. § 385.602 (2022).

to be submitted to the Commission pursuant to Sections 10(a), 10(j), and 18 of the Federal Power Act (“FPA”) regarding these topics.

The Flows and Fish Passage Settlement Agreement includes proposed license articles for the Projects as set forth in Appendices A (Turners Falls Project) and B (Northfield Mountain Project). FirstLight requests that the Commission accept and incorporate, without material modification, all of the proposed license articles in the new licenses for the Projects. FirstLight further requests that the Commission not include in the new licenses for the Projects any requirement that constitutes a material modification of, or addition to, the proposed license articles or that is otherwise inconsistent with the Settlement Agreement. The Explanatory Statement, together with the extensive relicensing studies and other information in the record of this proceeding, provide ample support for the proposed license articles upon which FERC can rely in meeting the requirements of the National Environmental Policy Act and the FPA.

The Flows and Fish Passage Settlement Agreement also includes measures, set forth in Appendix C, which the Settling Parties do not intend to be incorporated into the new licenses for the Projects. Appendix C is included for the Commission’s information only. The measures in Appendix C include FirstLight’s monetary contributions to funds to be administered by other Settling Parties for fish and wildlife improvements to be determined in their sole discretion, as well as other obligations of non-FirstLight Settling Parties.

The Flows and Fish Passage Settlement Agreement, while not resolving all issues associated with relicensing of the Projects, resolves the most difficult and complex issues going to the heart of the Projects’ operations. FirstLight believes that the Flows and Fish Passage Settlement Agreement represents an appropriate balance of environmental improvements with the need to maintain a low-cost and reliable source of clean, renewable power which contributes substantially to the reliability of the New England electric grid. Consequently, FirstLight believes that the Commission’s approval of the Flows and Fish Passage Settlement Agreement as filed will be in the public interest.

In accordance with Rule 602(d)(2), FirstLight hereby notifies all relicensing participants that unless otherwise provided by the Commission, comments on the Flows and Fish Passage Settlement Agreement must be filed on or before April 20, 2023, and reply comments must be filed on or before May 1, 2023.

Please do not hesitate to contact the undersigned if you have questions or require additional information regarding the attached.

Respectfully,



Justin Trudell
Chief Operating Officer

Enclosures: Explanatory Statement and Flows and Fish Passage Settlement Agreement

o.	Article A330. Upstream Fish Passage Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Testing.....	22
p.	Article A340. Fishway Operating Periods.....	23
q.	Article A350. Fish Passage Facility Operation and Maintenance Plan	23
r.	Article A400. Bald Eagle Protection Plan	24
s.	Article A410. Bat Protection Measures	24
2.	Proposed License Articles for the Northfield Mountain Project	24
a.	Article B100. Project Operations.....	24
b.	Article B200. Fish Intake Protection and Consultation	25
c.	Article B210. Initial Intake Protection Effectiveness Testing and Fish Passage Performance Goals	25
d.	Article B220. Downstream Fish Passage - Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Studies	25
e.	Article B230. Fishway Operating Periods	26
f.	Article B240. Fish Passage Facility Operation and Maintenance Plan for Barrier Net.....	26
g.	Article B300. Bald Eagle Protection Plan.....	26
h.	Article B310. Bat Protection Measures	26
3.	Fifty-Year License Terms	26
B.	Off-License Provisions	27
1.	Ichthyoplankton Fund	27
2.	Cobblestone Tiger Beetle Fund	27
3.	Agency Support for Vernon Flow Data	27
4.	Voluntary Efforts to Achieve Flow Stabilization Below Cabot Station	28
III.	CONCLUSION.....	29

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

FirstLight Hydro MA LLC)	Project Nos. 1889-___
Northfield Mountain LLC)	2485-___

**FLOWS AND FISH PASSAGE SETTLEMENT AGREEMENT
EXPLANATORY STATEMENT**

I. INTRODUCTION

Pursuant to Rule 602 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (“FERC” or “Commission”),¹ FirstLight Hydro MA LLC, owner and operator of the Turners Falls Hydroelectric Project (“Turners Falls Project”) and Northfield Mountain LLC, owner and operator of the Northfield Mountain Pumped Storage Project (“Northfield Mountain Project”) (collectively, “FirstLight”), hereby submit this Explanatory Statement in support of the Flows and Fish Passage Settlement Agreement for the relicensing of the Turners Falls Project and Northfield Mountain Project.

The Flows and Fish Passage Settlement Agreement was executed among FirstLight and the National Marine Fisheries Service (“NMFS”), the U.S. Fish and Wildlife Service (“USFWS”), the Massachusetts Division of Fisheries and Wildlife (“MDFW”), The Nature Conservancy (“TNC”), American Whitewater (“AW”), Appalachian Mountain Club (“AMC”), Crab Apple Whitewater, Inc., New England FLOW, and Zoar Outdoor (“Settling Parties”). The Flows and Fish Passage Settlement Agreement is a package that, by its terms, addresses all of the issues among the Settling Parties pertaining to fish passage, flows for fishery, ecological conservation, and recreation purposes, and protected, threatened, and endangered species for relicensing of the

¹ 18 C.F.R. § 385.602 (2022).

Turners Falls Project and Northfield Mountain Project (“Projects”). While recognizing that regulatory processes related to the relicensing of the Projects are not yet completed, the Settling Parties expressly intend that the Flows and Fish Passage Settlement Agreement establish FirstLight’s obligations with regard to flows, fish passage, and protected, threatened, and endangered species at the Projects, barring any unexpected development in the completion of the required regulatory processes. The Flows and Fish Passage Settlement Agreement reflects agreement among the Parties concerning recommendations, terms, conditions, and prescriptions to be submitted to the Commission pursuant to Sections 10(a), 10(j), and 18 of the Federal Power Act (“FPA”) regarding these topics.²

To this end, the Flows and Fish Passage Settlement Agreement includes proposed license articles for the Projects as set forth in Appendices A (Turners Falls Project) and B (Northfield Mountain Project). Consistent with the Flows and Fish Passage Settlement Agreement, FirstLight requests that the Commission accept and incorporate, without material modification, all of the proposed license articles in the new licenses for the Projects. FirstLight further requests that the Commission not include in the new licenses for the Projects any requirement that constitutes a material modification of, or addition to, the proposed license articles or that is otherwise inconsistent with the Flows and Fish Passage Settlement Agreement.³

The proposed license articles are supported by substantial evidence, including 39 relicensing studies approved by the Commission as well as additional studies conducted by FirstLight and submitted into the record. The justification for the proposed license articles, as explained in this document and supported by the record in this proceeding, provides a reasoned

² See Flows and Fish Passage Settlement Agreement, Sections 2.1 and 3.1.1.

³ Sections 1.3.6 and 1.3.7 of the Flows and Fish Passage Settlement Agreement define the term “Inconsistent with this Settlement Agreement.”

basis upon which the Commission can determine that the Flows and Fish Passage Settlement Agreement adequately protects fish and wildlife and enhances recreational boating, and is in the public interest.

The Flows and Fish Passage Settlement Agreement also includes measures, set forth in Appendix C, which the Settling Parties do not intend to be incorporated into the new licenses for the Projects. Appendix C is included for the Commission's information only. The measures in Appendix C include FirstLight's monetary contributions to funds to be administered by other Settling Parties for fish and wildlife improvements to be determined in their sole discretion, as well as other obligations of non-FirstLight Settling Parties. They do not address FirstLight's obligations under the FPA and are not subject to FERC's jurisdiction.⁴

II. BACKGROUND

The Turners Falls Project is located on the Connecticut River in Massachusetts at river mile 122. The Turners Falls Dam creates the Turners Falls Impoundment ("TFI"), extending upstream approximately 20 miles to the Vernon Hydroelectric Project (FERC Project No. 1904) ("Vernon Project"). The Turners Falls Project also includes a gatehouse, a power canal, two hydroelectric plants located on the power canal named Station No. 1 and Cabot Station, and fish passage facilities. Cabot Station is the largest conventional hydroelectric station in Massachusetts at over 62 megawatts ("MW"). Between the Turners Falls Dam and Cabot Station tailrace there is an approximately 2.5-mile-long bypass reach; Station No. 1 discharges into the bypass approximately 0.9 miles below the Turners Falls Dam. The current minimum flow in the bypass ranges seasonally with the highest minimum bypass flow of 400 cfs during the fish passage season. The Turners Falls Project is currently operated as a daily cycle project.

⁴ See *Settlements in Hydropower Licensing Proceedings under Part I of the Federal Power Act*, 116 FERC ¶ 61,270 at PP 14, 26 (2006) ("Settlement Policy Statement").

The TFI also serves as the lower impoundment for the Northfield Mountain Project, an approximately 1,168 MW pumped storage project in Northfield, Massachusetts that includes an off-stream upper reservoir. The Northfield Mountain Project is the largest pumped storage project in New England.

The next three hydroelectric projects located in series above the Turners Falls Project are the Vernon Project, Bellows Falls Hydroelectric Project (FERC Project No. 1855), and Wilder Hydroelectric Project (FERC Project No. 1892) (downstream to upstream order). These projects, owned by a different licensee, are also undergoing relicensing. FERC has indicated its intent to prepare one Environmental Impact Statement for all five projects.⁵

The current licenses for the Turners Falls Project and Northfield Mountain Project were issued on May 5, 1980, and May 14, 1968, respectively. Both licenses expired on April 30, 2018, and the Projects have been operating under annual licenses issued by the Commission.

FirstLight commenced the relicensing process by filing a Notice of Intent and Pre-Application Document (“PAD”) on October 31, 2012. In the PAD, FirstLight indicated that it would use the Integrated Licensing Process (“ILP”) to relicense the Projects. Pursuant to the ILP, FirstLight then engaged with relicensing participants, FERC, and the public in scoping environmental issues related to the Projects and in developing and implementing a rigorous study plan to assess the Projects’ environmental impacts. As required by the FPA and FERC’s regulations, FirstLight filed a Final Application for New License for the Projects with FERC on April 29, 2016. Because certain environmental studies required by FERC had not yet been completed, FirstLight filed Amended Final License Applications (“AFLAs”) for each Project on

⁵ Scoping Document 2 at 2, Project Nos. 1892-026 et al. (issued Apr. 15, 2013) (“Pursuant to NEPA, as amended, Commission staff intends to prepare a multi-project environmental impact statement, which will be used by the Commission to determine whether, and under what conditions, to issue new licenses for the projects.”).

December 4, 2020. The AFLAs included FirstLight’s proposed protection, mitigation and enhancement (“PM&E”) measures to be included in the new licenses and the scientific and evidentiary basis for those measures.

In 2017, FirstLight began formal settlement discussions with relicensing participants. The initial focus of these discussions was with state and federal fish and wildlife agencies and certain conservation organizations on fish passage and flow issues. Those discussions did not result in agreement on all fish passage and flow issues but did inform FirstLight’s PM&E proposals in the AFLAs. FirstLight’s PM&E proposals in the AFLAs were also informed by environmental studies not required by FERC but undertaken voluntarily by FirstLight in consultation with the state and federal fish and wildlife agencies.⁶

Following submittal of the AFLAs, FirstLight, the state and federal fish and wildlife agencies, and conservation organizations resumed discussions on fish passage and flows. This resulted in an Agreement in Principle which FirstLight filed with FERC on March 18, 2022, and an Amended Agreement in Principle which FirstLight filed on October 31, 2022. FirstLight separately engaged with whitewater boating interests and entered into an Agreement in Principle which FirstLight filed with FERC on February 28, 2022. Because of certain inconsistencies between the fish passage and flow agreement and the whitewater boating agreement, the parties to both agreements engaged in mutual discussions to bridge the gaps. Those discussions resulted in this Flows and Fish Passage Settlement Agreement.⁷ This settlement agreement on fish passage,

⁶ The AFLA for the Turners Falls Project also included Draft Biological Assessments (“Draft BAs”) for the federally endangered Shortnose Sturgeon and the federally threatened Puritan Tiger Beetle. Under the Flows and Fish Passage Settlement Agreement Section 4.3.1, FirstLight will file revised Draft BAs within 180 days of the fully executed agreement.

⁷ FirstLight also has been engaged in extensive stakeholder outreach on other relicensing issues with state agencies, local governments, non-governmental organizations, and tribal groups with an interest in the Projects. Settlement negotiations on non-flow related recreation issues, riverbank erosion, and cultural resource issues are ongoing.

flows, and protected, threatened, and endangered species, while not resolving all issues associated with relicensing of the Projects, resolves the most difficult and complex issues going to the heart of the Projects' operations. FirstLight believes that the Flows and Fish Passage Settlement Agreement represents an appropriate balance of environmental improvements with the need to maintain a low-cost and reliable source of clean, renewable power which contributes substantially to the reliability of the New England electric grid. Consequently, FirstLight believes that the public interest will be best served if the Commission approves the Flows and Fish Passage Settlement Agreement as filed.

III. OVERVIEW OF THE SETTLEMENT PM&E MEASURES

A. Proposed License Terms and Conditions

1. Proposed License Articles for the Turners Falls Project

a. Article A100. Station No. 1 Upgrades

As described below, the Flows and Fish Passage Settlement Agreement calls for significant increases in minimum bypass flows for fish passage and habitat which vary seasonally. All bypass flows are on an or-inflow basis, where inflow is defined as the naturally routed flow ("NRF"), which is further defined in Proposed License Articles A110 and A120. Certain flows must be provided at Turners Falls Dam and certain flows by Station No. 1. Station No. 1 currently cannot be operated remotely and the units cannot be throttled over a range of flows. Accordingly, FirstLight has agreed to modify Station No. 1 such that the units can be operated remotely over a range of flows. This will be completed within three years of license issuance which is the time needed to complete the necessary upgrades.

b. Articles A110 and A120. Minimum Bypass Flows

The Flows and Fish Passage Settlement Agreement provides that FirstLight will provide considerably higher minimum flows for fish in the Turners Falls Project bypass reach than required

under the current license. Minimum flows will range from 6,500 cubic feet per second (“cfs”) to 3,500 cfs during the spring migratory fish passage season. Minimum flows will range from 1,800 cfs to 1,500 cfs during the summer through winter period. The bypass flows provided during the fish passage season will accomplish the following relative to current license requirements:

- A three-fold increase in spawning habitat for the federally endangered Shortnose Sturgeon (“SNS”) between the Turners Falls Dam and Rawson Island and a 2.6-fold increase between Rawson Island and the Montague Bridge below Cabot Station.⁸ The higher bypass flows will also substantially increase SNS rearing habitat for eggs and larvae.
- A three-fold increase in spawning habitat for adult American Shad between the Turners Falls Dam and Rawson Island and a two-fold increase between Rawson Island and Cabot Station.
- Attraction and migration flows to encourage shad to follow the natural route of the Connecticut River to a new spillway lift which FirstLight will construct at the Turners Falls Dam.

It is well documented that shad migration utilizing the current fish ladder at Cabot Station results in very low upstream passage rates at the Turners Falls Dam. The current Cabot ladder places migrants into the power canal. Multiple years of studies have demonstrated that adult shad passage efficiency through the Cabot ladder has been poor. Moreover, adult shad exiting the Cabot ladder are confused (sometimes going back downstream in the power canal via the existing Cabot downstream fish passage structure) and/or suffer considerable delay ascending the power canal and finding the entrance to the upstream gatehouse ladder. FirstLight believes that, as reflected in the Flows and Fish Passage Settlement Agreement, refocusing fish passage efforts on a new fish

⁸ The Montague Bridge is located approximately 2,800 feet below the Cabot Station tailrace.

lift at the dam and decommissioning the Cabot Station fish ladder is the most likely way to meaningfully improve passage at the Projects. Key to the success of the new fish lift will be the increased bypass flows under Proposed License Articles A110 and A120 and more naturalized flows out of Cabot Station.

The purpose of the new minimum flows in the summer through winter period is to provide considerably more aquatic habitat and maintain sufficient water depths for overwintering fish compared to current requirements. The current requirements vary from 400 cfs through approximately July 15, to 120 cfs through approximately November 15. The new flow regime for these periods can range up to 1,800 cfs. The Turners Falls Dam release of 500 cfs through the summer and fall will also provide sufficient flow for paddle-through boaters.

The Turners Falls Dam and Station No. 1 will both contribute to the total minimum flows in the bypass reach below the dam, in different proportions.⁹ Routing a portion of the flows through Station No. 1 allows FirstLight to generate hydroelectric power with water that now flows through the power canal to Cabot Station, although at lower head thus resulting in generation reduction. Note that the prescribed minimum flows will not exceed the NRF, i.e., FirstLight will not use TFI storage to provide the minimum flows. From December 1 through June 30, the NRF is defined as the hourly sum of the discharges from 12 hours previous as reported by: (i) the Vernon Project; (ii) the Ashuelot River United States Geological Survey (“USGS”) Gauge No. 01161000; and (iii) the Millers River USGS gauge, Gauge No. 01166500. From July 1 through November 30, the NRF is defined as the hourly sum of the discharges averaged from 1 to 12 hours previous as reported by these sources. The reason for modifying the NRF definition during this period is for FirstLight

⁹ As noted above, the Station No. 1 tailrace is located about 0.9 miles below the dam.

to attempt to dampen potential flex or peaking releases from the upstream Vernon Project, as discussed below with respect to Proposed License Article A150.¹⁰

Table 1 below summarizes the new minimum flow requirements.

Table 1. Minimum Flows below Turners Falls Dam and Total Minimum Bypass Flows below Station No. 1

Date	Minimum Flows below Turners Falls Dam	Total Minimum Bypass Flows below Station No. 1
01/01-03/31	<ul style="list-style-type: none"> • If the NRF is \leq 400 cfs, the minimum flow shall be 400 cfs or the NRF, whichever is less. • If the NRF is $>$ 400 cfs, the minimum flow shall be 400 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 400 cfs, the total bypass flow shall be 400 cfs, or the NRF, whichever is less. • If the NRF is $>$ 400 cfs, the total bypass flow shall be 1,500 cfs, or the NRF, whichever is less.
04/01-05/31	<ul style="list-style-type: none"> • If the NRF is \leq 6,500 cfs, the minimum flow shall be 67% of the NRF. • If the NRF is $>$ 6,500 cfs, the minimum flow shall be 4,290 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 6,500 cfs, total bypass flow shall be the NRF. • If the NRF is $>$ 6,500 cfs, the total bypass flow shall be 6,500 cfs.
06/01-06/15	<ul style="list-style-type: none"> • If the NRF is \leq 4,500 cfs, the minimum flow shall be 67% of the NRF. • If the NRF is $>$ 4,500 cfs, the minimum flow shall be 2,990 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 4,500 cfs, the total bypass flow shall be the NRF. • If the NRF is $>$ 4,500 cfs, the total bypass flow shall be 4,500 cfs.
06/16-06/30	<ul style="list-style-type: none"> • If the NRF is \leq 3,500 cfs, the minimum flow shall be 67% of the NRF. • If the NRF is $>$ 3,500 cfs, the minimum flow shall be 2,280 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 3,500 cfs, the total bypass flow shall be the NRF. • If the NRF is $>$ 3,500 cfs, the total bypass flow shall be 3,500 cfs.
07/01-08/31 ¹	<ul style="list-style-type: none"> • If the NRF is \leq 500 cfs, the minimum flow shall be 500 cfs or the NRF, whichever is less. • If the NRF is $>$ 500 cfs, the minimum flow shall be 500 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 500 cfs, the total bypass flow shall be 500 cfs, or the NRF, whichever is less. • If the NRF is $>$ 500 cfs and \leq 1,800 cfs, the total bypass flow shall be the NRF or 90% of the NRF. • If the NRF is $>$ 1,800 cfs, the total bypass flow shall be 1,800 cfs, or 90% of the NRF, whichever is less.
09/01-11/15 ¹	<ul style="list-style-type: none"> • If the NRF is \leq 500 cfs, the minimum flow shall be 500 cfs or the NRF, whichever is less. • If the NRF is $>$ 500 cfs, the minimum flow shall be 500 cfs. 	<ul style="list-style-type: none"> • If the NRF is \leq 500 cfs, the total bypass flow shall be 500 cfs, or the NRF, whichever is less. • If the NRF is $>$ 500 cfs and \leq 1,500 cfs, the total bypass flow shall be the NRF, or 90% of the NRF. • If the NRF is $>$ 1,500 cfs, the total bypass flow shall be 1,500 cfs, or 90% of the NRF, whichever is less.
11/16-12/31 ¹	<ul style="list-style-type: none"> • If the NRF is \leq 400 cfs, the minimum flow shall be 400 cfs or the NRF, whichever is less. • If the NRF is $>$ 400 cfs, the minimum flow shall be 400 cfs. 	<ul style="list-style-type: none"> • If the NRF is $<$ 400 cfs, then the total bypass flow shall be 400 cfs, or the NRF, whichever is less. • If the NRF is $>$ 400 cfs and \leq 1,500 cfs, the total bypass flow shall be the NRF or 90% of the NRF. • If the NRF is $>$ 1,500 cfs, the total bypass flow shall be 1,500 cfs, or 90% of the NRF, whichever is less.

¹From July 1 to December 31, the Total Minimum Bypass Flows below Station No. 1 is the NRF or 90% of the NRF. If the Total Minimum Bypass Flows below Station No. 1 is reduced by 10%, it will not be taken from the Minimum Flows below Turners Falls Dam.

¹⁰ If, after three years, FirstLight determines that it is not possible to dampen the Vernon upstream releases through FirstLight's operations, FirstLight will consult with MDFW, NMFS, and USFWS.

c. Article A130. Minimum Flows below Cabot Station

Under the Flows and Fish Passage Settlement Agreement, from December 1 to June 30 a single Cabot Station unit (~2,300 cfs) will be operated such that the total flow, including the bypass flows, below Cabot Station ranges from 3,800 cfs to 8,800 cfs, or the NRF, whichever is less.

Baseloading a Cabot Station unit from December 1 to June 30 accomplishes the following enhancements relative to current conditions:

- Substantially increases shad spawning habitat by 76-82%.
- Maintains 30% more habitat for SNS larvae, a critical life stage drifting below Cabot Station from spawning areas near and above Cabot Station.

Table 2 below summarizes the new minimum flow requirements below Cabot Station.

Table 2. Minimum Flows below Cabot Station

Date	Minimum Flow below Cabot Station
01/01-03/31	3,800 cfs or the NRF, whichever is less
04/01-05/31	8,800 cfs from midnight to 7:00 pm or the NRF, whichever is less and 6,500 cfs from 7:00 pm to midnight or the NRF, whichever is less
06/01-06/15	6,800 cfs or the NRF, whichever is less
06/16-06/30	5,800 cfs or the NRF, whichever is less
07/01-08/31	1,800 cfs or 90% of the NRF, whichever is less (no Cabot unit baseloaded)
09/01-11/15	1,500 cfs or 90% of the NRF, whichever is less (no Cabot unit baseloaded)
11/16-11/30	1,500 cfs or 90% of the NRF, whichever is less (no Cabot unit baseloaded)
12/01-12/31	3,800 cfs or NRF, whichever is less

d. Article A140. Cabot Station Ramping Rates

Ramping rate restrictions moderate releases to prevent large, sudden fluctuations in river levels below a project that can adversely affect aquatic resources. Under current operations, FirstLight can operate Cabot Station as a peaking facility year-round, where discharges can vary over short durations. Cabot Station has six equally sized turbines (each approximately 2,288 cfs) with a maximum station hydraulic capacity of approximately 13,728 cfs. The primary purposes of the Cabot Station ramping restrictions are:

- Maintaining up-ramping and down-ramping rates of 2,300 cfs/hour at Cabot Station during the spring spawning season to protect SNS habitat.
- Maintaining up-ramping rates of 2,300 cfs/hour from July 1 through August 15 between 8:00 am and 2:00 pm to protect state-listed odonates (dragonflies) emerging from the river shoreline areas during their eclosure process¹¹ from becoming inundated and lost from the environment due to rapidly rising water levels.

Under the Flows and Fish Passage Settlement Agreement, FirstLight will comply with ramping rates below Cabot Station. upon license issuance until three years after license issuance per Table 3.

Table 3. Cabot Station Ramping Rates (Effective from license issuance until 3 years after license issuance)

Date	Cabot Station Ramping Rates¹
04/01-06/30	Up and Down Ramping at a rate of 2,300 cfs/hour
07/01-08/15	Up Ramping at a rate of 2,300 cfs/hour from 8:00 am to 2:00 pm

Starting three years after license issuance, FirstLight will ramp Cabot Station per Table 4.

Table 4. Cabot Station Ramping Rates (Effective 3 years after license issuance)

Date	Cabot Station Ramping Rate¹
04/01-06/30	Up and Down Ramping at a rate of 2,300 cfs/hour

¹If the NRF is greater than the sum of the hydraulic capacity of Cabot Station and Station No. 1 and the Minimum Flow below Turners Falls Dam in effect at the time, the Cabot Station up-ramping rates will not apply.

Note that the ramping restrictions from July 1 to August 31 in Table 3 will apply during the first three years after license issuance but will be superseded by the flow stabilization requirements below Cabot Station as set forth in Proposed License Article A150 after the first three years. The Cabot Station ramping restrictions from July 1 to August 31 for odonates will be unnecessary as the flow stabilization requirements will limit the rate of rise in water levels.

¹¹ Eclosure is when dragonfly larvae emerge from the water to undergo metamorphosis and are temporarily immobile and vulnerable to inundation.

The Cabot Station ramping rates above are intended to take precedence over the flow stabilization requirements below Cabot Station in Proposed License Article A150 to provide the maximum protection for SNS habitat. The purpose of these ramping rates is to avoid disrupting SNS who may be using spawning habitat in the vicinity of the Cabot Tailrace.

e. Article A150. Variable Releases from Turners Falls Dam and Variable Flow below Station No. 1

Under Proposed License Article A150, FirstLight will make variable releases from Turners Falls Dam and maintain variable flow Station No. 1 for ecological conservation and recreational boating purposes. Variable releases from Turners Falls Dam and variable flows below Station No. 1 will be at the specified rates or the NRF, whichever is less.

FirstLight will make 4-hour releases of 4,000 cfs from Turners Falls Dam for two consecutive weekend days during five separate events in the summer/fall recreation season. FirstLight also will maintain 4-hour flows of 2,500 cfs below Station No. 1 for two consecutive weekend days during seven separate events in the summer/fall recreation season.

The releases from Turners Falls Dam and flows below Station No. 1 will occur between 10:00 a.m. and 2:00 p.m. The releases will be scheduled during the period July 1 to October 31 so as not to interfere with fish migration and spawning. FirstLight will convene an annual scheduling meeting no later than March 1 to schedule the events for that year. The meeting will include AW, AMC, New England FLOW, commercial outfitters, USFWS, MDEP and MDFW. The schedule will have at least one weekend per month with no releases to reduce any impacts to aquatic resources. FirstLight also will notify the same parties at the annual meeting of its planned schedule for the power canal shutdown for annual maintenance; this typically provides another opportunity for recreational boating as no flows are diverted from the river during the outages. If the outage schedule does not provide for a weekend release day that is boatable, FirstLight will work with the

same parties to schedule a third consecutive day during one of the other five release events from Turners Falls Dam.

The releases under Proposed License Article A150 will be subject to up-ramping and down-ramping for boater safety and to mitigate any impacts on aquatic resources. It is FirstLight's understanding that the releases are anticipated by MDFW to have downstream ecological benefits by providing occasional high flows simulating rain runoff events that would benefit stream ecology and aquatic life in a natural river system.

f. Article A160. Flow Stabilization below Cabot Station and Allowable Deviations for Flexible Operations

Under the Settlement Agreement, FirstLight will maintain a stabilized flow regime below Cabot Station except during the winter by providing $\pm 10\%$ of the NRF with deviations up to $\pm 20\%$ for a certain number of hours each month. This PM&E measure is the centerpiece of the suite of measures to reduce Cabot Station peaking operations, and therefore to deliver a more natural river flow regime. It is intended to provide the following ecological benefits:

- Maintaining more stable aquatic habitat for fish, mussels, macroinvertebrates, and other aquatic biota between Cabot Station and approximately 32 miles of downstream habitat.
- Protecting state-endangered odonates emerging from the river shoreline areas during their eclosure process from becoming inundated and lost from the system due to rapidly rising water levels.
- Limiting impacts to habitat of the state-endangered Cobblestone Tiger Beetle ("CTB") which is a cobble bar approximately 3,500 feet below Cabot Station.
- Protecting the federally-threatened and state-endangered Puritan Tiger Beetle ("PTB") habitat located at Rainbow Beach approximately 25 miles below Cabot Station from water level fluctuations and inundation.

As noted above, located at the head of the TFI is the Vernon Project. Like the Turners Falls Project, the Vernon Project currently operates as a peaking project. Per a Memorandum of Understanding among the licensee and several stakeholders,¹² the Vernon Project operation will change under its new project license to provide a more stabilized discharge regime. However, for a certain number of hours each month throughout the year the licensee will be able to operate in a “flex” mode, allowing the Vernon Project a certain amount of peaking operations. When the Vernon Project licensee operates in flex mode, FirstLight has agreed to dampen its peaking releases below Cabot Station from July 1 to November 30 by smoothing out the releases. FirstLight will accomplish this by employing a revised calculation of the NRF from July 1 to November 30 as defined in Articles A110 and A120, which averages the hourly sum of the discharges from 1 to 12 hours previous to smooth the discharge. Table 5 summarizes the flow stabilization requirements below Cabot Station.

¹² The Memorandum of Understanding, dated December 1, 2020, was filed by Great River Hydro on December 7, 2020, and executed by Great River Hydro with the USFWS, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, the Vermont Department of Environmental Conservation, the Vermont Department of Fish and Wildlife, The Nature Conservancy, and the Connecticut River Conservancy. *See* Amended Application for New License for the Vernon Project, Ex. B, Att. B, Project Nos. 1855-050 et al. (filed Dec. 7, 2020).

Table 5. Flow Stabilization below Cabot Station

Date	Flow Stabilization below Cabot Station¹
04/01-05/15 ²	Provide $\pm 10\%$ of the NRF below Cabot Station from 7:00 pm to midnight, with allowable deviations up to $\pm 20\%$ of the NRF for up to 22 hours total from 04/01-05/15 (the 22 hours will be used from 7:00 pm to midnight).
05/16-05/31 ²	Provide $\pm 10\%$ of the NRF below Cabot Station from 7:00 pm to midnight, with allowable deviations up to $\pm 20\%$ of the NRF for up to 18 hours total from 05/16-05/31 (the 18 hours will be used from 7:00 pm to midnight).
06/01-06/15 ²	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 7 hours total from 06/01-06/15.
06/16-06/30 ²	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 7 hours total from 06/16-06/30.
07/01-08/15 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 55 hours total from 07/01-08/15.
08/16-08/31 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 27 hours total from 08/16-08/31.
09/01-10/31 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 44 hours total from 09/01-10/31.
11/01-11/30 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 11 hours total from 11/01-11/30.

¹If the NRF is greater than the sum of the hydraulic capacity of Cabot Station and Station No. 1 and the Minimum Flow below Turners Falls Dam in effect at the time, the Flow Stabilization below Cabot Station will not apply.

²From April 1 to June 30, the NRF flow may be reduced by 10% or up to 20% for select hours. If the NRF is reduced during this period, the flow will be taken from Cabot Station generation.

³From July 1 to November 30, the NRF flow may be reduced by 10% or up to 20% for select hours. If the NRF is reduced during this period, the flow will not be taken from the Turners Falls Dam Minimum Flow.

The flow stabilization requirements will take effect three years after license issuance in order for FirstLight to gain experience with the new operational regime, which will require balancing many new operational changes including: revised methods of computing the NRF, maintaining bypass flows, maintaining the proper flow split at the Turners Falls Dam and below Station No. 1 during the migratory fish passage season, baseloading a Cabot unit, and ramping Cabot Station. The upstream Wilder, Bellows Falls, and Vernon Projects will also be operating under a new regime, which affects the magnitude and timing of inflow to the TFI.

Under Proposed License Article A160, FirstLight will have restricted discretionary flexible operating capability from July 1 to November 30 to respond to changes in river flow, imbalances in the upper and lower reservoirs, and market dynamics. It will have unrestricted capability to respond to emergencies, ISO New England, Inc. (“ISO-NE”) transmission and power system requirements, and other regulatory requirements.

Starting three years after license issuance, FirstLight may deviate from the flow stabilization below Cabot Station and Cabot Station ramping rates for a certain number of hours in July, August, September, October, and November, referred to as flexible operations.

To confirm that flow stabilization and the other proposed new operating conditions would not result in increased erosion along the TFI shoreline, FirstLight simulated the conditions within its operations model. The output from the operations model was then used to determine if proposed operations would cause an increase in erosion. The BSTEM erosion modeling indicated that proposed operations would have minimal impact on TFI shoreline erosion and that, as expected, the dominant causes of erosion would continue to be natural high flows at most locations and boat waves in the Barton Cove area.

g. Article A170. Flood Flow Operations

Under Proposed License Article A170, FirstLight will continue to operate the Project in accordance with its existing agreement with the United States Army Corps of Engineers (“Corps”). This agreement, memorialized in the Reservoir and River Flow Management Procedures (1976), as it may be amended from time to time, governs how the Turners Falls Project will operate during flood conditions and coordinate its operations with the Northfield Mountain Project.

h. Article A180. Cabot Station Emergency Gate Use

FirstLight uses the Cabot Station emergency gates for debris management and other purposes. High releases from the emergency gates could disrupt SNS spawning in the area below

Cabot Station during the spawning season. FirstLight has agreed that it will only use the emergency gates under the following conditions: (a) a Cabot load rejection which could cause overtopping of the canal; (b) dam safety issues such as potential canal overtopping or partial breach; and (c) to discharge up to approximately 500 cfs from April 1 to June 15 for debris management. FirstLight will avoid discharging flows higher than 500 cfs through the gates from April 1 to June 15 if practicable; however, if necessary to discharge higher flows, FirstLight will coordinate with NMFS to minimize potential impacts to SNS in the area below Cabot Station.

i. Article A190. Turners Falls Impoundment Water Level Management

Proposed License Article A190 requires FirstLight to maintain an up-ramping rate of 0.90 ft/hour in the TFI, as measured at the Turners Falls Dam, from May 15 to August 15 between 8:00 am and 2:00 pm. This will protect odonates from rapidly rising water levels during their eclosure period. This proposed license article also calls for maintaining the water levels between elevation 176.0 feet and 185 feet National Geodetic Vertical Datum of 1929 (“NGVD29”) as measured at the Turners Falls Dam.

j. Article A200. Project Operation, Monitoring and Reporting Plan

Within one year of license issuance, FirstLight will file with the Commission for approval a Project Operation, Monitoring and Reporting Plan describing how FirstLight will comply with the operating conditions of Proposed License Articles A110, A120, A130, A140, A150, A160, and A190, and how FirstLight will document compliance with the operating conditions. The reporting requirements will include detailed information regarding FirstLight’s allowable deviations from the operating conditions. They also will include documenting FirstLight’s progress, within the first three years after license issuance, toward meeting the flow stabilization measures below Cabot Station (Article A150).

FirstLight will develop the Plan after consultation with MDEP, MDFW, NMFS, and USFWS. Consultation will include providing the Plan to those agencies for comment. If FirstLight does not adopt a recommendation, FirstLight will include with the Plan filed with the Commission its reasons, based on project-specific information.

k. Article A210. Flow Notification and Website

Beginning one year after license issuance, FirstLight will provide the following information year-round on a publicly available website:

- On an hourly basis, the TFI water elevation, as measured at the Turners Falls Dam, the Turners Falls Dam total discharge, and the Station No. 1 discharge.
- On an hourly basis, the anticipated Turners Falls Dam total discharge and the anticipated Station No. 1 discharge for a 12-hour window into the future. Should the Licensee deviate from passing the 12-hour previous NRF from December 1 to May 31 or the 12-hour average NRF from June 1 to November 30, it will post the revised flows (in the 12-hour look ahead window) to a website as soon as practicable after they are known. Should the licensee of the Vernon Project provide FirstLight with flow data more than 12 hours in advance, FirstLight will publish the information sooner.
- Within one month prior to its annual power canal drawdown, FirstLight will post on its website the starting and ending time/date of the drawdown, which will last at least four days. Throughout the duration of the canal drawdown, the NRF, as defined in Proposed License Article A110, will be maintained below the Turners Falls Dam.

The purpose of providing Turners Falls Dam spill and the Station No. 1 generation flow is to allow recreational users to take advantage of anticipated flows in the bypass reach. Similarly,

the purpose for posting the start and end time/date of the canal drawdown is to allow recreational users to take advantage of the available flow in the bypass reach.

1. Article A300. Fish Passage Facilities

FirstLight currently operates three fish ladders at the Turners Falls Project including one at Cabot Station, one at the Turners Falls Dam spillway, and one at the gatehouse. Migratory fish exiting the Cabot ladder ascend a 2.1-mile-long power canal to the gatehouse ladder before exiting into the TFI. Migrants arriving at the spillway ladder after traversing the 2.5-mile-long bypass reach move into the gatehouse ladder and also exit into the TFI.

For decades, FirstLight has worked with federal and state fishery agencies to increase shad passage rates utilizing the existing fish ladders at the Turners Falls Project. Despite these efforts, upstream shad passage rates have been relatively low. The fish ladders were designed for adult Atlantic salmon, which have now been extirpated in the Connecticut River. They were not designed for shad which is not as strong a swimmer as salmon. In addition, shad have had difficulty navigating the power canal to the upstream gatehouse fish ladder.

Migrants moving downstream must first pass the Northfield Mountain Project tailrace and then the Turners Falls Project where fish are currently either conveyed via the dam, if spilling, or passed through the gatehouse and into the power canal. There are currently no downstream fish passage structures at the dam. Downstream fish passage is provided at the downstream terminus of the power canal at Cabot Station. The Cabot Station downstream passage facility consists of reduced bar-spacing in the upper 11 feet of the Cabot Station intake rack and a broad-crested weir specifically designed to enhance fish passage into the log sluice leading fish to the Connecticut River.

Under Proposed License Article A300, FirstLight has agreed to construct several major capital improvements at the Turners Falls Project for both upstream and downstream fish passage.

The timing and sequencing of these improvements reflects a priority for downstream shad passage, followed by improvements to upstream passage. This is consistent with the fish and wildlife agency objective to recruit as many repeat adult shad spawners as possible to the lower Connecticut River to enhance the overall shad population.¹³

Downstream fish passage improvements will include: (a) within four years of license issuance, installing a ¾-inch bar rack in the power canal to prevent the entrainment of fish into the Station No. 1 forebay; (b) also within four years of license issuance, replacing the existing Cabot Station trashrack structure with a new, full-depth trashrack with 1-inch clear spacing and with multiple openings for fish passage which will convey fish to the river via a new uniform acceleration weir and resurfaced log sluice; and (c) constructing a plunge pool downstream of the Turners Falls Dam to provide a safe landing zone for fish spilled over the dam, as part of the construction of the new spillway lift. These improvements will benefit not only adult and juvenile shad, but also down-migrating adult American eels.

Upstream fish passage improvements will include: (a) construction of a new, state of the art fish lift at the Turners Falls Dam spillway; (b) rehabilitation of the gatehouse trapping facility; (c) installation of interim upstream eel passage within one year of license issuance; and (d) construction of up to two permanent eel passage facilities based on a siting study. The intent of these improvements is to move all upstream fish passage to one location at the new spillway fish lift. Migratory fish will follow the natural route of the Connecticut River where they can either utilize spawning habitat from the considerably higher bypass flows being provided under Proposed License Articles A110 and A120, or continue to the spillway lift to access spawning habitat above

¹³ The Connecticut River American Shad Management Plan has an objective of achieving an adult shad stock structure that over a five-year running average has a repeat spawner component of at least 15% for each sex. *See Connecticut River Atlantic Salmon Commission, Connecticut River American Shad Management Plan at 4, Project Nos. 1889-000 et al. (filed Mar. 2, 2020).*

the dam. The Cabot ladder will be retired following completion of the spillway lift so that shad are no longer passed into the power canal. The Settling Parties believe these measures will substantially increase upstream fish passage rates at the Turners Falls Project.

m. Article A310. Schedule of Initial Effectiveness Testing, Consultation Process on Effectiveness Testing Study Plans, and Fish Passage Performance Goals

The state and federal fishery agencies have developed upstream and downstream fish passage efficiency and time-to-pass performance goals at the Turners Fall Project for shad and eels, both juvenile and adult life stages. These performance goals are laid out in Proposed License Article A310. FirstLight will complete construction of each fish passage facility, operate the fish passage facility for one season (shakedown year), and then conduct representative and quantitative fish passage initial effectiveness testing to measure the results against the performance goals.

n. Article A320. Downstream Fish Passage- Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Studies

Proposed License Article A320 sets out a schedule for up to four rounds of downstream fish passage effectiveness testing and reporting during the first 20 years of the license term, as needed to meet fishery agency performance goals. If the effectiveness testing shows that the agency performance goals are not being met, then Proposed License Article A320 sets forth an agreed upon list of adaptive management measures (“AMMs”) that may be implemented. FirstLight will target any AMMs to those locations where performance goals are not being achieved. In addition to the initial effectiveness testing, FirstLight will conduct effectiveness testing after each of three rounds of AMMs to determine progress toward meeting the performance goals. No other AMMs other than those specified in the proposed license article will be required for the first 25 years of the license unless expressly agreed to by FirstLight, MDFW, NMFS, and USFWS.

o. Article A330. Upstream Fish Passage Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Testing.

Similar to downstream passage, Proposed License Article A330 sets out a schedule for up to four rounds of upstream fish passage effectiveness testing and reporting during the first 20 years of the license term, as needed to meet fishery agency performance goals. If the effectiveness testing shows that the agency performance goals are not being met, then Proposed License Article A330 sets forth an agreed upon list of AMMs that may be implemented. In addition to the initial effectiveness testing, FirstLight will conduct effectiveness testing after each of three rounds of AMMs to determine progress toward meeting the performance goals. No AMMs other than those specified in the proposed license article will be required for the first 25 years of the license unless expressly agreed to by FirstLight, MDFW, NMFS, and USFWS.

The Turners Falls Project includes a complex of facilities that impose potential barriers to upstream fish passage. It also includes a 2.5-mile-long bypass reach of the Connecticut River that contains several natural features that may impede or delay shad passage to Turners Falls Dam under certain flow conditions including the following:

- Migrants will encounter the Cabot Station tailrace, which will likely be operating during the fish passage season and could result in false attraction.
- Migrants passing the Cabot Station tailrace encounter Rawson Island, which splits the Connecticut River into two river channels. Migrants ascending the east side of Rawson Island will encounter Rock Dam, a natural rock ledge drop which is not passable under certain flow conditions and can result in delay. Migrants ascending the west side of Rawson Island will encounter velocity barriers in the channel, which was confirmed by multiple seasons of adult shad telemetry studies.

- The unlicensed Milton Hilton Hydro, LLC and the Turners Falls Hydro, LLC (FERC No. 2622) Projects, which utilize water from the power canal, may also be discharging into the bypass above Station No. 1, creating potential false attraction.
- Migrants moving beyond the Station No. 1 tailrace must find the entrance to the spillway lift before being conveyed into the gatehouse ladder and ultimately into the TFI.

Given the above, the Settling Parties agreed to revisit whether the agencies’ upstream performance goals are achievable or should be modified, after implementing the first (Tier 1) and second (Tier 2) round of AMMs. At FirstLight’s election, the Settling Parties may engage an Independent Peer Review Panel of experts to evaluate the effectiveness testing results and advise on modifying the performance goals.

p. Article A340. Fishway Operating Periods

Under this proposed license article, FirstLight will operate the fishways during the periods listed in the table below. The operating periods may be refined on an annual or permanent basis based on consultation among FirstLight, MDFW, NMFS, and USFWS.

Upstream Eel Passage	May 1 to November 15
Upstream Anadromous	April 4 to July 15
Downstream Passage	April 4 to November 15

q. Article A350. Fish Passage Facility Operation and Maintenance Plan

Under this proposed license article, FirstLight will develop and implement a Fish Passage Operation and Maintenance Plan in consultation with MDFW, NMFS, and USFWS. The plan will detail how and when the various fish passage facilities will be operated. It also will include routine maintenance activities during and outside the fish passage season, and development of an annual report summarizing the status of the fish passage facilities and any needed repairs or equipment replacement.

r. Article A400. Bald Eagle Protection Plan

Under this proposed license article, FirstLight will implement the Bald Eagle Protection Plan dated January 2023 as filed with the Flows and Fish Passage Settlement Agreement.

s. Article A410. Bat Protection Measures

FirstLight will implement specified measures to protect habitat for state and federally listed bat species.

2. Proposed License Articles for the Northfield Mountain Project

a. Article B100. Project Operations

Under the Settlement Agreement, FirstLight will increase the usable storage of the Northfield Mountain Project's upper reservoir from the current elevation range of 1000.5 to 938 feet NGVD29, to an elevation range of 1004.5 to 920 feet. The purpose of this change is to provide regional electric reliability benefits by expanding Northfield's ability to store large quantities of energy and enhancing its ability to deliver long-duration and flexible capacity when it is most needed. The Northfield Mountain Project is ISO-NE's best tool in continually maintaining the load and generation balance throughout New England. When large generation sources, including the region's nuclear generators, and transmission lines with neighboring systems shut down unexpectedly, the Northfield Mountain Project is able to fill the generation void without the need to start an equivalent amount of oil and natural gas fueled generators. This supports system reliability while reducing the carbon footprint of the region. In recognition of these reliability benefits, FERC has approved temporary amendments in the past to operate between 1004.5 and 920 feet when needed to support ISO-NE system needs.

Increasing the upper reservoir storage will have no adverse environmental effects. FirstLight evaluated expanded upper reservoir storage operations in the operations model and within the erosion modeling, which showed no increase in shoreline erosion. FirstLight nor any

other entity has identified potential adverse effects of the expanded operations on protected, threatened, or endangered species.

Also, under Proposed License Article B100, FirstLight would continue to operate the Northfield Mountain Project in accordance with its existing agreement with the Corps. This is the reciprocal proposed license article to Proposed License Article A160 for the Turners Falls Project.

b. Article B200. Fish Intake Protection and Consultation

To improve downstream fish passage for juvenile and adult shad and adult eel, FirstLight will install a seasonally operated barrier net around the Northfield Mountain Project tailrace/intake. Operation of the barrier net during the June 1 to November 15 downstream migration period will prevent the entrainment and mortality of adult and juvenile shad and adult eel. The barrier net will be operational no later than June 1 in the seventh year after license issuance.

c. Article B210. Initial Intake Protection Effectiveness Testing and Fish Passage Performance Goals

FirstLight will complete construction of the fish barrier net, operate it for one season (shakedown year), and then conduct representative and quantitative fish passage initial effectiveness testing to measure the results against fish and wildlife agency performance goals as set out in Proposed License Article B210.

d. Article B220. Downstream Fish Passage - Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Studies

Proposed License Article B220 sets out a schedule for up to three rounds of downstream fish passage effectiveness testing and reporting during the first 20 years of the license term, as needed to meet the fishery agency performance goals. If the effectiveness testing shows that the agency performance goals are not being met, then Proposed License Article B220 sets forth an agreed upon list of AMMs that may be implemented. In addition to the initial effectiveness testing, FirstLight will conduct effectiveness testing after each of two rounds of AMMs to determine

progress toward meeting the performance goals. No other AMMs other than those specified in the proposed license article will be required for the first 25 years of the license unless expressly agreed to by FirstLight, MDFW, NMFS, and USFWS.

e. Article B230. Fishway Operating Periods

Under this proposed license article, FirstLight will operate the barrier net for downstream passage from June 1 to November 15. This operating period may be refined based on consultation among FirstLight, MDFW, NMFS, and USFWS.

f. Article B240. Fish Passage Facility Operation and Maintenance Plan for Barrier Net

Under this proposed license article, FirstLight will develop and implement a Fish Passage Operation and Maintenance Plan in consultation with MDFW, NMFS, and USFWS. The plan will detail how and when the barrier net will be operated. It also will include routine maintenance activities during and outside the fish passage season, and development of an annual report summarizing the status of the fish passage facilities and any needed repairs or equipment replacement.

g. Article B300. Bald Eagle Protection Plan

Under this proposed license article, FirstLight will implement the Bald Eagle Protection Plan dated January 2023 as filed with the Settlement Agreement.

h. Article B310. Bat Protection Measures

FirstLight will implement specified measures to protect habitat for state and federally listed bat species.

3. Fifty-Year License Terms

As stated in the Settlement Agreement, the Settling Parties agree that the investment of funds and other commitments associated with the terms of this Settlement Agreement justify the

issuance of 50-year licenses for the Projects. Accordingly, all of the Settling Parties support FirstLight's request in its AFLAs for New License terms of 50 years.¹⁴ Where settling parties so request, it is the Commission's policy to defer to the settling parties.¹⁵ Under the terms of the Settlement Agreement, a license term less than 50 years is defined as Inconsistent with this Settlement Agreement, permitting FirstLight to withdraw from the Settlement Agreement.¹⁶

B. Off-License Provisions

1. Ichthyoplankton Fund

FirstLight has agreed to provide funding for habitat improvement projects and/or shad fishery management activities to offset the potential loss of ichthyoplankton (shad eggs and larvae) through entrainment at the Northfield Mountain Project. FirstLight will make the payments to the USFWS or its designee, which will select and carry out the projects and activities. FirstLight's total contributions will be \$1,296,281 over the 50-year license term.

2. Cobblestone Tiger Beetle Fund

FirstLight will provide funding for conservation and management activities for CTBs, a species listed as endangered by the Commonwealth of Massachusetts. FirstLight will make payments to MDFW or its designee, which will select the projects and administer the funds. FirstLight's total contributions will be \$980,000 over the first 12 years of the new license.

3. Agency Support for Vernon Flow Data

As discussed above, flow stabilization operations under the new Turners Falls Project license will involve releasing the NRF as received in part from the upstream Vernon Project.

¹⁴ Flows and Fish Passage Settlement Agreement, Section 4.5.2.

¹⁵ See Settlement Policy Statement at P 15. The Settlement Policy Statement indicates that another factor in setting the license term is to coordinate license expiration for projects located in the same river basin. *Id.* If the Commission desires to coordinate new license terms for the Projects with the upstream Project Nos. 1855, 1892, and 1904, the Commission clearly has discretion to issue those projects 50-year licenses as well.

¹⁶ Flows and Fish Passage Settlement Agreement, Sections 1.3.6, 6.1.

FirstLight also has committed to seek to smooth out Vernon Project flex operations. FirstLight's ability to reoperate the Turners Falls Project to accomplish these objectives requires reliable information about Vernon Project releases in advance of those releases reaching the Turners Falls Dam.

MDFW has agreed to request from FERC that the licensee of the Vernon Project be required in its new license to provide FirstLight the following upon license issuance:

- Electronically provide by 8:00 am of each day, the next day's 24 hour anticipated Vernon Project total discharge. The next day's 24-hour anticipated Vernon Project total discharge will be updated once the day ahead power bidding market closes and ISO-NE issues the day ahead schedule. If ISO-NE updates the day ahead hourly Vernon Project total discharge, then that revised schedule shall be provided to FirstLight within two hours of the Vernon Project licensee receiving an update from ISO-NE.
- Electronically provide the instantaneous Vernon Project total discharge and tailwater elevation.

4. Voluntary Efforts to Achieve Flow Stabilization Below Cabot Station

Proposed License Article A160 will require measures to improve flow stabilization below Cabot Station for the benefit of aquatic resources. The flow stabilization measures would not be enforceable license requirements for the first three years after license issuance to allow FirstLight to gain experience with how to successfully implement them. However, FirstLight has committed to begin implementing the flow stabilization measures voluntarily upon license issuance. As this will be a voluntary effort by FirstLight, it is appropriate as an off-license agreement rather than a FERC-enforceable license requirement. The agreement also includes periodic reporting by

FirstLight to the other Settling Parties on FirstLight's progress in achieving the flow stabilization objectives.

III. CONCLUSION

For all of the above reasons, the Commission should adopt the proposed license articles into the new Project licenses without material modification and issue FirstLight new Project licenses for terms of 50 years.

Respectfully submitted,

/s/ Michael A. Swiger

Michael A. Swiger

Van Ness Feldman, LLP

1050 Thomas Jefferson Street, NW

Seventh Floor

Washington, DC 20007

(202) 298-1800

mas@vnf.com

Counsel to FirstLight Hydro MA LLC
and Northfield Mountain LLC

DATED: March 31, 2023

FLOWS AND FISH PASSAGE SETTLEMENT
AGREEMENT

**FOR THE RELICENSING OF THE TURNERS FALLS
HYDROELECTRIC PROJECT, FERC PROJECT NO. 1889, AND
NORTHFIELD MOUNTAIN PUMPED STORAGE PROJECT,
FERC PROJECT NO. 2485**

MARCH 2023



**FLAWS AND FISH PASSAGE SETTLEMENT AGREEMENT FOR THE
RELICENSING OF THE TURNERS FALLS HYDROELECTRIC PROJECT, FERC
PROJECT NO. 1889, AND NORTHFIELD MOUNTAIN PUMPED STORAGE PROJECT,
FERC PROJECT NO. 2485**

TABLE OF CONTENTS

APPENDICES..... v

RECITALS..... 1

TERMS OF AGREEMENT..... 3

 1 General Provisions.....3

 1.1 Effective Date of Settlement Agreement..... 3

 1.1.1 FirstLight’s Affirmative Acceptance of License 3

 1.1.2 Effective Date of Parties’ Obligations 3

 1.2 Term of Settlement Agreement 3

 1.3 Definitions..... 3

 1.4 Acronyms 6

 2 Purpose of Settlement Agreement..... 6

 2.1 Purpose..... 6

 2.2 No Precedent for Other Proceedings 7

 3 Compliance with Legal Responsibilities and Reservations of Rights..... 7

 3.1 Regulatory Parties 7

 3.2 No Effect on Parties’ Other Legal Duties..... 8

 3.3 Future Relicensings..... 8

 4 Settlement Agreement Commitments and Implementation.....8

 4.1 Parties Bound by Settlement Agreement..... 8

 4.2 Fishway Prescriptions and Section 10(a) and 10(j) Recommendations..... 8

 4.2.1 Protection, Mitigation and Enhancement Measures to Be
 Included in Section 18 Fishway Prescriptions and Section 10(a)
 and 10(j) Recommendations 8

4.2.2	Fishway Prescriptions Inconsistent with Settlement Agreement	9
4.3	ESA Consultation.....	10
4.3.1	Biological Opinions.....	10
4.3.2	Biological Opinion and Incidental Take Statement Inconsistent with This Settlement Agreement.....	11
4.4	CWA Section 401 Certification.....	11
4.4.1	Protection, Mitigation and Enhancement Measures Recommended to Be Included in CWA Section 401 Certifications	11
4.4.2	Section 401 Certifications Inconsistent with This Settlement Agreement	12
4.5	New Project Licenses.....	13
4.5.1	Support for Issuance of New Project Licenses	13
4.5.2	Term of New Project Licenses	13
4.5.3	Comments on the NEPA Document	13
4.5.4	PM&E Measures Recommended to Be Included in New Project Licenses	13
4.5.5	New Project Licenses Inconsistent with This Settlement Agreement	13
4.6	Cooperation Among Parties.....	15
4.7	Support for Implementation.....	15
4.8	Defense Against PM&E Measures Inconsistent with This Settlement Agreement.....	15
4.9	Responsibility for Compliance with New Project Licenses.....	15
4.10	Availability of Funds	16
4.11	Implementation	16
4.11.1	Implementation Schedule.....	16
4.11.2	Permits	16

4.12	Reopener or Amendment of New Project Licenses	17
	4.12.1 Limitation on Reopeners and Modifications.....	17
	4.12.2 Amendment of New Project Licenses.....	17
4.13	Compliance with FERC Project Safety and Other Directives.....	19
4.14	Amendment of Settlement Agreement	19
5	Dispute Resolution.....	19
5.1	General Applicability.....	19
5.2	Process.....	20
	5.2.1 Dispute Initiation Notice	20
	5.2.2 Informal Meetings	20
	5.2.3 Mediation.....	20
	5.2.4 Dispute Resolution Notice	21
5.3	Enforcement of Settlement Agreement After Dispute Resolution.....	21
	5.3.1 Enforcement Regarding New Project Licenses	21
	5.3.2 Enforcement Regarding Contractual Obligations.....	21
6	Withdrawal from Settlement Agreement.....	22
6.1	Withdrawal of Party from Settlement.....	22
6.2	Withdrawal of FirstLight from Settlement Agreement Prior to Acceptance of the New Project Licenses	22
6.3	Effective Date of Withdrawal.....	22
6.4	Continuity After Withdrawal	22
6.5	Termination of Settlement Agreement	23
7	General Provisions.....	23
7.1	Non-Severable Terms of Settlement Agreement.....	23
7.2	No Third-Party Beneficiaries.....	24
7.3	Successors and Assigns	24

	7.3.1	Assignment.....	24
	7.3.2	Succession	24
	7.3.3	Continuation of Certain Obligations	24
	7.3.4	Notice	25
7.4		Extension of Time; Inability to Perform.....	25
	7.4.1	Obligations under New Project Licenses.....	25
	7.4.2	Contractual Obligations.....	25
	7.4.3	Notice of Delay or Inability to Perform	26
7.5		Governing Law	26
7.6		Elected Officials Not to Benefit	26
7.7		No Partnership.....	26
7.8		Reference to Regulations	26
7.9		Notice	26
7.10		Section Titles for Convenience Only.....	27
8		Execution of Settlement Agreement.....	27
	8.1	Signatory Authority	27
	8.2	Signing in Counterparts	27

APPENDICES

- Appendix A - Protection, Mitigation, and Enhancement Measures Recommended to be Included in the New Turners Falls Hydroelectric Project License
- Appendix B - Protection, Mitigation, and Enhancement Measures Recommended to be Included in the New Northfield Mountain Pumped Storage Project License
- Appendix C - Measures Agreed to Among the Parties But Not to Be Included in New Project Licenses
- Appendix D - Authorized Representatives of the Parties

This Relicensing Settlement Agreement for the Turners Falls Hydroelectric Project and Northfield Mountain Pumped Storage Project (“Settlement Agreement”) is made and entered into pursuant to Federal Energy Regulatory Commission (“Commission” or “FERC”) Rule 602, 18 C.F.R. § 385.602, by and among:

FirstLight MA Hydro LLC
Northfield Mountain LLC
National Marine Fisheries Service
U.S. Fish and Wildlife Service
Massachusetts Division of Fisheries and Wildlife
The Nature Conservancy
American Whitewater
Appalachian Mountain Club
Crab Apple Whitewater, Inc.
New England FLOW
Zoar Outdoor

each referred to individually as a “Party” and collectively as “Parties.”

RECITALS

WHEREAS,

- A. FirstLight MA Hydro LLC and Northfield Mountain LLC (collectively, “FirstLight”) are the FERC licensees for the Turners Falls Hydroelectric Project, FERC Project No. 1889 (“Turners Falls Project”), and Northfield Mountain Pumped Storage Project, FERC Project No. 2485 (“Northfield Mountain Project”), respectively. Both the license for the Turners Falls Project and the license for the Northfield Mountain Project (collectively, “Projects”) expired on April 30, 2018. The Projects have been operating on annual licenses pursuant to Section 15 of the Federal Power Act (“FPA”) since that time.
- B. In accordance with the requirements of the FPA and FERC’s regulations, FirstLight filed a Notice of Intent to file an application for new license for each of the Projects on October 31, 2012. Pursuant to FERC’s Integrated Licensing Process, FirstLight then engaged with relicensing participants, FERC, and the public in scoping environmental issues related to the Projects and in developing and implementing a rigorous study plan to assess the Projects’ environmental impacts.
- C. As required by the FPA and FERC’s regulations, FirstLight filed a Final Application for New License (“FLA”) for the Projects with FERC on April 29, 2016. Because certain environmental studies required by FERC had not yet been completed as of the statutory deadline for filing of the FLA, FirstLight filed a separate Amended Final License Application for each Project (“AFLAs”) on December 4, 2020, including FirstLight’s proposed protection, mitigation and enhancement (“PM&E”) measures to be included in the new licenses and the scientific and evidentiary basis for those measures.

- D. In 2017, FirstLight began formal settlement discussions with relicensing participants, in particular, discussions with state and federal fish and wildlife agencies on fish passage and flow issues. Those discussions did not result in agreement on all fish passage and flow issues, but nevertheless informed FirstLight’s PM&E proposals in the AFLAs. FirstLight’s PM&E proposals in the AFLAs also were informed by further non-FERC required environmental studies undertaken in consultation with the state and federal fish and wildlife agencies, which FirstLight filed into the FERC record.
- E. Following submittal of the AFLAs, FirstLight, the state and federal fish and wildlife agencies, and certain conservation organizations resumed discussions on fish passage and flows, which resulted in an Agreement in Principle which FirstLight filed with FERC on March 18, 2022. The same Parties reached an Amended Agreement in Principle on fish passage and flows to address fish passage adaptive management and certain other matters, which FirstLight filed with FERC on October 31, 2022. FirstLight separately engaged with whitewater boating interests and entered into an Agreement in Principle which FirstLight filed with FERC on February 28, 2022. Because of certain inconsistencies between the fish passage and flow agreement and the whitewater boating agreement, the parties to both agreements engaged in mutual discussions to bridge the gaps. Those discussions resulted in updates that have been incorporated into this Settlement Agreement.
- F. While FERC and the Massachusetts Department of Environmental Protection (“MADEP”) have not been directly involved in settlement negotiations, FirstLight and other Parties have kept FERC and MADEP generally apprised with periodic reports of their progress. Additionally, FirstLight and other Parties have at critical junctures requested FERC to continue to defer its Ready for Environmental Analysis (“REA”) notice requesting comments, protests and interventions on FirstLight’s applications for new license in order to give the Parties time to negotiate a final settlement agreement and resolve remaining outstanding issues. MADEP has been supportive of continued settlement discussions in filings with FERC. The Parties appreciate FERC’s agreement to defer its REA notice during this time to allow the Parties to focus on finalizing the Settlement Agreement.
- G. This Settlement Agreement is the end product of the Parties’ work on: (1) fish passage, (2) flows for fishery, ecological conservation and recreation purposes, and (3) protected, threatened and endangered species, and as to the Parties, addresses all outstanding issues for the relicensing of the Projects on those topics (“Topics within the Scope of this Agreement”).
- H. In the course of settlement negotiations, FirstLight developed additional technical materials in support of those discussions. The additional materials will be filed with FERC as relevant and appropriate to the Settlement Agreement.
- I. FERC has stated its intent to do a comprehensive environmental review that includes FirstLight’s Projects as well as the upstream Project Nos. 1855, 1892, and 1904. This Settlement Agreement has been negotiated with the understanding that FirstLight’s

operation of the Projects is in part governed by and dependent upon operations of the upstream projects.

TERMS OF AGREEMENT

NOW THEREFORE, in consideration of the mutual covenants set forth herein, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1 General Provisions

1.1 Effective Date of Settlement Agreement

Except as provided in Section 1.1.1, this Settlement Agreement shall become effective upon the execution by all Parties of this Settlement Agreement (“Effective Date”).

1.1.1 FirstLight’s Affirmative Acceptance of License

FirstLight’s contractual obligation to the Parties to implement the measures set forth in Appendix C of this Settlement Agreement shall become effective only upon FirstLight’s acceptance, in its sole discretion, of the Final New Project Licenses. Within 45 days of the New Project Licenses becoming Final, FirstLight shall provide Notice to all Parties whether it affirmatively accepts the New Project Licenses and its concomitant obligations under this Settlement Agreement. If FirstLight does not timely provide such Notice, it shall be deemed to have affirmatively accepted the New Project Licenses. If FirstLight rejects the New Project Licenses this Settlement Agreement will terminate pursuant to Section 6.5, and will not be binding on FirstLight or any other Party in any subsequent proceeding at FERC or otherwise.

1.1.2 Effective Date of Parties’ Obligations

The Parties’ obligations under Sections 2 through 8, including the obligation to support this Settlement Agreement in the relicensing and related regulatory proceedings, take effect on the Effective Date.

1.2 Term of Settlement Agreement

The term of this Settlement Agreement shall commence on the Effective Date and shall continue (unless terminated as otherwise provided herein) for the term of the New Project Licenses plus the term(s) of any annual license(s) that may be issued after the foregoing New Project Licenses have expired.

1.3 Definitions

1.3.1 Commission or FERC shall mean the Federal Energy Regulatory Commission.

1.3.2 Consultation shall mean the process under this Settlement Agreement by which FirstLight seeks views through providing drafts of proposals, plans and reports, and seeking and considering comments on such proposals, plans, and reports as appropriate from relevant Parties. Consultation under this Settlement Agreement shall not be construed to satisfy “consultation” under Section 7 of the Endangered Species Act (“ESA”) or other federal laws specifically requiring consultation, unless specifically noted.

1.3.3 Disputing Party or Disputing Parties shall mean the Party providing Notice of the dispute, the Party alleged to have failed to perform an obligation, and any other Party that provides Notice of its intent to participate in the dispute resolution.

1.3.4 Final, with respect to the New Project Licenses under this Settlement Agreement, shall mean such licenses after exhaustion of administrative and judicial remedies for any challenge which any Party or other person brings against the New Project Licenses or against any other regulatory approval integral to issuance of the New Project Licenses.

1.3.5 Fishway Prescription shall mean a prescription issued by the National Marine Fisheries Service (“NMFS”) or the U.S. Fish and Wildlife Service (“USFWS”) under Section 18 of the FPA, whether designated as preliminary, modified or final.

1.3.6 Inconsistent with this Settlement Agreement shall mean: (1) any material modification to, deletion of, or addition to the Proposed License Articles in the New Project Licenses; (2) any material modification to, deletion of, or addition to the Proposed License Articles in any Fishway Prescription, ESA Section 7 Biological Opinion, or Clean Water Act (“CWA”) Section 401 Certification issued in connection with the New Project Licenses; (3) changes to the Projects proposed by FirstLight that are materially inconsistent with the assumptions underlying the Settlement Agreement; or (4) New Project Licenses issued for terms of less than 50 years. The term “material” for purposes of this section means a deviation from the Proposed License Articles that, either individually or collectively with other such deviations, substantially affects a Party’s bargained-for benefits under this Settlement Agreement.

1.3.7 Inconsistent with this Settlement Agreement shall not mean: (1) the inclusion of standard articles from the appropriate L-Form (as defined by 18 C.F.R. § 2.9) in the New Project Licenses; (2) FERC’s reservation of its authority to require changes to implementation schedules, plans, or other requirements of the New Project Licenses; (3) the inclusion in any Fishway Prescription of the issuing agency’s reservation of authority to reopen its prescription, provided that the reservation of authority is consistent with this Settlement Agreement, and provided further that each Party reserves its right to contest the exercise of such reserved authority at such time as the agency may exercise the reserved authority; (4) the inclusion in any ESA Section 7 Biological Opinion of the issuing agency’s

criteria for re-initiation of Section 7 consultation pursuant to 50 C.F.R. § 402.16; or (5) the inclusion in the New Project Licenses, any Fishway Prescription, any ESA Section 7 Biological Opinion, or any CWA Section 401 Certification, of such reasonable minimization and reporting requirements as FERC or the issuing agency determines are necessary to ensure FirstLight's compliance.

1.3.8 Material New Information shall mean significant and relevant new information which was neither in the administrative record for the relicensing nor otherwise known as of the Effective Date to the Party who seeks to use the Material New Information. Each Party agrees in good faith to share any such information with the other Parties in a timely manner.

1.3.9 New Project Licenses shall mean the new licenses, not to include any annual license extending the current licenses, issued by the Commission to FirstLight pursuant to Section 15 of the FPA for the continued operation of Project Nos. 1889 and 2485.

1.3.10 Notice shall mean a written communication which meets the requirements of Section 7.9 and any other requirements for notice specifically provided in any other applicable section of this Settlement Agreement.

1.3.11 Party or Parties shall mean the signatories to this Settlement Agreement.

1.3.12 Projects shall mean the Turners Falls Hydroelectric Project, currently licensed to FirstLight MA Hydro LLC as FERC Project No. 1889, and the Northfield Mountain Pumped Storage Project, currently licensed to Northfield Mountain LLC as FERC Project No. 2485.

1.3.13 Proposed License Articles shall mean the terms and conditions set forth in Appendices A and B of this Settlement Agreement that the Parties request that the Commission include in the New Project Licenses for the continued operation of the Projects.

1.3.14 Regulatory Party (collectively, "Regulatory Parties") shall mean USFWS, NMFS, and the Massachusetts Division of Fisheries and Wildlife ("MDFW").

1.3.15 Settlement Agreement shall mean the entirety of this Settlement Agreement, including the Appendices.

1.4 Acronyms

- 1.4.1** AFLAs – Amended Final License Applications
- 1.4.2** CWA – Clean Water Act
- 1.4.3** ESA – Endangered Species Act
- 1.4.4** FERC – Federal Energy Regulatory Commission
- 1.4.5** FLA – Final License Application
- 1.4.6** FPA – Federal Power Act
- 1.4.7** MADEP – Massachusetts Department of Environmental Protection
- 1.4.8** MDFW – Massachusetts Division of Fisheries and Wildlife
- 1.4.9** NMFS – National Marine Fisheries Service
- 1.4.10** NEPA – National Environmental Policy Act
- 1.4.11** PM&E – protection, mitigation and enhancement measure
- 1.4.12** REA – Ready for Environmental Analysis
- 1.4.13** USFWS – U.S. Fish and Wildlife Service

2 Purpose of Settlement Agreement

2.1 Purpose

The Parties have entered into this Settlement Agreement for the purpose of resolving all issues that have or could have been raised by the Parties in connection with FERC’s orders issuing New Project Licenses relating to Topics within the Scope of this Agreement. While recognizing that several regulatory and statutory processes are not yet completed, it is the Parties’ intention that this Settlement Agreement considers all significant issues related to the authority of Regulatory Parties concerning Topics within the Scope of this Agreement that may arise in the issuance of all regulatory approvals integral to FERC’s issuance of the New Project Licenses, including but not limited to ESA Section 7 Biological Opinions to be issued by USFWS and NMFS, the CWA Section 401 Certifications to be issued by MADEP, and any Environmental Impact Statement or Environmental Assessment issued pursuant to the National Environmental Policy Act (“NEPA”). The Parties recognize that MADEP is the agency responsible for Section 401 Certification and is not a Party to this Settlement Agreement. Pursuant to the Parties’ various rights, authorities, and responsibilities under Sections 10(a), 10(j), and 18 of the FPA, as well as other statutory and regulatory authorities and implied powers, this Settlement Agreement is intended to establish FirstLight’s obligations concerning Topics within the Scope of this Agreement for the protection, mitigation and enhancement of resources affected by the Projects under the New Project Licenses. It also specifies procedures to be used among the Parties to ensure that implementation of the New Project Licenses is not Inconsistent with this Settlement Agreement, and with other legal and regulatory mandates. Except as specifically provided below, each of the Regulatory Parties agrees that FirstLight’s performance of its obligations under this Settlement Agreement will be consistent with and is intended to fulfill FirstLight’s existing statutory and regulatory obligations as to each Regulatory Party relating to the relicensing of the Projects with respect to Topics within the Scope of this Agreement.

2.2 No Precedent for Other Proceedings

This Settlement Agreement is made with the understanding that it constitutes a negotiated resolution of issues relating to Topics within the Scope of this Agreement for the New Project Licenses. Accordingly, this Settlement Agreement shall not be offered against a Party as argument, admission or precedent in any mediation, arbitration, litigation, or other administrative or legal proceeding that does not involve or relate to the New Project Licenses or the operation of the Projects. Further, no Party shall be deemed to have approved, admitted, accepted, or otherwise consented to any operation, management, valuation, or other principle underlying any of the matters covered by this Settlement Agreement, except as expressly provided herein. With respect to any mediation, arbitration, litigation, or other administrative or legal proceeding involving or relating to the New Project Licenses, the Parties' rights and responsibilities shall be as set forth in this Settlement Agreement. This Section shall survive any termination of this Settlement Agreement.

3 Compliance with Legal Responsibilities and Reservations of Rights

3.1 Regulatory Parties

3.1.1 Except as otherwise provided in this Settlement Agreement, by entering into this Settlement Agreement, each Regulatory Party represents that it believes and expects, based on the information known to it at time of signature, that: (1) the Proposed License Articles set forth in Appendices A and B are likely to satisfy the statutory, regulatory, or other legal requirements for the protection, mitigation, and enhancement of natural resources with respect to Topics within the Scope of this Agreement under the New Project Licenses; and (2) the Regulatory Party's statutory, regulatory, or other legal responsibilities with respect to Topics within the Scope of this Agreement are, or can be, met through approval without material modification of this Settlement Agreement and subsequent implementation of the New Project Licenses. This representation applies only to those requirements that the Regulatory Party administers.

3.1.2 Nothing in this Settlement Agreement is intended or shall be construed to be an irrevocable commitment of resources or a pre-decisional determination by a Regulatory Party. After the Effective Date of this Settlement Agreement but prior to the issuance of the New Project Licenses, each Regulatory Party will participate in the relicensing proceeding, including environmental review and consideration of public comments, as required by applicable law. Further, NMFS and USFWS shall consult with FERC under the ESA. Each Regulatory Party shall consider any new information arising in the relicensing proceeding or ESA consultation, as required by applicable law.

3.1.3 The Regulatory Parties agree that, throughout the duration of the term of this Settlement Agreement, they will not exercise any statutory or regulatory authority under currently applicable federal or state law in a manner that is

Inconsistent with this Settlement Agreement, absent Material New Information and except as provided in Section 4.12. Any reservation of authority of USFWS or NMFS pursuant to Section 18 of the FPA and any exercise of such reserved authority shall be consistent with the provisions of this Settlement Agreement, including Section 4.12.

3.2 No Effect on Parties' Other Legal Duties

Nothing in this Settlement Agreement is intended to, or shall be construed to, affect or limit the authority or obligation of any Party to fulfill its constitutional, statutory, and regulatory responsibilities or to comply with any judicial decision or order.

3.3 Future Relicensings

Nothing in this Settlement Agreement is intended or shall be construed to affect or restrict any Party's participation in or comments about the provisions of any future relicensing of the Projects subsequent to the current relicensing.

4 Settlement Agreement Commitments and Implementation

4.1 Parties Bound by Settlement Agreement

Each Party shall be bound by this Settlement Agreement for the term stated in Section 1.2, provided the Final New Project Licenses are not Inconsistent with this Settlement Agreement and the Party has not withdrawn from the Settlement Agreement under Section 6 of this Settlement Agreement.

4.2 Fishway Prescriptions and Section 10(a) and 10(j) Recommendations

4.2.1 Protection, Mitigation and Enhancement Measures to Be Included in Section 18 Fishway Prescriptions and Section 10(a) and 10(j) Recommendations

(1) Preliminary Fishway Prescriptions and any flow or fish passage recommendations under FPA Sections 10(a) and 10(j) of the Parties shall not be Inconsistent with this Settlement Agreement;

(2) Any information, comments, or responses to comments regarding flows and/or fish passage by the Parties in the context of relicensing of the Projects shall not be Inconsistent with this Settlement Agreement;

(3) The Parties shall use reasonable efforts to obtain FERC orders approving this Settlement Agreement and issuing New Project Licenses not Inconsistent with this Settlement Agreement in a timely manner;

(4) The Parties shall support, in all relevant regulatory proceedings in which they

participate, regulatory actions regarding flows and/or fish passage not Inconsistent with this Settlement Agreement; and

(5) A Party may only use Material New Information to submit comments or recommendations under Sections 10(a) or 10(j) Inconsistent with this Settlement Agreement if it believes in good faith that such information significantly undermines the Settlement Agreement, taken as a whole for the affected Party, and significantly affects the adequacy of the Proposed License Articles under Sections 10(a) or 10(j).

4.2.2 Fishway Prescriptions Inconsistent with Settlement Agreement

4.2.2.1 NMFS and USFWS intend that any Fishway Prescriptions submitted to FERC in connection with the issuance of the New Project Licenses will not be Inconsistent with this Settlement Agreement, in particular, Proposed License Articles A300, A310, A320, and A330 for the Turners Falls Project and Articles B200, B210, and B220 for the Northfield Mountain Project.

4.2.2.2 If any Fishway Prescription is Inconsistent with this Settlement Agreement, the Settlement Agreement shall be deemed modified to conform to the inconsistency unless a Party provides Notice to the other Parties that it objects to the inconsistency and initiates dispute resolution within 30 days after the date the inconsistent Fishway Prescription is filed with FERC.

4.2.2.3 The Disputing Party may exercise any right it may have to request an agency trial-type hearing on issues of material fact under Section 18 of the FPA, and propose alternatives under Section 33 of the FPA, with respect to any Fishway Prescriptions that include an inconsistency with this Settlement Agreement, even if other provisions in the Fishway Prescriptions are not Inconsistent with the Settlement Agreement. The Disputing Party may also seek administrative review at FERC and any other administrative and/or judicial remedies provided by law. The Parties shall follow the dispute resolution process to the extent reasonably practicable while any such appeal of an inconsistent action is pursued.

4.2.2.4 Except as provided in Section 4.5.5.4 for omissions based on jurisdiction or if the Settlement Agreement is terminated pursuant to Section 6.5, if any Fishway Prescriptions are Inconsistent with this Settlement Agreement after a final and non-appealable administrative or judicial decision, this Settlement Agreement shall be deemed modified to conform to that decision.

4.2.2.5 If the Fishway Prescriptions are not Inconsistent with this Settlement Agreement, each Party waives any right it may have to request

an agency trial-type hearing on issues of material fact under Section 18 of the FPA, and to propose alternatives under Section 33 of the FPA. The Parties shall not support any trial-type hearing request by any non-party and will make reasonable efforts to support USFWS and NMFS, as appropriate, if a trial-type hearing is requested by any non-party. If a non-party requests a trial-type hearing, the Parties may intervene in the hearing to support this Settlement Agreement.

4.3 ESA Consultation

4.3.1 Biological Opinions

FERC has designated FirstLight as FERC's non-federal representative for carrying out informal consultation with NMFS and USFWS under Section 7 of the ESA. As part of this informal consultation, FirstLight submitted as part of its AFLAs draft Biological Assessments to assist FERC's preparation of Biological Assessments for purposes of Section 7 consultation with NMFS and USFWS. Within 180 days of the Effective Date, FirstLight will file with FERC revised draft Biological Assessments reflecting the relevant PM&E measures agreed to as part of this Settlement Agreement and asking FERC to consider and adopt them as part of the proposed actions for the Section 7 consultations between FERC and NMFS, and FERC and USFWS. Any Biological Opinions relating to the New Project Licenses shall address and evaluate the provisions that FERC incorporates into its proposed actions. As of the Effective Date, NMFS and USFWS represent that they enter into this Settlement Agreement believing that the information in the record supports the PM&E measures provided herein. However, NMFS and USFWS are not making a pre-decisional determination of the outcome of any Section 7 consultation and expressly reserve the right to issue any Reasonable and Prudent Measures and Terms and Conditions in any Biological Opinions and Incidental Take Statements as necessary to meet their obligations under the ESA.

Further, the Parties acknowledge the ESA consultation will be based on FERC's proposed actions, the species listed under the ESA at the time of the consultation, and the best information available at the time of the consultation. Per the implementing regulations for Section 7 of the ESA, a consultation shall be reinitiated if any of the criteria at 50 C.F.R. § 402.16 are met. The outcome of future consultations on the Projects, during or after the term of the New Project Licenses, will not be limited by the content of this Settlement Agreement. Per 50 C.F.R. § 402.14(i)(2), formal consultations that result in non-jeopardy Biological Opinions must adhere to the "minor change rule."

4.3.2 Biological Opinion and Incidental Take Statement Inconsistent with This Settlement Agreement

4.3.2.1 Consistent with Section 4.3.1, NMFS and USFWS anticipate that the measures contained in this Settlement Agreement will minimize any incidental take occurring as a result of implementation of this Settlement Agreement for species listed as threatened or endangered as of the Effective Date, and that any Reasonable and Prudent Measures and/or Terms and Conditions contained in any Biological Opinions and Incidental Take Statements will not be Inconsistent with this Settlement Agreement.

4.3.2.2 If any Biological Opinion or Incidental Take Statement issued pursuant to Section 7 of the ESA is Inconsistent with this Settlement Agreement, this Settlement Agreement shall be deemed modified to conform to the provisions of the Biological Opinion and Incidental Take Statement, unless a Party provides Notice to the other Parties that it objects to the inconsistency and initiates dispute resolution within 30 days after the Biological Opinion and Incidental Take Statement are filed with FERC.

4.3.2.3 The Disputing Party may, to the extent provided by applicable law, seek administrative and/or judicial review of any Biological Opinion or Incidental Take Statement that is Inconsistent with this Settlement Agreement. The Parties shall follow the dispute resolution process to the extent reasonably practicable while such administrative or judicial review is pursued.

4.3.2.4 Except as provided in Section 4.5.5.4 for omissions based on jurisdiction or if the Settlement Agreement is terminated pursuant to Section 6.5, if any Biological Opinion or Incidental Take Statement is Inconsistent with this Settlement Agreement after a final and non-appealable decision on the administrative or judicial action, this Settlement Agreement shall be deemed modified to conform to the final decision.

4.4 CWA Section 401 Certification

4.4.1 Protection, Mitigation and Enhancement Measures Recommended to Be Included in CWA Section 401 Certifications

Any Party participating in the Section 401 Certification process shall request that MADEP accept and incorporate, without material modifications, as conditions to the Section 401 Certifications, all the PM&E measures stated in Appendices A and B of the Settlement Agreement that are within the MADEP's jurisdiction pursuant to Section 401 of the CWA. The Parties shall further request that

MADEP not include as conditions to the Section 401 Certifications additional conditions that are Inconsistent with this Settlement Agreement.

4.4.2 Section 401 Certifications Inconsistent with This Settlement Agreement

4.4.2.1 If the MADEP denies FirstLight's application for Section 401 Certification for either of the Projects, the Parties agree such denial shall be considered Inconsistent with this Settlement Agreement, unless (1) the denial is without prejudice, and (2) the denial is not based on a determination that the PM&E measures in Appendices A and B of this Settlement Agreement are insufficient for MADEP to issue Section 401 Certifications based on those PM&E measures. If the MADEP issues the Section 401 Certifications and any condition of a Section 401 Certification is Inconsistent with this Settlement Agreement, the Settlement Agreement shall be deemed modified to conform to the Section 401 Certification, unless a Party provides Notice to the other Parties that it objects to the inconsistency and initiates dispute resolution within 30 days after the issuance of the Section 401 Certification.

4.4.2.2 The Disputing Party may, to the extent provided by applicable law, seek administrative and/or judicial review of any Section 401 Certification or denial of Section 401 Certification that is Inconsistent with this Settlement Agreement. The Parties shall follow the dispute resolution process to the extent reasonably practicable while such administrative and/or judicial review is pursued.

4.4.2.3 If any Party or non-party seeks administrative and/or judicial review of a Section 401 Certification, FirstLight or any Party may request that FERC hold the New Project Licenses in abeyance pending a final adjudication of the Section 401 Certification. Any Party objecting to such a request may oppose it, after complying with the dispute resolution procedures of this Settlement Agreement.

4.4.2.4 Except as provided in Section 4.5.5.4 for omission based on jurisdiction or if the Settlement Agreement is terminated pursuant to Section 6.5, if any condition of a Section 401 Certification is Inconsistent with this Settlement Agreement after a final and non-appealable decision on the administrative or judicial action, this Settlement Agreement shall be deemed modified to conform to the final decision.

4.5 New Project Licenses

4.5.1 Support for Issuance of New Project Licenses

The Parties shall support and advocate through appropriate written communications to FERC, USFWS, NMFS, and MADEP on behalf of this Settlement Agreement and the PM&E measures stated in Appendices A and B hereto. The Parties agree not to propose, support, or advocate proposed PM&E measures Inconsistent with this Settlement Agreement, except as specifically permitted herein.

4.5.2 Term of New Project Licenses

The Parties agree that the investment of funds and other commitments associated with the terms of this Settlement Agreement justify the issuance of 50-year licenses and support FirstLight's request for 50-year licenses to FERC.

4.5.3 Comments on the NEPA Document

The Parties shall comment on any PM&E measure recommended by FERC in its draft or final NEPA document which, if approved in the New Project Licenses, would be Inconsistent with this Settlement Agreement. Such comment(s) would aim to urge FERC to adopt the full settlement terms before the issuance of the New Project Licenses.

4.5.4 PM&E Measures Recommended to Be Included in New Project Licenses

The Parties shall request that FERC accept and incorporate, without material modification, as license articles, all the PM&E measures stated in Appendices A and B of this Settlement Agreement. The Parties shall further request that FERC not include in the New Project Licenses PM&E measures that are Inconsistent with this Settlement Agreement.

The Parties shall request that measures and actions agreed to among the Parties as set forth in Appendix C not be incorporated in the New Project Licenses.

4.5.5 New Project Licenses Inconsistent with This Settlement Agreement

4.5.5.1 Consistency of Licenses with Settlement Agreement

If the New Project Licenses issued by FERC are Inconsistent with this Settlement Agreement, the Settlement Agreement shall be deemed modified to conform to the inconsistency, unless a Party provides Notice to the other Parties that it objects to the inconsistency and initiates dispute resolution within 30 days after the date of the FERC order issuing license.

4.5.5.2 Disputing Inconsistencies

The Disputing Party may, in addition, if it is a party to the FERC relicensing proceeding, petition FERC for rehearing and seek judicial review of the New Project Licenses. If any Party, including FirstLight, or non-party seeks rehearing or judicial review of the New Project Licenses, FirstLight may seek a stay or an extension of time of any or all requirements of the New Project Licenses. Any Party objecting to such a request may oppose it, after complying with the dispute resolution procedures of this Settlement Agreement.

4.5.5.3 Modification of Agreement if Inconsistency

Except as provided in Section 4.5.5.4 for omission based on jurisdiction and Section 4.5.5.5 for inclusion based on jurisdiction, or if the Settlement Agreement is terminated pursuant to Section 6.5, if a provision in the Final New Project Licenses is Inconsistent with this Settlement Agreement, this Settlement Agreement shall be deemed modified to conform to the final decision.

4.5.5.4 Omission Based on Jurisdiction

If the New Project Licenses do not contain all the PM&E measures stated in Appendices A and B because FERC expressly determines that it does not have jurisdiction to adopt or enforce the omitted PM&E measures, this Settlement Agreement shall not be deemed modified to conform to such omission, and such omission shall not be used as the basis for dispute among the Parties; provided that any PM&E measure that FERC excludes from Appendices A or B based on a lack of jurisdiction shall be automatically included in Appendix C without material modification (including all funds needed to carry out or implement any such PM&E measure).

4.5.5.5 Inclusion Based on Jurisdiction or Section 401 Certification

If the New Project Licenses include PM&E measures stated in Appendix C of this Settlement Agreement because FERC determines that such measures are required to be included under the FPA and are within FERC's jurisdiction to enforce, or MADEP includes such measures as conditions of a Section 401 Certification, such action shall not be considered Inconsistent with this Settlement Agreement provided there is no material change to the PM&E measure other than its inclusion in the New Project Licenses. However, Parties may not assert in any regulatory forum including FERC that any PM&E measures in Appendix C of this Settlement Agreement should be included in the New Project Licenses.

4.6 Cooperation Among Parties

The Parties shall cooperate in good faith in the implementation of this Settlement Agreement and the New Project Licenses.

4.7 Support for Implementation

Upon notification by FirstLight of the need therefore, the other Parties shall provide written communications (or orally, in the event written communication is impossible to obtain due to reasons outside a Party's control) of support in any administrative approval process that may be required for implementation of this Settlement Agreement or related articles of the New Project Licenses, subject to available Party resources and Regulatory Party authority and policy.

4.8 Defense Against PM&E Measures Inconsistent with This Settlement Agreement

If a Party files a pleading or other document before FERC or another regulatory agency advocating a PM&E measure Inconsistent with this Settlement Agreement which is not based on Material New Information, whether prior to or following issuance of the New Project Licenses, any other Party may defend by: (1) stating its opposition to the PM&E measure Inconsistent with this Settlement Agreement; (2) requesting that FERC or other regulatory agency disapprove the PM&E measure Inconsistent with this Settlement Agreement; and (3) explaining what offsetting PM&E measures should be included in and/or excluded from the New Project Licenses if the PM&E measure Inconsistent with this Settlement Agreement is approved.

4.9 Responsibility for Compliance with New Project Licenses

Upon acceptance of the New Project Licenses, FirstLight is ultimately responsible for compliance with them. By entering into this Settlement Agreement, except as expressly provided herein, none of the other Parties is accepting any new or additional legal liability or responsibility for compliance with the obligations under the New Project Licenses. FirstLight shall not be excused from its duty to comply with the New Project Licenses due to a failure by any other Party, entity, or person to provide funding or carry out a duty, obligation, or responsibility it may have with respect to the Projects pursuant to other laws or agreements. Notwithstanding the foregoing, this Settlement Agreement does not alter or abrogate any duty, obligation, or responsibility that any other Party or person may have to provide such funding pursuant to other laws or agreements, nor does this Settlement Agreement prevent FirstLight or any other Party from seeking to enforce such duty, obligation, or responsibility. Further, FirstLight shall have no obligation to reimburse or otherwise pay any other Party for its assistance, participation, or cooperation in any activities pursuant to this Settlement Agreement of the New Project Licenses unless expressly agreed to by FirstLight or as required by law. In the event of administrative rehearing or judicial review, Parties shall bear their own costs and attorneys' fees.

4.10 Availability of Funds

Implementation of this Settlement Agreement by any Party other than FirstLight is subject to the availability of funds. In addition, implementation of this Settlement Agreement by any federal agency is subject to the requirements of the Anti-Deficiency Act, 31 U.S.C. Section 1341 *et seq.*

4.11 Implementation

4.11.1 Implementation Schedule

FirstLight shall ensure that implementation of the PM&E measures stated in Appendices A and B shall be consistent with any schedule specified in Appendices A and B (as it may be modified by the New Project Licenses). FirstLight and other responsible Parties shall implement the measures stated in Appendix C consistent with the applicable schedules.

4.11.2 Permits

Upon acceptance of the New Project Licenses and FERC approval of the applicable plans, FirstLight shall apply for and use reasonable efforts to obtain in a timely manner and in final form all necessary federal, state, regional, and local permits, licenses, authorizations, certifications, determinations, and other governmental approvals for purposes of implementing this Settlement Agreement and the New Project Licenses (“Permits”). The applications for such Permits shall be consistent with the terms of this Settlement Agreement. Each Party, upon FirstLight’s request, shall use reasonable efforts to support FirstLight’s applications for Permits, and shall not file comments or recommend Permit conditions that are Inconsistent with this Settlement Agreement. However, this agreement to support FirstLight’s applications for Permits, shall not apply to a Regulatory Party issuing the permit, consulting on the issuance of a permit under its legal authority, or not participating in the Permit application proceeding. FirstLight shall pay all fees required by law related to such Permits. The Parties shall work together and cooperate as appropriate during the permitting, environmental review, and implementation of this Settlement Agreement. FirstLight shall not be required by the Settlement Agreement to implement an action required under this Settlement Agreement or the New Project Licenses if a Permit has been denied or contains conditions that are Inconsistent with this Settlement Agreement, or until all applicable Permits required for that action are obtained. If a proceeding challenging any Permit required for the action has been commenced, FirstLight shall be under no obligation under this Settlement Agreement to implement the action or any related action until any such proceeding is terminated. In the event any Permit has been denied, FirstLight determines that the Permit contains conditions that are Inconsistent with this Settlement Agreement, or any Permit is not obtained in a timely manner, the Parties shall confer to evaluate the effect of such event on implementation of this

Settlement Agreement and seek to develop actions to respond to that event. If the Parties do not agree on actions to respond to that event and nonperformance or prolonged delay in performance of one or more PM&E measures due to the event materially reduces the benefit of this Settlement Agreement, a Party may initiate dispute resolution, except that dispute resolution regarding denial of a Permit shall be restricted to the issue of actions to respond to that event. In addition, if the event results in nonperformance or prevents performance of one or more PM&E measures for a prolonged period, the Parties recognize that re-initiation of consultation under the ESA may be required. Nothing contained in this section shall be construed to limit FirstLight's right to apply for a Permit before issuance of the New Project Licenses, provided that any such applications shall not be Inconsistent with this Settlement Agreement.

4.12 Reopener or Amendment of New Project Licenses

4.12.1 Limitation on Reopeners and Modifications

No Party to this Settlement Agreement may seek to modify or otherwise reopen the PM&E measures included in the New Project Licenses in a manner that is Inconsistent with this Settlement Agreement unless that Party, relying on Material New Information, reasonably demonstrates that such proposed modification or reopener fulfills a statutory, regulatory, or court ordered responsibility, or reasonably demonstrates that the New Project Licenses no longer comply with applicable law, or that there is a similarly compelling reason to modify the PM&E measures.

4.12.1.1 Notice of Proposed Reopener

Prior to seeking modification or reopener, a Party shall provide all Parties at least 90-day Notice to consider the Material New Information and that Party's position. A Party shall not be required to comply with this 90-day Notice provision if it reasonably believes an emergency situation exists. If a Party proposes a modification or reopener that another Party believes would be Inconsistent with this Settlement Agreement and objects, then the dispute resolution provisions of Section 5 apply, and the objecting Party must invoke dispute resolution during the 90-day Notice period or waive its objection.

4.12.2 Amendment of New Project Licenses

Nothing in this Settlement Agreement is intended, or shall be construed, to affect or limit the right of FirstLight to seek amendments of the New Project Licenses that are not Inconsistent with this Settlement Agreement.

4.12.2.1 Notice of Proposed License Amendment

Prior to filing any proposed license amendment that relates to a subject covered by this Settlement Agreement, including a temporary amendment, FirstLight shall provide the other Parties at least 90-day Notice of its intention to do so. At the request of any Party, FirstLight shall consult with any/all interested Parties regarding the need for and the purpose of the amendment. If a Party believes the proposed amendment is Inconsistent with this Settlement Agreement and objects, then the dispute resolution provisions in Section 5 apply, and the objecting Party must invoke dispute resolution within this 90-day Notice period or waive its objection. FirstLight shall not be required to comply with this 90-day Notice provision if it reasonably believes an emergency situation exists or if required to meet its responsibilities under applicable law or an order of an agency with jurisdiction over it. In such an emergency or regulatory compliance situation, FirstLight shall give Notice to the Regulatory Parties within 10 business days of recognition of the need for such amendment.

4.12.2.2 Consultation on Amendments

Except as provided in the New Project Licenses or in the case of an emergency, FirstLight shall allow a minimum of 60 days for any Party to comment and to make recommendations before filing any application for a Project license amendment that relates to a subject covered by this Settlement Agreement and where consultation with Regulatory Parties or other Parties is required. If FirstLight does not adopt a recommendation or comment of a Party, it shall include in any filing with FERC copies of the comments/recommendations and an explanation as to why the comment/recommendation was not adopted.

4.12.2.3 Exception for FERC Compliance Directives

The notice and consultation requirements of this Section shall not apply to license amendments in connection with compliance matters under Section 4.13 below.

4.12.2.4 Parties' Option to Intervene in Amendment Proceeding

FirstLight shall not oppose, based on the issue of standing, an intervention request by any Party in a proceeding for a Project license amendment that the Party has concluded would be Inconsistent with this Settlement Agreement. The Parties acknowledge that intervention in the relicensing proceeding docket at FERC does not make the Party an intervenor in any post-licensing proceeding.

4.13 Compliance with FERC Project Safety and Other Directives

FirstLight expressly reserves the right to fully and timely comply with any FERC directive or compliance order, including but not limited to any requirement related to Project safety or security. In no instance will any action by FirstLight that is reasonably necessary or appropriate to comply with any such order or direction from FERC trigger the dispute resolution protocols of this Settlement Agreement or be construed as a breach of the Settlement Agreement or an action Inconsistent with this Settlement Agreement. FirstLight agrees to consult with relevant Parties to the extent practicable prior to taking action. All Parties reserve their rights to defend their interests at FERC.

4.14 Amendment of Settlement Agreement

This Settlement Agreement may be amended at any time through the term of the New Project Licenses plus the term(s) of any annual license(s) that may be issued after the New Project Licenses have expired, with the unanimous agreement of all Parties still in existence, including any successor thereto. The Party seeking amendment shall give each other Party at least 60-day prior written Notice. Such Notice shall state that failure of any Party, with the exception of Regulatory Parties and FirstLight, to respond in writing or by electronic mail to the Notice within the applicable 60-day period shall be deemed to be an approval of such amendment. Any amendment of this Settlement Agreement shall be in writing and executed by the responding Parties. The Parties recognize that any amendment to Appendices A and B of the Settlement Agreement may also require an amendment to the New Project Licenses, the CWA 401 Certifications, and the Biological Opinions.

5 Dispute Resolution

5.1 General Applicability

5.1.1 All disputes among the Parties regarding any Party's performance or compliance with this Settlement Agreement, including resolution of any disputes related to the New Project Licenses, Fishway Prescriptions, Biological Opinions, Section 401 Certifications, or Permits related to the New Project Licenses, shall be subject to the dispute resolution process provided in this Section 5, unless otherwise specifically provided in this Settlement Agreement or required by applicable law. The Parties agree that disputes shall be brought in a prompt and timely manner.

5.1.2 The Disputing Parties shall devote such resources as are needed and as can be reasonably provided to resolve the dispute expeditiously.

5.1.3 The Disputing Parties shall cooperate in good faith to promptly schedule, attend, and participate in the dispute resolution.

5.1.4 Unless otherwise agreed among the Disputing Parties, each Disputing Party shall bear its own costs for its participation in this or any administrative dispute resolution process related to the Settlement Agreement.

5.1.5 Each Disputing Party shall promptly implement any resolution of the dispute.

5.1.6 The dispute resolution process in this Section does not preclude any Party from timely filing and pursuing an action for administrative or judicial relief of any FERC order, compliance matter, or other regulatory action related to the New Project Licenses, provided that any such Party shall pursue dispute resolution pursuant to this process as soon as practicable thereafter or concurrently therewith.

5.1.7 The Party initiating a dispute under this Section may notify FERC when dispute resolution proceedings are initiated relevant to the New Project Licenses. The Parties acknowledge that the initiation of dispute resolution proceedings shall have no effect on filing deadlines or applicable statutes of limitation before FERC.

5.2 Process

5.2.1 Dispute Initiation Notice

A Party claiming a dispute shall give Notice of the dispute. If the dispute includes a claim that a New Project License, or related regulatory approval, is Inconsistent with this Settlement Agreement, the Notice shall be issued within the applicable time periods specified in Section 4. Such Notice shall describe: (A) the matter(s) in dispute, (B) the identity of any other Party alleged to have not performed an obligation provided by the Settlement Agreement, and (C) the specific relief sought. The Parties agree that disputes shall be brought in a prompt and timely manner.

5.2.2 Informal Meetings

The Disputing Parties shall hold at least two informal meetings to resolve the dispute, commencing within 30 days after the Dispute Initiation Notice.

5.2.3 Mediation

If the dispute is not resolved in the informal meetings, the Disputing Parties shall decide whether to use a neutral mediator, such as FERC's Office of Dispute Resolution Services. The decision whether to pursue mediation shall be made within 20 days after conclusion of the informal meetings in Section 5.2.2. The Disputing Parties shall agree on an appropriate allocation of any costs of the mediator employed under this section. Mediation shall not occur if the Disputing

Parties cannot agree on the allocation of costs. The Disputing Parties shall select a mediator within 30 days of the decision to pursue mediation, including the agreement of allocation of costs. The mediation process shall be concluded not later than 60 days after the mediator is selected. The above time periods may be shortened or lengthened upon mutual agreement of the Disputing Parties.

5.2.4 Dispute Resolution Notice

The Disputing Parties shall provide Notice of any resolution of the dispute achieved under Sections 5.2.2 and 5.2.3. The Notice shall: (A) restate the disputed matter, as initially described in the Dispute Initiation Notice; (B) describe the alternatives which the Disputing Parties considered for resolution; and (C) state whether resolution was achieved, in whole or part, and state the specific relief agreed-to as part of the resolution.

5.3 Enforcement of Settlement Agreement After Dispute Resolution

5.3.1 Enforcement Regarding New Project Licenses

A Disputing Party may seek administrative or judicial relief for an unresolved dispute regarding FirstLight's performance of its obligations under the New Project Licenses only after exhaustion of the dispute resolution process under Section 5, unless applicable processes require a filing for relief before dispute resolution can conclude. Any such relief shall be sought and obtained from FERC or other appropriate regulatory or judicial forum. No Party to the Settlement Agreement may seek damages for breach of the Proposed License Articles stated in Appendices A and B, whether before or after acceptance of the New Project Licenses.

5.3.2 Enforcement Regarding Contractual Obligations

A Disputing Party may seek administrative or judicial relief for breach of a contractual obligation established by this Settlement Agreement only after exhaustion of the dispute resolution process in Section 5. Venue for such action shall lie in a court with jurisdiction located in the Commonwealth of Massachusetts. In such action, a Disputing Party may only seek specific performance of the contractual obligation or other equitable relief. No Party shall be liable for damages for such breach of contractual obligations. By executing this Settlement Agreement, no Party waives any equitable or legal defenses that may be available. Nothing in this agreement waives the sovereign immunity of the United States, or the Commonwealth of Massachusetts, or constitutes consent to suit by either sovereign in any manner not otherwise provided for by law.

6 Withdrawal from Settlement Agreement

6.1 Withdrawal of Party from Settlement

A Party may withdraw from this Settlement Agreement only if (1) it objects to a Fishway Prescription, Biological Opinion, CWA 401 Certification, or FERC order issuing a New Project License that is Inconsistent with this Settlement, (2) it has complied with the required dispute resolution procedures stated in Section 5 to attempt to resolve the objection, and (3) the objection is to a CWA 401 Certification or FERC order issuing a New Project License, that Party does not file for appeal of the inconsistency. If the Party files an appeal to resolve the inconsistency, that Party may not withdraw until its appeal is concluded and the inconsistency remains uncured. In addition, FirstLight may withdraw as provided in Section 6.2. A Party that withdraws will provide Notice of withdrawal, including its basis for withdrawal.

6.2 Withdrawal of FirstLight from Settlement Agreement Prior to Acceptance of the New Project Licenses

In addition to the provisions of Section 6.1, prior to the acceptance of the New Project Licenses, FirstLight may withdraw from this Settlement Agreement without first complying with the dispute resolution process stated in Section 5 if a Party withdraws from this Settlement Agreement and FirstLight determines in its sole discretion, after providing the remaining Parties a reasonable opportunity to meet and discuss the matter with FirstLight, that the withdrawal: (1) may adversely affect the likelihood of NMFS or USFWS issuing a Fishway Prescription or Biological Opinion that is consistent with this Settlement Agreement, (2) may adversely affect the likelihood of MADEP issuing a CWA 401 Certification that is consistent with this Settlement Agreement, (3) may adversely affect the likelihood of FERC issuing a license that is consistent with this Settlement Agreement, or (4) substantially diminishes the value of this Settlement Agreement for FirstLight. FirstLight shall give Notice identifying the reason for withdrawal within 30 days of its knowledge of the event creating the right to withdraw.

6.3 Effective Date of Withdrawal

Withdrawal by a Party shall become effective 10 calendar days after Notice is given by the withdrawing Party.

6.4 Continuity After Withdrawal

The withdrawal of a Party, other than FirstLight, does not automatically terminate this Settlement Agreement for the remaining Parties. If a Party withdraws from this Settlement Agreement, the withdrawing Party shall not be bound by any term contained in this Settlement Agreement, except as provided in this section and in Section 2.2. The withdrawing Party shall not use any documents and communications related to the development, execution, and submittal of this Settlement Agreement to FERC as evidence, admission, or argument in any forum or proceeding for any purpose to the

fullest extent allowed by applicable law, including 18 C.F.R. § 385.606. This provision does not apply to any information that was in the public domain prior to the development of this Settlement Agreement or that became part of the public domain at some later time through no unauthorized act or omission by any Party. This provision does not apply to: (1) any information held by a federal agency that is not protected from disclosure pursuant to the Freedom of Information Act or other applicable law; or (2) any information held by a state or local agency that is not protected from disclosure pursuant to M.G.L. ch. 66 §§ 10-10B or other applicable state or federal law. The withdrawing Party shall continue to maintain the confidentiality of all settlement communications to the extent permitted by applicable law.

6.5 Termination of Settlement Agreement

This Settlement Agreement shall terminate as to all Parties and have no further force or effect upon expiration of the New Project Licenses and any annual licenses issued after expiration thereof, upon withdrawal from this Settlement Agreement by FirstLight or upon FirstLight's decision not to affirmatively accept the New Project Licenses, or upon FERC issuing an order approving FirstLight's surrender of one or both of the New Project Licenses. Upon termination, all documents and communications related to the development, execution, and submittal of this Settlement Agreement to FERC shall not be used as evidence, admission, or argument in any forum or proceeding for any purpose to the fullest extent allowed by applicable law, including 18 C.F.R. § 385.606. This provision does not apply to any information that was in the public domain prior to the development of this Settlement Agreement or that became part of the public domain at some later time through no unauthorized act or omission by any Party. This provision does not apply to: (1) any information held by a federal agency that is not protected from disclosure pursuant to the Freedom of Information Act or other applicable law; or (2) any information held by a state or local agency that is not protected from disclosure pursuant to M.G.L. ch. 66 §§ 10-10B or other applicable state or federal law. Notwithstanding the termination of this Settlement Agreement, all Parties shall continue to maintain the confidentiality of all settlement communications to the extent permitted by applicable law, and all Parties remain subject to Section 2.2 of this Settlement Agreement.

7 General Provisions

7.1 Non-Severable Terms of Settlement Agreement

The terms of this Settlement Agreement are not severable one from the other. This Settlement Agreement is made on the understanding that each term is in consideration and support of every other term, and each term is a necessary part of the entire Settlement Agreement. If a court of competent jurisdiction rules that any provision in Sections 1 through 8.2 of this Settlement Agreement is invalid, this Settlement Agreement is deemed modified to conform to such ruling, unless a Party objects. If a Party objects, the other Parties agree to meet and confer regarding the continued viability of this Settlement Agreement.

7.2 No Third-Party Beneficiaries

This Settlement Agreement shall not create any right or interest in the public, or any member thereof, as a third-party beneficiary hereof, and shall not authorize any non-Party to maintain a suit at law or equity pursuant to this Settlement Agreement. The duties, obligations, and responsibilities of the Parties with respect to third parties shall remain as imposed under applicable law.

7.3 Successors and Assigns

This Settlement Agreement shall be binding on and inure to the benefit of the Parties and their successors and approved assigns, unless otherwise specified in this Settlement.

7.3.1 Assignment

Any voluntary assignment by a Party shall not be effective unless approved by FirstLight, which approval shall not be unreasonably withheld. A partial assignment is not permitted. After FirstLight's approval of the assignment, the assignee shall sign the Settlement Agreement and become a Party.

7.3.2 Succession

In the event of succession between public agencies, whether by statute, executive order, or operation of law, the successor agency shall become a Party to and be bound by the terms of this Settlement Agreement, to the extent permitted by law.

7.3.3 Continuation of Certain Obligations

7.3.3.1 Upon completion of a succession or assignment, the initial Party shall no longer be a Party. It shall continue to be bound by Sections 2.2, 6.4, 6.5, 7.2, and 7.3. The initial Party shall not take any action adverse to the Settlement Agreement, or the New Project Licenses to the extent they incorporate the Settlement Agreement.

7.3.3.2 No change in ownership of the Project or transfer of the existing or New Project Licenses by FirstLight shall in any way modify or otherwise affect any other Party's rights or obligations under this Settlement Agreement. Unless prohibited by applicable law, FirstLight shall require in any transaction for a change in ownership of the Projects or transfer of the existing or New Project Licenses, that such new owner shall be bound by, and shall assume all of the rights and obligations of FirstLight under this Settlement Agreement upon completion of the change of ownership and approval by FERC of the license transfer.

7.3.4 Notice

FirstLight transferring pursuant to Section 7.3.3.2 or an assigning Party shall provide Notice to the other Parties at least 30 days prior to the proposed effective date of such transfer or assignment.

7.4 Extension of Time; Inability to Perform

7.4.1 Obligations under New Project Licenses

7.4.1.1 Extension of Time

If FirstLight has good cause, consistent with FERC's standard in 18 C.F.R. § 385.2008, to seek an extension of time to fulfill an obligation under the New Project Licenses, it may file with FERC such a request after consulting with the relevant Parties. The Parties acknowledge that FERC's standard for any such request shall apply. If any Party provides Notice that it disputes the good cause for extension, FirstLight and the Disputing Party shall follow the dispute resolution process in Section 5 of this Settlement Agreement. If the dispute cannot be timely resolved by such process, FirstLight may proceed with its request, if it has not done so already, and any Disputing Party may oppose the request.

7.4.1.2 Inability of FirstLight to Perform

If FirstLight is unable to perform an obligation under the New Project Licenses due to an event or circumstances beyond its reasonable control, FirstLight may file with FERC an appropriate request for relief. The Parties acknowledge that FERC's standard for any such request shall apply. If any Party provides Notice that it disputes the non-performance, FirstLight and the Disputing Party shall follow the dispute resolution process in Section 5 of this Settlement Agreement. If the dispute cannot be timely resolved by such process, FirstLight may proceed with its request to FERC, if it has not done so already, and any Disputing Party may oppose its request.

7.4.2 Contractual Obligations

No Party shall be in breach of a contractual obligation under this Settlement Agreement, as established by Sections 1 through 8.2 and Appendix C of this Settlement Agreement, if it is unable to perform or delays performance due to any Uncontrollable Force reasonably beyond its control, unless otherwise provided by this Settlement Agreement. For this purpose, "Uncontrollable Force" may include, but is not limited to, natural events, labor or civil disruption, action or non-action of a governmental agency, or unforeseen breakdown or failure of the Project works for the period of time necessary to cure.

7.4.3 Notice of Delay or Inability to Perform

The Party whose performance of an obligation under this Settlement Agreement is affected by any delay or inability to perform under Section 7.4 shall provide Notice as soon as reasonably practicable. This Notice shall include: (1) a description of the event causing the delay or anticipated delay; (2) an estimate of the anticipated length of the delay; (3) a description of the measures taken or to be taken to avoid or minimize the delay; and (4) a proposed timetable for the implementation of the measures or performance of the obligation. The affected Party shall make all reasonable efforts to promptly resume performance of the obligation. It shall provide Notice when it resumes performance of the obligation.

7.5 Governing Law

The New Project Licenses and any other terms of this Settlement Agreement over which a federal agency has statutory or regulatory jurisdiction shall be governed, construed, and enforced in accordance with such authorities. This Settlement Agreement shall otherwise be governed and construed under the laws of the Commonwealth of Massachusetts. By executing this Settlement Agreement, no federal agency is consenting to the jurisdiction of a state court unless such jurisdiction otherwise exists. All activities undertaken pursuant to this Settlement Agreement shall be in compliance with all applicable law.

7.6 Elected Officials Not to Benefit

No elected officials shall be entitled to any share or part of this Settlement Agreement or to any benefit that may arise from it.

7.7 No Partnership

Except as otherwise expressly set forth herein, this Settlement Agreement does not and shall not be deemed to make any Party the agent for, partner of, or joint venturer with any other Party.

7.8 Reference to Regulations

Any reference in this Settlement Agreement to any federal or state regulation shall be deemed to be a reference to such regulation, or successor regulation, in existence as of the date of the action at the time in question.

7.9 Notice

Except as otherwise provided in this Section, any Notice required by this Settlement Agreement shall be written. Notice shall be sent to all Parties still in existence and, as applicable, filed with FERC. For the purpose of this Settlement Agreement and unless otherwise specified, a Notice shall be effective upon receipt, but if provided by U.S. Mail, seven (7) business days after the date on which it is mailed. The Parties agree that

if practicable, electronic mail or fax are the preferred methods of providing Notice under this Settlement Agreement. When this Settlement Agreement requires Notice in fewer than seven (7) business days, Notice shall be provided by telephone, fax, or electronic mail and shall be effective when provided. For the purpose of Notice, the list of authorized representatives of the Parties as of the Effective Date is attached as Appendix D. FirstLight shall keep the names and contact information for the Parties to this Settlement Agreement. The Parties shall provide Notice of any change in the authorized representatives designated in Appendix D, and FirstLight shall maintain the current distribution list of such representatives. The Parties agree it is their responsibility to keep FirstLight informed of their current address, telephone, fax, and electronic mail information, and that failure to provide FirstLight with current contact information will result in a waiver of that Party's right to Notice under this Settlement Agreement.

7.10 Section Titles for Convenience Only

The titles for the Sections of this Settlement Agreement are used only for convenience of reference and organization and shall not be used to modify, explain, or interpret any of the provisions of this Settlement Agreement or the intentions of the Parties. This Settlement Agreement has been jointly drafted by the Parties and therefore shall be construed according to its plain meaning and not for or against any Party.

8 Execution of Settlement Agreement

8.1 Signatory Authority

Each signatory to this Settlement Agreement certifies that he or she is authorized to execute this Settlement Agreement and to legally bind the Party he or she represents, and that such Party shall be fully bound by the terms hereof upon such signature without any further act, approval, or authorization by such Party.

8.2 Signing in Counterparts

This Settlement Agreement may be executed in any number of counterparts, and each executed counterpart shall have the same force and effect as an original instrument as if all the signatory Parties to all of the counterparts had signed the same instrument. Any signature page of this Settlement Agreement may be detached from any counterpart of this Settlement Agreement without impairing the legal effect of any signatures thereon, and may be attached to another counterpart of this Settlement Agreement identical in form hereto but having attached to it one or more signature pages.

IN WITNESS THEREOF,

the Parties, through their duly authorized representatives, have cause this Settlement Agreement to be executed as of the date set forth in this Settlement Agreement.

FirstLight MA Hydro LLC and Northfield Mountain LLC,



Date: 3/24/2023

By: Justin Trudell

U.S. Fish and Wildlife Service,


AUDREY MAYER Digitally signed by AUDREY
MAYER

Date: 2023.03.24 11:40:21 -04'00' Date: _____

By:

National Marine Fisheries Service,

**Michael
Pentony**

 Digitally signed by Michael
Pentony
Date: 2023.03.24 14:47:06
-04'00'

Date: _____

By:

Massachusetts Division of Fisheries and Wildlife,

Mark S. Tisa

Date: 3/24/2023

By: Director Mark S. Tisa, Ph.D., M.B.A.

The Nature Conservancy,



Date: March 22, 2023

By: Deb Markowitz, TNC
Massachusetts State Director

American Whitewater,

Robert H. Anderson

Date: 3/27/23

By:

Appalachian Mountain Club,

Nicole Zussman

Date: March 28, 2023

By: Nicole Zussman, President & CEO of Appalachian Mountain Club

New England FLOW,

New England FLOW

Date: 3/24/23

By: *Thomas J. Christopher,*
Secretary/Director

Zoar Outdoor,

Janet Cowie

By: JANET Cowie, GM

Date: 3/27/23

**Appendix A. Protection, Mitigation, and Enhancement Measures Recommended
to be Included in the New Turners Falls Hydroelectric Project License**

Appendix A: Draft License Articles- Turners Falls Hydroelectric Project

Article A100. Station No. 1 Upgrades

Within 3 years of license issuance, the Licensee shall automate Station No. 1 such that it is capable of being operated remotely and over a range of flows. The Licensee shall submit design plans to the Commission for automating Station No. 1. Upon Commission approval, the Licensee shall automate Station No. 1, including any changes required by the Commission.

Article A110. Minimum Flows below Turners Falls Dam

Upon license issuance, the Licensee shall discharge from the Turners Falls Dam or from the gate located on the power canal (“canal gate”) just below the Turners Falls Dam the following seasonal minimum flows.

Date	Minimum Flows below Turners Falls Dam
01/01-03/31 ¹	<ul style="list-style-type: none"> • If the Naturally Routed Flow (NRF- definition provided later in this article) is \leq 400 cubic feet per second (cfs), the Minimum Flow below Turners Falls Dam shall be 400 cfs or the NRF, whichever is less. • If the NRF is $>$ 400 cfs, the Minimum Flow below Turners Falls Dam shall be 400 cfs.
04/01-05/31	<ul style="list-style-type: none"> • If the NRF is \leq 6,500 cfs, the Minimum Flow below Turners Falls Dam shall be 67% of the NRF. • If the NRF is $>$ 6,500, the Minimum Flow below Turners Falls Dam shall be 4,290 cfs.
06/01-06/15 ^{2,3}	<ul style="list-style-type: none"> • If the NRF is \leq 4,500 cfs, the Minimum Flow below Turners Falls Dam shall be 67% of the NRF. • If the NRF is $>$ 4,500 cfs, the Minimum Flow below Turners Falls Dam shall be 2,990 cfs.
06/16-06/30 ³	<ul style="list-style-type: none"> • If the NRF is \leq 3,500 cfs, the Minimum Flow below Turners Falls Dam shall be 67% of the NRF. • If the NRF is $>$ 3,500 cfs, the Minimum Flow below Turners Falls Dam shall be 2,280 cfs.
07/01-11/15 ¹	<ul style="list-style-type: none"> • If the NRF is \leq 500 cfs, the Minimum Flow below Turners Falls Dam shall be 500 cfs or the NRF, whichever is less. • If the NRF is $>$ 500 cfs, the Minimum Flow below Turners Falls Dam shall be 500 cfs.
11/16-12/31 ¹	<ul style="list-style-type: none"> • If the NRF is \leq 400 cfs, the Minimum Flow below Turners Falls Dam shall be 400 cfs or the NRF, whichever is less. • If the NRF is $>$ 400 cfs, the Minimum Flow below Turners Falls Dam shall be 400 cfs.

¹From November 16 through March 31, the 400 cfs minimum flow below Turners Falls Dam will be provided from the canal gate, having a design maximum capacity of 400 cfs. The Licensee shall open the canal gate to its maximum opening and implement ice mitigation measures, if necessary, to maintain the maximum opening. The Licensee shall monitor canal gate operations to determine if supplemental measures, such as cable-heating the gate, are needed to maintain flows at or as close to 400 cfs as possible.

²One of the upstream fish passage adaptive management measures (AMMs) described in Article A330 calls for increasing the Total Minimum Bypass Flow below Station No. 1 (see Article A120) from June 1 to June 15 from 4,500 cfs to 6,500 cfs. If this AMM is enacted, and if the NRF is \leq 6,500 cfs, the Minimum Flow below the Turners Falls Dam shall be 67% of the NRF, subject to the conditions in Article A330. If this AMM is enacted, and if the NRF is $>$ 6,500 cfs, the Minimum Flow below the Turners Falls Dam shall be 4,290 cfs, subject to the conditions in Article A330.

³The magnitude of the Minimum Flow below Turners Falls Dam from June 1 to June 30 may be modified in the future pending fish passage effectiveness studies (see Article A330). If the Licensee conducts fish passage effectiveness studies, in consultation with the Massachusetts Division of Fisheries and Wildlife (MDFW), National Marine Fisheries Service (NMFS), and United States Fish and Wildlife Service (USFWS) and determines that migratory fish are not delayed by passing a greater percentage of the Total Minimum Bypass below Station No. 1 (see Article A120) via Station No. 1 discharges, the Licensee may file for a license amendment to increase the Station No. 1 discharge upon written concurrence of MDFW, NMFS, and USFWS. Prior to filing for a license amendment with the Commission, the Licensee shall consult the Massachusetts Department of Environmental Protection (MDEP) and address any of its comments in the license amendment filing.

Definition of Naturally Routed Flow

From December 1 through June 30, the NRF is defined as the hourly sum of the discharges from 12 hours previous as reported by the: Vernon Hydroelectric Project (FERC No. 1904), Ashuelot River United States Geological Survey gauge (USGS, Gauge No. 01161000), and Millers River USGS gauge (Gauge No. 01166500).

From July 1 through November 30, the NRF is defined as the hourly sum of the discharges averaged from 1 to 12 hours previous as reported by the: Vernon Hydroelectric Project, Ashuelot River USGS gauge, and Millers River USGS gauge. Upon license issuance until 3 years thereafter, the Licensee shall operate the Turners Falls Project based on the NRF computational method from July 1 through November 30 to determine if the Turners Falls Project can be operated in this manner. If the Turners Falls Project cannot be operated in this manner, the Licensee shall consult MDFW, NMFS, and USFWS on alternative means of computing the NRF that are feasible for Turners Falls Project operation and sufficiently dampen upstream hydroelectric project flexible operations.

The Minimum Flow below Turners Falls Dam may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Minimum Flow below Turners Falls Dam is so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The Minimum Flow below Turners Falls Dam may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS and USFWS, and upon 5 days' notice to the Commission.

Article A120. Total Minimum Bypass Flows below Station No. 1

Upon license issuance, the Licensee shall maintain the Total Minimum Bypass Flows below Station No. 1 as follows:

Date	Total Minimum Bypass Flows below Station No. 1 ¹
01/01-03/31	<ul style="list-style-type: none"> • If the NRF is ≤ 400 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 400 cfs, or the NRF, whichever is less. • If the NRF is > 400 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 1,500 cfs, or the NRF, whichever is less.
04/01-05/31	<ul style="list-style-type: none"> • If the NRF is ≤ 6,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF. • If the NRF is > 6,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 6,500 cfs.
06/01-06/15 ^{2,4}	<ul style="list-style-type: none"> • If the NRF is ≤ 4,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF. • If the NRF is > 4,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 4,500 cfs.
06/16-06/30 ⁴	<ul style="list-style-type: none"> • If the NRF is ≤ 3,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF. • If the NRF is > 3,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 3,500 cfs.
07/01-08/31 ³	<ul style="list-style-type: none"> • If the NRF is ≤ 500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 500 cfs, or the NRF, whichever is less. • If the NRF is > 500 cfs and ≤ 1,800 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF or 90% of the NRF. • If the NRF is > 1,800 cfs, the Total Minimum Bypass below Station No. 1 shall be 1,800 cfs, or 90% of the NRF, whichever is less.
09/01-11/15 ³	<ul style="list-style-type: none"> • If the NRF is ≤ 500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 500 cfs, or the NRF, whichever is less. • If the NRF is > 500 cfs and ≤ 1,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF, or 90% of the NRF. • If the NRF is > 1,500 cfs, the Total Minimum Bypass below Station No. 1 shall be 1,500 cfs, or 90% of the NRF, whichever is less.
11/16-12/31 ³	<ul style="list-style-type: none"> • If the NRF is < 400 cfs, then the Total Minimum Bypass Flow below Station No. 1 shall be 400 cfs, or the NRF, whichever is less. • If the NRF is > 400 cfs and ≤ 1,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be the NRF or 90% of the NRF. • If the NRF is > 1,500 cfs, the Total Minimum Bypass below Station No. 1 shall be 1,500 cfs, or 90% of the NRF, whichever is less.

¹From license issuance until 3 years thereafter, Station No. 1 will not be automated. During those 3 years, if Station No. 1 is the only source, other than the Fall River, Turners Falls Hydro, LLC, or Milton Hilton, LLC to provide the additional flow needed to meet the Total Minimum Bypass Flow below Station No. 1, the Licensee shall maintain the Station No. 1 discharge such that the Turners Falls Dam Minimum Flow will be as shown in Article A110, or higher flows, in cases where the additional flow cannot be passed through Station No. 1.

²One of the upstream fish passage adaptive management measures (AMMs) described in Article A330 calls for increasing the Total Minimum Bypass Flow below Station No. 1 from June 1 to June 15 from 4,500 cfs to 6,500 cfs. If this AMM is enacted, and if the NRF is ≤ 6,500 cfs, the Total Minimum Bypass Flow

below Station No. 1 shall be the NRF, subject to the conditions in Article A330. If this AMM is enacted, and the NRF > 6,500 cfs, the Total Minimum Bypass Flow below Station No. 1 is 6,500 cfs, subject to the conditions in Article A330.

³From July 1 to August 31, when the NRF is greater than 1,800 cfs, the Total Minimum Bypass Flow below Station No.1 shall be 1,800 or 90% of the NRF, whichever is less. From September 1 to December 31, when the NRF is greater than 1,500 cfs, the Total Minimum Bypass Flow below Station No. 1 shall be 1,500 cfs or 90% of the NRF, whichever is less. From July 1 to December 31, if the Total Minimum Bypass Flow below Station No. 1 shall be reduced by 10%, it will not be taken from the Turners Falls Dam Minimum Flow (Article 110).

⁴The amount of flow needed from Station No. 1 from June 1 to June 30 may be modified in the future pending fish passage effectiveness studies. If the Licensee conducts fish passage effectiveness studies, in consultation with the MDFW, NMFS, and USFWS and determines that migratory fish are not delayed by passing a greater percentage of the Total Minimum Bypass Flow below Station No. 1 via Station No. 1 discharge, the Licensee may file for a license amendment to increase the magnitude of Station No. 1 discharge upon written concurrence of MDFW, NMFS, and USFWS. Prior to filing for a license amendment with the Commission, the Licensee shall consult AW, AMC, CAW, MDEP, NEF and ZO and address any comments of those entities in the license amendment filing.

If the Station No. 1 units are used to maintain the Total Minimum Bypass Flow below Station No. 1, and if some or all of the Station No. 1 units become inoperable, the balance of the flow needed to maintain the Total Bypass flow below Station No. 1 will be provided from either the Turners Falls Dam Minimum Flow (dam or canal gate), Fall River, Turners Falls Hydro, LLC or Milton Hilton, LLC.

The Total Minimum Bypass Flow below Station No. 1 may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Total Minimum Bypass Flow below Station No. 1 is so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The total bypass flow below Station No. 1 may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS, and USFWS, and upon 5 days' notice to the Commission.

Article A130. Minimum Flows below Cabot Station

Upon license issuance, the Licensee shall maintain Minimum Flows below Cabot Station, or the NRF, whichever is less, as follows.

Date	Minimum Flow below Cabot Station
01/01-03/31	3,800 cfs or the NRF, whichever is less
04/01-05/31	8,800 cfs from midnight to 7:00 pm or the NRF, whichever is less and 6,500 cfs from 7:00 pm to midnight or the NRF, whichever is less.
06/01-06/15	6,800 cfs or the NRF, whichever is less
06/16-06/30	5,800 cfs or the NRF, whichever is less
07/01-08/31 ¹	1,800 cfs or 90% of the NRF, whichever is less
09/01-11/15 ¹	1,500 cfs or 90% of the NRF, whichever is less
11/16-11/30 ¹	1,500 cfs or 90% of the NRF, whichever is less
12/01-12/31	3,800 cfs or NRF, whichever is less

¹From July 1 to November 30, the Minimum Flow below Cabot Station is 1,800 (07/01-08/31) and 1,500 cfs (09/01-11/30) or 90% of the NRF, whichever is less. If the Minimum Flow below Cabot Station is reduced by 10% during these periods, it will not be taken from the Turners Falls Dam Minimum Flow (Article A110).

The Minimum Flow below Cabot Station may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Minimum Flow below Cabot Station is so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The Minimum Flow below Cabot Station may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS and USFWS, and upon 5 days' notice to the Commission.

Article A140. Cabot Station Ramping Rates

Upon license issuance until 3 years after license issuance, the Licensee shall ramp Cabot Station as follows.

Date	Cabot Station Ramping Rates ¹
04/01-06/30	Up and Down Ramping at a rate of 2,300 cfs/hour
07/01-08/15	Up Ramping at a rate of 2,300 cfs/hour from 8:00 am to 2:00 pm

Three years after license issuance, the Licensee shall ramp Cabot Station as follows.

Date	Cabot Station Ramping Rate ¹
04/01-06/30	Up and Down Ramping at a rate of 2,300 cfs/hour

¹If the NRF is greater than the sum of the hydraulic capacity of Cabot Station and Station No. 1 and the Minimum Flow below Turners Falls Dam in effect at the time, the Cabot Station up-ramping rates will not apply.

The Cabot Station Ramping Rates above will take precedence over the Flow Stabilization below Cabot Station (Article A160).

The Cabot Station Ramping Rates may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Cabot Station Ramping Rates are so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The Cabot Station Ramping Rate may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS, and USFWS, and upon 5 days' notice to the Commission.

Article A150. Variable Releases from Turners Falls Dam and Variable Flow below Station No. 1

For recreation and ecological conservation purposes, upon license issuance, the Licensee shall provide variable releases from the Turners Falls Dam and a variable flow below Station No. 1 as shown below.

Variable Releases from Turners Falls Dam

Magnitude of Variable Release from Turners Falls Dam	¹ 4,000 cfs, or the NRF, whichever is less
Dates when Variable Releases may occur	² July 1 through October 31
³ Total No. of 2-day events	5 events for a total of 10 Variable Releases, but could potentially be 11 Variable Releases subject to footnote 3
Days of Variable Release for 2 day-events	Saturday and Sunday- must be two consecutive days
Hours of Variable Release	10:00 am to 2:00 pm, 4 hrs/day, Saturday and Sunday
Magnitude of Variable Release from Turners Falls Dam from Saturday at 2:00 pm to Sunday at 10:00 am.	See footnote 4
⁵ Up-Ramping Rates at Start of Variable Release	See footnote 5
⁶ Down-Ramping Rates at End of Variable Release	See footnote 6

¹If the NRF < 2,500 cfs during the scheduled variable release (see footnote 2 below relative to scheduling variable releases), there will be no variable release and it will not be rescheduled.

²The Licensee shall consult American Whitewater (AW), Appalachian Mountain Club (AMC), commercial outfitters, MDEP, MDFW, National Park Service (NPS), New England FLOW (NE FLOW), and USFWS no later than March 1 annually over the license term to develop a mutually agreeable schedule for the variable releases. When developing the schedule, there will be at least one weekend per month, between July 1 and October 31, when no variable releases are provided.

³The Licensee conducts annual canal drawdowns for maintenance purposes resulting in the NRF being passed at the Turners Falls Dam. If the canal drawdown occurs between July 1 and October 31 and the NRF is being passed either on Saturday from 10:00 am- 2:00 pm or Sunday from 10:00 am-2:00 pm, the total number of releases at the Turners Falls Dam shall remain at 10 releases. However, if the canal drawdown does not occur between July 1 and October 31 on Saturday from 10:00 am-2:00 pm or Sunday from 10:00 am-2:00 pm, the Licensee shall provide an additional consecutive day of variable release such that one of the 2-day events is a 3-day consecutive event resulting in a total of 11 releases. The additional day shall either be Friday from 10:00 am-2:00 pm before the scheduled weekend variable release or Monday from 10:00 am-2:00 pm after the scheduled weekend variable release. If there ends up being one 3-day event, the magnitude of release from Friday at 2:00 pm to Saturday at 10:00 am (or Sunday at 2:00 pm to Monday at 10:00 am), shall be computed as noted in footnote 4.

⁴This flow will be calculated as: $[(\text{Variable Flow Release} - \text{Minimum Flow below Turners Falls Dam as defined in Article A110})/2]$. If there is a 3-day event as noted in footnote 3, the variable flow release from Friday at 2:00 pm to Saturday at 10:00 am (or from Sunday at 2:00 pm to Monday at 10:00 am) will be based on the same calculation.

⁵At the beginning of the variable release, if the NRF is > 4,000 cfs, the Licensee shall up-ramp from the Minimum Flow below Turners Falls Dam as defined in Article A110 to 4,000 cfs in two hours, not to exceed 2,000 cfs/hr.

At the beginning of the variable release, if the NRF is between 2,500 and 4,000 cfs, the Licensee shall up ramp at 50% of the NRF per hour.

⁶At the end of the variable release, if Turners Falls Dam variable release is between 2,500 and 4,000 cfs, the Licensee shall down ramp at 50% of the variable release per hour.

Variable Flow below Station No. 1

Magnitude of Variable Flow below Station No. 1	¹ 2,500 cfs, or the NRF, whichever is less
Dates when Variable Flow may occur	² July 1 through October 31
Total No. of 2-day events	7 events for a total of 14 Variable Flows
Days of Variable Flow	Saturday and Sunday- must be two consecutive days
Hours of Variable Flow	10:00 am to 2:00 pm, 4 hrs/day
Magnitude of Variable Flow below Station No. 1 from Saturday at 2:00 pm to Sunday at 10:00 am.	See Footnote 3

¹If the NRF < 2,500 cfs, during the scheduled flow (see footnote 2 below relative to scheduling the flow), there will be no 2,500 cfs flow and it will not be rescheduled.

²The Licensee shall consult AW, AMC, commercial outfitters, MDEP, MDFW, NPS, NE FLOW, and USFWS no later than March 1 annually over the license term to develop a mutually agreeable schedule for the variable flow. When developing the schedule there will be at least one weekend per month, between July 1 and October 31, when no variable flow is provided.

³From July 1 to August 31, the Total Minimum Bypass Flow below Station No. 1 is defined in Article A120. If the NRF is > 1,800 cfs, the Total Minimum Bypass below Station No. 1 shall be 1,800 cfs, or 90% of the NRF, whichever is less. The magnitude of flow below Station No. 1 from Saturday at 2:00 pm to Sunday at 10:00 am from July 1 to August 31 will be computed as follows:

$$(2,500 \text{ cfs} + \text{Total Minimum Flow below Station No. 1 as defined in Article A120})/2.$$

From September 1 to November 15, the Total Minimum Bypass Flow below Station No. 1 is defined in Article A120. If the NRF is > 1,500 cfs, the Total Minimum Bypass below Station No. 1 shall be 1,500 cfs, or 90% of the NRF, whichever is less. The magnitude of flow below Station No. 1 from Saturday at 2:00 pm to Sunday at 10:00 am from September 1 to November 15 will be computed as follows:

$$(2,500 \text{ cfs} + \text{Total Minimum Flow below Station No. 1 as defined in Article A120})/2.$$

When implementing the variable releases from the Turners Falls Dam or the 2,500 cfs flow below Station No. 1, the Licensee is still required to maintain the operational requirements in License Articles A110, A120, A130, A140, A160 and A190.

The above variable release from the Turners Falls Dam and variable flow below Station No. 1 may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Turners Falls Dam variable release or variable flow below Station No. 1 are so modified, the Licensee shall notify AW, AMC, commercial outfitters, MDEP, MDFW, NMFS, NPS, NE

FLOW, and USFWS as soon as possible. The Turners Falls Dam variable release or variable flow below Station No. 1 may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), AW, AMC, commercial outfitters, MDEP, MDFW, NMFS, NPS, NE FLOW and USFWS.

Article A160. Flow Stabilization below Cabot Station and Allowable Deviations for Flexible Operations

Three years after license issuance, the Licensee shall maintain $\pm 10\%$ of the NRF below Cabot Station as follows.

Date	Flow Stabilization below Cabot Station ¹
04/01-05/15 ²	Provide $\pm 10\%$ of the NRF below Cabot Station from 7:00 pm to midnight, with allowable deviations up to $\pm 20\%$ of the NRF for up to 22 hours total from 04/01-05/15 (the 22 hours will be used from 7:00 pm to midnight).
05/16-05/31 ²	Provide $\pm 10\%$ of the NRF below Cabot Station from 7:00 pm to midnight, with allowable deviations up to $\pm 20\%$ of the NRF for up to 18 hours total from 05/16-05/31 (the 18 hours will be used from 7:00 pm to midnight).
06/01-06/15 ²	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 7 hours total from 06/01-06/15.
06/16-06/30 ²	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 7 hours total from 06/16-06/30.
07/01-08/15 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 55 hours total from 07/01-08/15.
08/16-08/31 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 27 hours total from 08/16-08/31.
09/01-10/31 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 44 hours total from 09/01-10/31.
11/01-11/30 ³	Provide $\pm 10\%$ of the NRF below Cabot Station with allowable deviations up to $\pm 20\%$ of the NRF for up to 11 hours total from 11/01-11/30.

¹If the NRF is greater than the sum of the hydraulic capacity of Cabot Station and Station No. 1 and the Minimum Flow below Turners Falls Dam in effect at the time, the Flow Stabilization below Cabot Station will not apply.

²From April 1 to June 30, the NRF flow may be reduced by 10% or up to 20% for select hours. If the NRF is reduced during this period, the flow will be taken from Cabot Station generation.

³From July 1 to November 30, the NRF flow may be reduced by 10% or up to 20% for select hours. If the NRF is reduced during this period, the flow will not be taken from the Turners Falls Dam Minimum Flow.

Beginning three years after license issuance, the Licensee may deviate from the Flow Stabilization below Cabot Station and Cabot Station Ramping Rates (Article A140) for a certain number of hours in July, August, September, October and November, hereinafter referred to as flexible operations.

The Licensee has restricted discretionary flexible operating capability to respond to elevated energy prices, as defined in paragraph (a) below, from July 1 to November 30, as well as unrestricted capability to respond to emergencies, Independent System Operator-New England (ISO-NE, or its successors)

transmission and power system requirements, and other regulatory requirements as defined in paragraph (b) below.

- (a) The Licensee may deviate from the Flow Stabilization below Cabot Station and Cabot Station Ramping Rates (Article A140). The number of hours of flexible operations, which may be used at the discretion of the Licensee, are as follows.

Date	Allowable Deviations from Cabot Station Ramping Rates (Article A140) and Flow Stabilization below Cabot Station
07/01-07/31	20 hours of flexible operations with no more than 7 flexible events per month
08/01-08/31	26 hours of flexible operations with no more than 7 flexible events per month
09/01-09/30	23 hours of flexible operations with no more than 7 flexible events per month
10/01-10/31	20 hours of flexible operations with no more than 7 flexible events per month
11/01-11/30	28 hours of flexible operations with no more than 7 flexible events per month

- (b) If compliance with the Flow Stabilization below Cabot and Cabot Station Ramping Rates (Article A140) would cause the Licensee to violate or breach any law, any applicable license, permit, approval, consent, exemption or authorization from a federal, state, or local governmental authority, any applicable agreement with a governmental entity, the Licensee may deviate from the Flow Stabilization below Cabot and Cabot Station Ramping Rates (Article A140) to the least degree necessary to avoid such violation or breach. The Licensee may also deviate from the Flow Stabilization below Cabot and Cabot Station Ramping Rates for the following reasons:

- (1) To implement Flood Flow Operations as defined in Article A170.
- (2) To perform demonstrations of the resources' operating capabilities under ISO-NE, or its successors, rules and procedures such as, maintaining the Licensee's capacity accreditation (or its successor) or its fast start reserve eligibility. The Licensee shall seek to perform these demonstrations at times that will not cause it to deviate from the conditions in Articles A110-A160, with recognition that April 1 to June 30 should be avoided, to the maximum extent possible.
- (3) To manage the Turners Falls Impoundment to stay within its licensed operating limits in Article A190, with recognition that deviations from April 1 to June 30 should be avoided to the maximum extent possible.
- (4) If compliance with Articles A110-A160 would cause a public safety hazard or prevent timely rescue.

*ISO-NE, or its successors, (or another recognized entity with responsibilities for regional energy and capacity supply) requirements are circumstances when ISO-NE requires the Licensee to be fully available and, if necessary, responsive.

The Flow Stabilization below Cabot Station may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the Flow Stabilization below Cabot Station is so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The Flow Stabilization below Cabot Station may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS, and USFWS, and upon 5 days' notice to the Commission.

Article A170. Flood Flow Operations

Upon license issuance, the Licensee shall operate the Project in accordance with its existing agreement with the United States Army Corps of Engineers (USACE). This agreement, memorialized in the Reservoir and River Flow Management Procedures (1976), as it may be amended from time to time, governs how the Turners Falls Project will operate during flood conditions and coordinate its operations with the Licensee of the Northfield Mountain Pumped Storage Project (FERC No. 2485).

Article A180. Cabot Station Emergency Gate Use

Upon license issuance, the Licensee will use the Cabot Station Emergency Gates under the following conditions: a) a Cabot load rejection which could cause overtopping of the canal, b) dam safety issues such as potential canal overtopping or partial breach, and c) to discharge up to approximately 500 cfs from April 1 to June 15 for debris management. The Licensee shall avoid discharging flows higher than 500 cfs through the gates from April 1 to June 15 if practicable; however, if necessary to discharge higher flows, the Licensee shall coordinate with NMFS to minimize potential impacts to Shortnose Sturgeon in the area below Cabot Station.

Article A190. Turners Falls Impoundment Water Level Management

Upon license issuance, the Licensee shall operate the Turners Falls Impoundment, as measured at the Turners Falls Dam, as follows:

- (a) Maintain water levels between elevation 176.0 feet and 185.0 feet National Geodetic Vertical Datum of 1929 (NGVD29).
- (b) Limit the rate of rise of the Turners Falls Impoundment water level to be less than 0.9 feet/hour from May 15 to August 15 from 8:00 am to 2:00 pm. However, if the NRF is greater than the sum of the hydraulic capacity of Cabot Station and Station No. 1 and the Minimum Flow below Turners Falls Dam in effect at the time, the Turners Falls Impoundment rate of rise requirement will not apply.
- (c) The rate of rise of the Turners Falls Impoundment may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the rate of rise of the Turners Falls Impoundment is so modified, the Licensee shall notify the Commission, MDEP, MDFW, NMFS, and USFWS as soon as possible, but no later than 10 days after such incident. The rate of rise of the Turners Falls Impoundment may also be temporarily modified for short periods upon mutual agreement with the Licensee for the Northfield Mountain Pumped Storage Project (FERC No. 2485), MDEP, MDFW, NMFS, and USFWS, and upon 5 days' notice to the Commission.
- (d) The Licensee may increase the allowable NRF deviation from $\pm 10\%$ to $\pm 20\%$ to better manage Turners Falls Impoundment water levels. The increased flow deviation is limited by the number of hours shown in the first table of Article A160. This allowance for an increased flow deviation is in addition to the exceptions outlined in paragraphs (a) and (b) of Article A160. As such, the increased flow allowable deviations outlined in this paragraph will not count against any time allotment for exceptions outlined in paragraphs (a) and (b) of Article A160. Similarly, operations meeting the exception criteria outlined in paragraphs (a) and (b) of Article A160 will not count against any time allotment for allowable deviations outlined in this paragraph. Allowable flow deviations in excess of

±10% of NRF resulting from conflicting operational requirements will not count against any time allotment for allowable deviations outlined in this paragraph.

Article A200. Project Operation, Monitoring and Reporting Plan

Within 1 year of license issuance, the Licensee shall file with the Commission, for approval, a Project Operation, Monitoring and Reporting Plan describing how the Licensee will document compliance with the operating conditions. The Plan will include the following:

- (a) a description of how the Licensee will comply with Minimum Flows below Turners Falls Dam (Article A110), Total Minimum Bypass Flows below Station No. 1 (Article A120), Minimum Flows below Cabot Station (Article A130), Cabot Station Ramping Rates (Article A140), Variable Releases from Turners Falls Dam and Variable Flow below Station No. 1 (Article A150), Flow Stabilization below Cabot Station (Article A160, implementation starting 3 years after license issuance), and Turners Falls Impoundment Water Level Management (Article A190). These are collectively referred to hereinafter as the operating requirements.
- (b) a provision to file with the Commission, after consultation with the MDEP, MDFW, NFMS, and USFWS, a minimum flow and operation compliance report detailing implementation of the plan, including any allowable deviations that occurred during the reporting period. For the period January 1 to March 31 and July 1 to December 31, the compliance report, including any deviations, will be filed with the Commission by March 1 of the following year. For the months of April, May and June, the monthly compliance report, including any deviations, will be filed with the Commission on June 1, July 1 and August 1, respectively. Upon license issuance until 3 years thereafter, the Licensee shall document on an hourly basis for each day any allowable deviations from the Cabot Station Ramping Rates (Article A140) and demonstrate progress towards meeting the Flow Stabilization below Cabot Station (Article A160). Beginning three years after license issuance until license expiration, the Licensee shall document on an hourly basis for each day any allowable deviations from the Cabot Station Ramping Rates restrictions (Article A140) and Flow Stabilization below Cabot Station restrictions (Article A160). Each day, from April 1 to November 30, the Licensee shall record any allowable deviations in a spreadsheet showing the daily deviations, the reason for the deviation, the number of hours, and scope. The Licensee shall provide the total number of deviations to the MDEP, MDFW, NFMS, and USFWS per the reporting schedule above. Allowable deviations will be tracked as follows:
 - Identify Allowable Deviations: The Licensee shall record the NRF, Turners Falls Dam discharge, Station No. 1 discharge, Cabot Station discharge and total Turners Falls Project discharge (below the Cabot Station tailrace) at the top of each hour. Allowable deviations in both the Cabot Station Ramping Rate and Flow Stabilization below Cabot Station requirements will be recorded. At the top of each hour, the Licensee shall record the change in Cabot Station discharge from the previous hour to determine if any deviation has occurred from the agreed upon Cabot Station Ramping Rate. In addition, the NRF (as detailed in paragraph (b) of the "Operational Regime" section) will be compared with the recorded total Turners Falls Project discharge in a given hour to identify if a Flow Stabilization below Cabot Station deviation occurred over the past hour. Any deviation of either the Cabot Station Ramping Rate or total Turners Falls Project discharge within the hour will be counted in one-hour increments.

- Categorize Allowable Deviations: When an allowable deviation is identified it will be categorized as either Regulatory, as detailed in paragraph (b) of Article A160, NRF Allowance, as detailed in paragraph (d) of the Article A190 or Discretionary, as detailed in paragraph (a) of Article A160.

The Licensee shall develop the Plan after consultation with MDEP, MDFW, NMFS, and USFWS. The Licensee shall include with the Plan documentation of consultation after it has been prepared and provided to MDEP, MDFW, NMFS, and USFWS. The Licensee shall provide a minimum of 30 days for MDEP, MDFW, NMFS, and USFWS to comment and to make recommendations before filing the Plan with the Commission. If the Licensee does not adopt a recommendation, the filing will include the Licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the Plan. Implementation of the Plan will not begin until the Licensee is notified by the Commission that the Plan is approved. Upon Commission approval, the Licensee shall implement the Plan, including any changes required by the Commission.

Article A210. Flow Notification and Website

Within 1 year of license issuance, the Licensee shall provide the following information year-round on a publicly available website:

- On an hourly basis, the Turners Falls Impoundment water elevation, as measured at the Turners Falls Dam, the Turners Falls Dam total discharge, and the Station No. 1 discharge.
- On an hourly basis, the anticipated Turners Falls Dam total discharge and the anticipated Station No. 1 discharge for a 12-hour window into the future. Should the Licensee deviate from passing the 12-hour previous NRF from December 1 to May 31 or the 12-hour average NRF from June 1 to November 30, it will post the revised flows (in the 12-hour look ahead window) to a website as soon as practicable after they are known. Should the Licensee of the Vernon Hydroelectric Project provide the Licensee with flow data more than 12 hours in advance, the Licensee shall publish the information sooner.
- Within one month prior to its annual power canal drawdown, the Licensee shall post on its website the starting and ending time/date of the drawdown, which will last at least 4 days. Throughout the duration of the canal drawdown, the NRF, as defined in Article A110, will be maintained below the Turners Falls Dam.

Article A300. Fish Passage Facilities and Consultation

The Licensee shall implement the following fish passage measures on the schedule specified. When due dates cited in this and other articles are in "years after license issuance," this shall mean on the appropriate date in the specified calendar year after license issuance, regardless of the quarter in which the license is issued. For example, "Year 1 after license issuance" begins on the first January 1 following license issuance.

Upstream Fish Passage

- construct a Spillway Lift at the Turners Falls Dam to be operational no later than April 1 of Year 9 after license issuance.

- (b) rehabilitate the Gatehouse Trapping facility (sampling facility) to be operational no later than April 1 of Year 9 after license issuance.
- (c) retire, either by removal or retaining in place, the Cabot Ladder and the power canal portions of the Gatehouse Ladder within 2 years after the Spillway Lift becomes operational.
- (d) install and operate interim upstream eel passage in the vicinity of the existing Spillway Ladder within 1 year of license issuance and continue operating it until permanent upstream eel passage facilities are operational. The Licensee shall consult MDFW, NMFS, and USFWS on the location and design of the interim eelway(s).
- (e) conduct up to 2 years of eelway siting studies after the Spillway Lift becomes operational, using a similar methodology to relicensing Study 3.3.4 for both years. Based on the siting survey results, design, construct, operate, and maintain up to two permanent upstream eel passage facilities at the Turners Falls Project no later than 3 years after completing the final siting survey. The Licensee shall consult MDFW, NMFS, and USFWS on the location of the two permanent upstream eel passage facilities. The final eelway siting will take into account the ability to maintain the eelway(s) in light of spillage conditions at the Turners Falls Project. The Licensee will not be required to place any eelways at the foot of any active spillway structures.

Downstream Fish Passage

- (f) Within 4 years¹ of license issuance, replace the existing Cabot Station trashrack structure with a new full depth trashrack with 1-inch clear spacing. The new trashracks will have multiple openings for fish passage, including openings on the top and bottom of the water column. The Licensee will attempt to maximize the hydraulic capacity of these openings within the constraints of the conveyance mechanisms. The Licensee will base detailed design alternatives on the following conceptual design; however, the Parties will remain flexible on design alternatives as necessary to meet fish passage goals.

The new trashrack will have multiple surface entrances including a.) between Cabot Units 2 and 3; b.) between Cabot Units 4 and 5; and c.) at the right wall of the intake (looking downstream) at Cabot Unit 6. The openings will be 3-feet-wide by 2-feet-tall and will connect to the existing trash trough located behind the racks. Each opening at the top of the trashrack will have an approximate hydraulic capacity of 24 cfs, and the existing trash trough will convey a total hydraulic capacity of approximately 72 cfs from these openings. The new trashrack will have an additional entrance near the bottom at the left wall of the intake (looking downstream) at Unit 1. This entrance will be approximately 3-feet-wide by 3-feet-tall and will connect to a vertical pipe to safely convey fish to the existing trash trough or log sluice. This entrance will be sized to provide a velocity that attracts fish to the bypass relative to the turbine intakes (approximately 5 feet-per-second). In addition to the entrances integral to the new trashrack structure, fish will be conveyed via a new uniform acceleration weir (UAW) and log sluice. The log sluice will be resurfaced to limit turbulence and injury to migrants. A steel panel (or equivalent) will be provided below the UAW to exclude migrants from being delayed in the space below the UAW. Total flow from all downstream passage components at Cabot Station will be 5% (685 cfs) of maximum hydraulic station capacity (13,728 cfs). The conveyance at each bypass entrance will be determined during the design phase.

- (g) Within 4 years¹ of license issuance, construct a ¾-inch clear-spaced bar rack at the entrance to the Station No. 1 branch canal.

¹Relative to the Cabot Intake Protection and Downstream Passage Conveyance and the Station No. 1 Bar Rack, the times cited are from license issuance based on the time needed to complete construction. The actual first year of operation of these two facilities will depend on when the license is issued. If the License is issued in quarter 1 (Q1, Jan 1-Mar 31) then these two facilities will be operational no later than April 1 of Year 4 after license issuance; if it is issued in Q2 then these two facilities will be operational no later than August 1 of Year 4 after license issuance; and if it is issued after Q2 then these two facilities will be operational no later than April 1 of Year 5 after license issuance.

- (h) Construct a plunge pool downstream of the Turners Falls Dam Bascule Gate No. 1 as part of the construction of the Spillway Lift, to be operational no later than April 1 of Year 9 after license issuance.

Consultation

For any new fish passage facility, the Licensee shall consult and obtain approval from MDFW, NMFS, and USFWS on the facility design and on operation and maintenance procedures. The Licensee shall consult MDFW, NMFS, and USFWS at the 30%, 60%, 90% and 100% design plan milestones. The Licensee shall file the 100% design plans with the Commission, along with documentation of consultation with MDFW, NMFS, and USFWS. If any fish passage adaptive management measures (AMMs) are implemented as discussed in Articles A320 and A330 and require facility design and operation and maintenance procedures, then the Licensee shall follow the same consultation process as the initial fish passage build-out.

The Commission reserves the right to require changes to the design plans. Implementation of the design plans will not begin until the Licensee is notified by the Commission that the design plans are approved. Upon Commission approval, the Licensee shall implement the design plans, including any changes required by the Commission.

Article A310. Schedule of Initial Effectiveness Testing, Consultation Process on Effectiveness Testing Study Plans, and Fish Passage Performance Goals

Schedule of Initial Effectiveness Testing

The Licensee shall complete construction of each fish passage facility, operate the fish passage facility for one season (shakedown year), and then conduct representative and quantitative fish passage effectiveness testing per the schedule below.

Facility	Operational/Shakedown Date	Initial Effectiveness Study Years and Locations to be Tested
Cabot Rack and Downstream Conveyance	Year 4 after license issuance ¹	Years 6-7, the Cabot Downstream Fish Passage Structure and Station No. 1 Rack will be tested.
Station No. 1 Bar Rack	Year 4 after license issuance ¹	
Turners Falls Dam Plunge Pool	Year 9 (by April 1 st) after license issuance	Years 10-11, the Turners Falls Plunge Pool and Spillway Lift will be tested.
Spillway Lift	Year 9 (by April 1 st) after license issuance	

Facility	Operational/Shakedown Date	Initial Effectiveness Study Years and Locations to be Tested
Rehabilitate Gatehouse Trapping Facility (Sampling Facility)	Year 9 (by April 1 st) after license issuance	Not Applicable
Retire Cabot Ladder and Portions of Gatehouse Ladder	No later than Year 11 after license issuance (tied to within 2 years after the Spillway Lift becomes operational).	Not Applicable
Permanent Eel Passage Structure(s)	Year 13 after license issuance	Year 14, the internal efficiency of the permanent eel passage structure(s) will be tested.

¹Relative to the Cabot Intake Protection and Downstream Passage Conveyance and the Station No. 1 Bar Rack, the times cited are from license issuance based on the time needed to complete construction. The actual first year of operation of these two facilities will depend on when the license is issued. If the license is issued in quarter 1 (Q1, Jan 1-Mar 31) then these two facilities will be operational no later than April 1 of Year 4 after license issuance; if it is issued in Q2 then these two facilities will be operational no later than August 1 of Year 4 after license issuance; and if it is issued after Q2 then these two facilities will be operational no later than April 1 of Year 5 after license issuance.

Consultation Process on Effectiveness Study Plans

For any initial fish passage effectiveness studies and any subsequent fish passage effectiveness studies required after implementing any AMMs described in Article A320 and A330, the Licensee shall provide the effectiveness study plans to MDFW, NMFS, and USFWS and request comments on the study plans within 30 days. The Licensee shall consult MDFW, NMFS, and USFWS and obtain their approval on the study plans before conducting the effectiveness studies. The Licensee shall file the effectiveness study plans with the Commission, along with any consultation records.

Fish Passage Performance Goals

The Licensee shall compare the effectiveness study results to the following fish passage performance goals:

Downstream Passage

- 95% of juvenile American Shad arriving 500 meters upstream of the Turners Falls Dam survive migration past the Turners Falls Project within 24 hours.
- 95% of adult American Shad arriving 1 kilometer upstream of the Turners Falls Dam survive migration past the Turners Falls Project within 24 hours.
- 95% of American Eel arriving 1 kilometer upstream of the Turners Falls Dam survive migration past the Turners Falls Project within 48 hours of a flow event. The definition of what constitutes a flow event shall be determined by the Licensee in consultation with MDFW, NMFS and USFWS during effectiveness study plan development.

The downstream passage at the Turners Falls Project is project wide and will include all routes of passage (e.g., spill, fish bypass, and turbine passage).

Upstream Passage

- 75% of adult American Shad arriving 500 meters below Cabot Station successfully pass into the Turners Falls Impoundment within 48 hours. The 75% passage efficiency for American Shad will be based on the first 90% of the American Shad run. The effectiveness testing will be conducted over the entire adult American shad run, but the 75% passage efficiency goal will be based on the first 90% of the run as determined by the Licensee as *a posteriori* analysis of run counts. The Licensee will determine where and how run counts will occur in consultation with MDFW, NMFS and USFWS during effectiveness study plan development. The Licensee, MDFW, NMFS and USFWS will revisit whether the 75% passage efficiency goal is achievable or should be reduced, and whether the 48-hour time-to-pass goal is achievable or should be increased, after implementing the first (Tier 1) and second (Tier 2) round of AMMs as described in Article A330.
- An internal passage efficiency of 95% within the permanent passage structure(s) for American Eel. The 95% internal efficiency assumes it is possible for the Licensee to successfully tag up-migrating eels. The Licensee shall consult MDFW, NMFS, and USFWS on the appropriate size American eel, based on available technology, to test the internal efficiency.

Article A320. Downstream Fish Passage- Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Studies

Initial Effectiveness Studies- Years 6 and 7

The Licensee shall conduct initial effectiveness testing in Years 6 and 7 (see Article 310) to evaluate the fish passage survival and time-to-pass of the newly constructed Station No. 1 bar rack and Cabot Rack and Conveyance Structure and compare the findings at individual components (e.g., Cabot Station and Station No. 1) to the performance goals in Article 310. The Licensee shall develop reports by February 1 of Years 7 and 8 for adult American Shad and by April 1 of Years 7 and 8 for juvenile American Shad and adult American Eel summarizing the survival study findings and provide it to MDFW, NMFS, and USFWS. The Licensee shall consult MDFW, NMFS, and USFWS on the effectiveness study results and determine what, if any, adaptive management measures (AMMs) may be implemented from the table below. The Licensee will target any AMMs to those locations where fish passage performance goals are not achieved. The Licensee shall file a report with the Commission to include the effectiveness testing report and documentation of any AMMs agreed to by the Licensee, MDFW, NMFS, and USFWS, along with any consultation records. If warranted, the Licensee shall consult MDFW, NMFS, and USFWS on when to implement the Round 1 AMMs at Station No. 1 and/or Cabot Station.

Effectiveness Testing of Round 1 AMMs at Station No. 1 and/or Cabot Station and Initial Effectiveness Testing at Turners Falls Dam Plunge Pool- Years 10 and 11

The Licensee shall conduct Round 1 AMM effectiveness testing at Station No. 1 and/or Cabot Station and initial effectiveness testing of the Turners Falls Dam plunge pool in Years 10 and 11. The Licensee shall:

- Compare the effectiveness study results to the performance goals in Article 310.
- Provide the effectiveness study report to MDFW, NMFS, and USFWS by February 1 of Years 11 and 12 for adult American Shad and by April 1 of Years 11 and 12 for juvenile American Shad and adult American Eel summarizing the survival study findings.
- Consult MDFW, NMFS, and USFWS to determine what, if any AMMs may be implemented from the table below and target AMMs to those locations where passage performance goals are not achieved.

- File the effectiveness study report and documentation of any AMMs with the Commission.

If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement any Round 2 AMMs at Station No. 1 and/or Cabot Station and Round 1 AMMs at the Turners Falls Dam plunge pool.

Effectiveness Testing of Round 2 AMMs at Station No. 1 and/or Cabot Station and Round 1 AMMs at Turners Falls Dam Plunge Pool- Years 14 and 15

The Licensee shall conduct Round 2 AMM effectiveness testing at Station No. 1 and/or Cabot Station and Round 1 AMMs at the Turners Falls Dam plunge pool in Years 14 and 15. The Licensee shall follow the same consultations steps bulleted above; however, the Licensee shall provide the effectiveness study report to MDFW, NMFS, and USFWS by February 1 of Years 15 and 16 for adult American Shad and by April 1 of Years 15 and 16 for juvenile American Shad and adult American Eel.

If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement any Round 3 AMMs at Station No. 1 and/or Cabot Station and Round 2 AMMs at the Turners Falls Dam plunge pool.

Effectiveness Testing of Round 3 AMMs at Station No. 1 and/or Cabot Station and Round 2 AMMs at Turners Falls Dam Plunge Pool- Years 18 and 19

The Licensee shall conduct Round 3 AMM effectiveness testing at Station No. 1 and/or Cabot Station and Round 2 AMMs at the Turners Falls Dam plunge pool in Years 18 and 19. The Licensee shall follow the same consultations steps bulleted above however, the Licensee shall provide the effectiveness study report to MDFW, NMFS, and USFWS by February 1 of Years 19 and 20 for adult American Shad and by April 1 of Years 19 and 20 for juvenile American Shad and adult American Eel.

MDFW, NMFS, and USFWS have agreed, consistent with the terms of the Flows and Fish Passage Settlement Agreement (March 2023), not to exercise any reserved or other regulatory authority regarding downstream passage to request or require any AMMs other than those listed in the table below for the first 25 years of the license. In addition, MDFW, NMFS, and USFWS have agreed, consistent with the terms of the settlement agreement, that they will not request or require Cabot Station shutdowns over the life of the license.

Downstream Adaptive Management Measures

Adaptive Management Measure (if needed)	Timing
<p><u>Turners Falls Dam</u></p> <ul style="list-style-type: none"> • Modify the bascule gate setting(s) and resultant spill (rate, location). <p><u>Station No. 1</u></p> <ul style="list-style-type: none"> • Install a behavioral barrier. <p><u>Cabot Station</u></p> <ul style="list-style-type: none"> • Modify the downstream passage conveyance design to reduce impact velocities and shear stresses (e.g., pump-back system; gradient reduction; piping, lining); 	<p>Initial Effectiveness Testing at Cabot Station and Station No. 1: Years 6-7.</p> <p>Initial Effectiveness Testing at Turners Falls Dam Plunge Pool and Round 1 Effectiveness Testing for any AMMs implemented at Cabot Station and/or Station No. 1 (if needed): Years 10-11.</p> <p>Round 2 AMM Effectiveness Testing at Cabot Station and/or Station No. 1 (if needed) and Round 1 Effectiveness</p>

Adaptive Management Measure (if needed)	Timing
<ul style="list-style-type: none"> • Modify the downstream passage conveyance design to increase water depth; • Modify the area of flow convergences of the trash trough, Uniform Acceleration Weir, eel pipe, and sluiceway; • Modify the area of flow convergence of the sluiceway and the receiving waters in the Connecticut River (e.g., adjustable lip, velocity control, and plunge pool depth) 	<p>Testing at Turners Falls Dam Plunge Pool (if needed): Years 14-15</p> <p>Round 3 AMM Effectiveness Testing at Cabot Station and/or Station No. 1 (if needed) and Round 2 Effectiveness Testing at Turners Falls Dam Plunge Pool (if needed): Years 18-19</p>

Article A330. Upstream Fish Passage Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Testing

Initial Effectiveness Testing of Adult American Shad- Years 10 and 11

The Licensee shall conduct initial effectiveness testing in Years 10 and 11 (see Article 310) to evaluate upstream fish passage efficiency and time-to-pass at the Cabot Station tailrace, Rawson Island, Station No. 1 tailrace, and at the Spillway Lift through the Gatehouse Ladder exit and compare the findings to the performance goals in Article 310. The Licensee shall develop a report by February 1 of Years 11 and 12 for adult American Shad summarizing the effectiveness study findings and provide it to MDFW, NMFS, and USFWS. The Licensee shall consult MDFW, NMFS, and USFWS on the effectiveness study results and determine what, if any, Tier 1 adaptive management measures (AMMs) from the table below may be implemented.

The Licensee’s implementation of Tier 1 AMMs, if warranted, will be informed by the initial effectiveness testing results. While the overall passage efficiency goal is 75% in 48 hours, there are four locations (or nodes) of interest, where the Licensee can provide enhancements as part of the AMMs for upstream passage efficiency including Cabot Station, Rawson Island, Station No. 1 and the Spillway Lift. If the individual passage efficiency at all four locations is 90% or higher, or if the overall passage efficiency goals are met, no Tier 1 AMMs will be implemented. If the individual passage efficiency at any of the four locations is less than 90%, the Licensee shall target Tier 1 enhancements to achieve an individual location passage efficiency of 90% or higher. However, if the Licensee, MDFW, NFMS, and USFWS agree that improvements can be made at other nodes that would improve the overall passage efficiency a comparable amount as an enhancement to achieve an individual location/node to at least 90%, then that enhancement can be implemented.

If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement the Tier 1 AMMs.

Tier 1 Adaptive Management Measures Effectiveness Testing of Adult American Shad- Years 13 and 14

The Licensee shall conduct Tier 1 AMM effectiveness testing in Years 13 and 14 and conduct the following:

- The Licensee shall compare the effectiveness study results to the performance goals in Article 310.
- The Licensee shall provide the effectiveness study report to MDFW, NMFS and USFWS by February 1 of Years 14 and 15.

- At the election of the Licensee, the Licensee may provide the effectiveness study report to an Independent Peer Review Panel (IPRP) of experts to evaluate the study results. The IPRP will consist of one member selected by the Licensee, one member selected collectively by MDFW, NMFS, and USFWS, and one member selected jointly by the Licensee, MDFW, NMFS, and USFWS. After the IPRP's review of the effectiveness study findings, the IPRP will evaluate the ability to achieve the upstream fish passage performance goals in Article 310 and provide a summary report of its findings to the Licensee, MDFW, NMFS, and USFWS within 3 months of receiving the effectiveness study report.
- If the 75% passage efficiency/48-hour time-to-pass performance goal is not met, the Licensee shall consult MDFW, NMFS, and USFWS to determine whether the 75% passage efficiency goal is achievable or should be reduced, and/or the 48-hour time-to-pass goal is achievable or should be increased. Any modifications to the 75% passage efficiency/48-hour time-to-pass must be agreed to by the Licensee, MDFW, NMFS, and USFWS.
- The Licensee shall consult MDFW, NMFS, and USFWS to determine what, if any, AMMs will be implemented.
- The Licensee shall file the effectiveness study report and documentation of any AMMs with the Commission.

If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement either the remaining Tier 1 AMMs and/or Tier 2 AMMs.

Tier 1 and/or Tier 2 Adaptive Management Measures Effectiveness Testing of Adult American Shad- Years 18 and 19

The Licensee shall conduct any Tier 1 and/or Tier 2 AMM effectiveness testing in Years 18 and 19 and conduct the following:

- The Licensee shall compare the effectiveness study results to the performance goals in Article 310.
- The Licensee shall provide the effectiveness study report to MDFW, NMFS and USFWS by February 1 of Years 19 and 20.
- The Licensee shall file the effectiveness study report and documentation of any AMMs with the Commission.

If, after the Licensee implements additional Tier 1 AMMs and/or Tier 2 AMMs, the overall passage efficiency is greater than 65% or a lesser number as agreed to by the Licensee, MDFW, NMFS, and USFWS, and the overall time-to-pass is less than 60 hours or a higher number as agreed by the same group, then MDFW, NMFS, and USFWS will not exercise any reserved or other regulatory authority to require additional upstream fish passage measures or operational changes.

MDFW, NMFS, and USFWS have agreed, consistent with the terms of the Flows and Fish Passage Settlement Agreement (March 2023), not to exercise any reserved or other regulatory authority regarding upstream passage to request or require any AMMs other than those listed in the table below for the first 25 years of the license. In addition, MDFW, NMFS, and USFWS have agreed, consistent with the terms of the settlement agreement, that they will not request or require Cabot Station shutdowns or a lift at Cabot Station over the life of the license.

Effectiveness Testing of Juvenile American Eel- Year 14

The Licensee shall conduct effectiveness testing in Year 14 to evaluate the internal efficiency of the permanent eelway structure(s) and compare the findings to the performance goals in Article 310.

Upstream Adaptive Management Measures- Tier 1 and 2

Adaptive Management Measure (if needed)	Schedule
Tier 1	
<p><u>Cabot Tailrace and Rawson Island Nodes</u></p> <ul style="list-style-type: none"> Upon license issuance, the Total Minimum Bypass Flow below Station No. 1 from June 1 to June 15 is 4,500 cfs (see Article A120). This AMM includes increasing the Total Minimum Bypass Flow below Station No. 1 from June 1 to June 15 to 6,500 cfs until 90% of the American Shad run enter the Spillway Lift, upon which the Total Minimum Bypass Flow below Station No. 1 will revert to 4,500 cfs. <p>If this adaptative management measure is enacted and after two years of effectiveness testing, it improves the fish passage efficiency and time-to-pass goals, this change may be implemented throughout the remainder of the license, subject to other adaptive management measures. However, even after this change, the 6,500 cfs will revert to 4,500 cfs when 90% of the adult American Shad run enter the Spillway Lift before or within the June 1 to 15 period. The indicator as to when the 90% of the adult American Shad run passes will be determined using a predictive model to be developed by the Licensee in consultation with MDFW, NMFS, and USFWS. The Licensee shall file with the Commission the predictive model results within 6 months of license issuance and it will be updated and/or refined with data collected over intervening years.</p> <p>If this change is implemented, from June 1 to June 15, the Minimum Flow below the Turners Falls Dam (Article A110) must be 4,290 cfs or the NRF, whichever is less; and the Total Minimum Bypass Flow below Station No. 1 (Article A120) must be 6,500 cfs or the NRF, whichever is less.</p> <p><u>Station No. 1 Node</u></p> <ul style="list-style-type: none"> Shift the distribution of the Total Minimum Bypass Flow below Station No. 1 (Article A120) to increase the Total Minimum Flow below Turners Falls Dam (Article A110) from April 1 to June 30 until 90% of the adult American Shad run enter the Spillway Lift, upon which it will revert back to the flow requirements in Articles A110 and A120. The Total Minimum Bypass Flow below Station No. 1 remains the same from April 1 to June 30 as described in Article A120. <p><u>Spillway Lift</u></p> <ul style="list-style-type: none"> Adjust the new plunge pool release and/or bascule gate operation and/or, Adjust the new fish lift attraction water and entrance conditions and/or, Adjust the timing and frequency of lift operations and/or; Adjust the entrance gate. 	<p>Years of Initial Effectiveness Testing: Years 10-11</p> <p>Time Needed to Implement AMM(s): Year 0 since all Tier 1 AMMs are operational</p> <p>Years of Post AMM Effectiveness Testing: Years 13-14</p>

Adaptive Management Measure (if needed)	Schedule
Tier 2	
<p><u>Cabot Tailrace Node</u></p> <ul style="list-style-type: none"> Install a behavioral barrier near the Cabot Station tailrace to guide fish upstream for passage at the Turners Falls Dam. If this AMM is implemented, then the Total Minimum Bypass Flow below Station No. 1 (Article A120) will be reduced from 6,500 cfs to 4,500 cfs (Tier 1 AMM) from June 1 to June 15 for the period of testing the Tier 2 measures. At the end of Tier 2 testing (and provided that the 6,500 cfs extension is not needed to significantly improve passage efficiency or time-to-pass at Rawson Island) either the increased flow of 6,500 cfs (June 1 to June 15) will be implemented or the behavioral barrier but not both unless it is demonstrated that both are needed to make a substantial improvement in passage efficiency or time-to-pass. <p><u>Rawson Island Node</u></p> <ul style="list-style-type: none"> If it is determined that the river channel adjacent to Rawson Island is inhibiting upstream fish passage, then constructing a zone of passage is an AMM. Prior to conducting any work associated with this AMM, the Licensee shall consult MDFW, NMFS, USFWS, recreational boating and Tribal interests and the Massachusetts Natural Heritage and Endangered Species Program (NHESP) on the design of the zone of passage. If the zone of passage is constructed, then the Total Minimum Bypass Flow below Staton No. 1 will be reduced from 6,500 cfs to 4,500 cfs (Tier 1 AMM) from June 1 to June 15 for the period of testing the Tier 2 measures. At the end of Tier 2 testing (and provided that the 6,500 cfs extension is not needed to significantly improve passage efficiency or time-to-pass at Rawson Island) the 6,500 cfs will be reduced back to 4,500 cfs. <p><u>Station No. 1 Node</u></p> <ul style="list-style-type: none"> Install a behavioral barrier near the Station No. 1 tailrace to guide fish upstream for passage at the Turners Falls Dam. If this AMM is implemented, then the Turners Falls Dam Spill/Sum of Fall River, Turners Falls Hydro, LLC, Milton Hilton, LLL and Station No. 1 flow split will be returned to the 67%/33%, respectively, from April 1 to June 30. At the end of Tier 2 testing, either the increased Turners Falls Dam Minimum Flow component of the flow split used in Tier 1 will be implemented or the behavioral barrier but not both unless it is demonstrated that both are needed to make a substantial improvement in passage efficiency or time to pass. <p><u>Turners Falls Dam/Fish Lift Node</u></p> <ul style="list-style-type: none"> Internal structural modifications to improve hydraulics for fish movement, as necessary. 	<p>Time Needed to Implement AMM(s): Year 15-16</p> <p>Shakedown: Year 17</p> <p>Years of Post AMM Effectiveness Testing: Years 18-19</p>

Article A340. Fishway Operating Periods¹

The Licensee shall operate the fishways during the following periods:

Upstream eel passage	May 1 to November 15
Upstream anadromous	April 4 to July 15
Downstream passage	April 4 to November 15

¹Future refinement of the timing on an annual or permanent basis may be made by the MDFW, NMFS, and USFWS based on new information and after consultation with the Licensee.

Article A350. Fish Passage Facilities Operation and Maintenance Plan

The Licensee shall develop and implement a Fish Passage Facilities Operations and Maintenance Plan (FOMP). The FOMP shall detail how and when the fishways will be operated and describe routine maintenance activities that will occur both during and outside of the fish passage season. The FOMP will include a provision to provide annual fishway Operation and Maintenance (O&M) reports that summarize the status of the fish passage facilities, identify needed repairs or equipment replacement, etc. The O&M report shall be submitted to the MDFW, NMFS, and USFWS by January 31 annually. The FOMP shall be developed in consultation with and require approval by the MDFW, NMFS, and USFWS prior to submitting the final FOMP to the FERC for approval.

The FOMP shall be completed no later than 6 months after license issuance for the interim upstream eel passage which will be placed into service within 1 year of license issuance per Article A300, and for existing fish passage facilities (i.e., Cabot downstream fish bypass; Cabot Ladder; Spillway Ladder; and Gatehouse Ladder). Thereafter, the same FOMP shall be amended by the Licensee within 6 months prior to the following:

- Any fish passage structures are placed into service, as outlined in the schedule in Article A300;
- Any AMM’s are placed into service, as outlined in the schedule in Articles A320 and A330; and,
- Any operational or facilities modifications resulting from new information obtained from operation of the fish passage facilities pursuant to the annual O&M reports.

FOMP provisions dealing with facilities that are decommissioned over the term of the license may be dropped from revisions of the FOMP after decommissioning.

Article A400. Bald Eagle Protection Plan

The Licensee shall implement the Bald Eagle Protection Plan dated January 2023.

Article A410. Bat Protection Measures

The Licensee shall implement the following measures to protect state or federally listed bat habitat: (1) avoid cutting trees equal to or greater than 3 inches in diameter at breast height within the Turners Falls Project boundary from April 1 through October 31, unless they pose an immediate threat to human life or property (hazard trees); and (2) where non-hazard trees need to be removed, only remove non-hazard trees between November 1 and March 31.

Turners Falls Hydroelectric Project (FERC Project Number 1889)

Bald Eagle Protection Plan



JANUARY 2023

BACKGROUND

The purpose of this plan is to guide the Licensee's management and maintenance of lands at the Turners Falls Hydroelectric Project (Project) over the new license term for the protection of bald eagles.

Although bald eagles have been removed from the endangered species list, bald and golden eagles are still protected under multiple federal laws and regulations including the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Bald eagles winter along the Connecticut River in the Project area. Bald eagles are known to perch in riverbank trees and forage over the Connecticut River in Project vicinity. As part of licensing, several bald eagles, adults and juveniles, have been observed perching or foraging in the Turners Falls Impoundment (TFI) and Northfield Mountain in both 2014 and 2015, and three occupied bald eagle nests were located within the study area. These nests were found downstream on Third Island (below Cabot Station), near Smead Island, Barton Island in Barton Cove, and along the east bank of the TFI across from Stebbins Island in the upper reaches of the TFI. Since the study, the Licensees staff at the Northfield Mountain Visitor Center have provided anecdotal information on two additional eagle nests located within the TFI. One is located in the vicinity of Kidd's Island either on the Island or the eastern shore in the Town of Northfield and one in Turners Falls, on the hillside in the general vicinity of the Turners Falls Airport runway.

PROTECTION MEASURES

Given the nature and scope of Project operations, no adverse effects on bald eagles are anticipated. In the event that tree removal or construction activities are necessary at the Project, the Licensee shall implement the conservation measures described below to avoid effects to bald eagles.

Prior to any tree clearing within the Project boundary or areas immediately adjacent to the Project boundary by the Licensee or its contractors, the area to be cleared will be observed for bald eagle nests by the Licensee. If practicable, the Licensee should also survey for nests within 660 feet of the proposed clearing because nests adjacent to clearing may also be indirectly affected. If such nests are discovered, the Licensee shall consult the Massachusetts Division of Fisheries and Wildlife (MDFW) and the United States Fish and Wildlife Service (USFWS) prior to tree-clearing activities and the tree-clearing activities shall be performed in accordance with the applicable regulations and guidance (i.e., the National Bald Eagle Management Guidelines, USFWS 2007, or as amended).

During the nesting season (January 1 through September 30), no tree clearing will occur within 330 feet of, and no construction activities will occur within 660 feet of, any known bald eagle nests by the Licensee or its contractors. The National Bald Eagle Management Guidelines advise against conducting external construction and land clearing activities within 660 feet of bald eagle nests during the breeding season. Additionally, the Guidelines recommend maintaining a year-round buffer between nests and tree clearing of at least 330 feet and a year-round buffer between external construction and nests of either 330 or 660 feet, depending on the construction's size, visibility, and local precedence. For any project-related construction activities, work that requires blasting or other activities that produce extremely loud noises within 1/2 mile of active nests will be avoided. The Licensee shall consult with the MDFW and USFWS regarding tree clearing or construction activities that cannot meet these conditions.

Appendix B. Protection, Mitigation, and Enhancement Measures Recommended to be Included in the New Northfield Mountain Pumped Storage Project License

Appendix B: Draft License Articles- Northfield Mountain Pumped Storage Project

Article B100. Project Operations

Upon license issuance, the Licensee shall:

- (a) operate the Northfield Mountain Pumped Storage Project in accordance with its existing agreement with the United States Army Corps of Engineers (USACE). This agreement, memorialized in the Reservoir and River Flow Management Procedures (1976), as it may be amended from time to time, governs how the Project will operate during flood conditions and coordinate its operations with the Licensee of the Turners Falls Hydroelectric Project (FERC No. 1889).
- (b) operate the Northfield Mountain Pumped Storage Project upper reservoir between elevation 1004.5 and 920.0 feet National Geodetic Vertical Datum of 1929 (NGVD29).

Article B200. Fish Intake Protection and Consultation

Intake Protection

The Licensee shall install a barrier net in front of the Northfield Mountain tailrace/intake, having 3/8-inch mesh on the top and 3/4-inch mesh on the bottom. The barrier net design shall be based on the conceptual design in the Amended Final License Application filed with the Commission in December 2020, as modified through consultation with MDFW, NMFS, and USFWS, from June 1 to November 15 to protect out-migrating American Shad and adult American Eel, to be operational no later than June 1 of Year 7 after license issuance.

Consultation

The Licensee shall consult and obtain approval from MDFW, NMFS, and USFWS on the barrier net design and on operation and maintenance procedures. The Licensee shall consult MDFW, NMFS, and USFWS at the 30%, 60%, 90% and 100% design plan milestones. The Licensee shall file the 100% design plans with the Commission, along with documentation of consultation with MDFW, NMFS, and USFWS.

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

Article B210. Initial Intake Protection Effectiveness Testing and Fish Passage Performance Goals

Initial Effectiveness Testing

The Licensee shall complete construction of the Northfield Mountain barrier net, operate the barrier net for one season (shakedown year), and conduct representative and quantitative effectiveness testing in Years 10 and 11 to evaluate the downstream fish passage survival and time-to-pass compared to the performance goals below.

Consultation Process on Effectiveness Study Plans

For any initial fish passage effectiveness studies and any subsequent fish passage effectiveness studies required after implementing any AMMs described in Article B220, the Licensee shall provide the effectiveness study plans to MDFW, NMFS, and USFWS and request comments on the study plans within

30 days. The Licensee shall consult MDFW, NMFS, and USFWS and obtain their approval on the study plans before conducting the effectiveness study. The Licensee shall file the effectiveness study plans with the Commission, along with any consultation records.

Fish Passage Performance Goals

The Licensee shall compare the effectiveness study results to the following fish passage performance goals:

- 95% of juvenile American Shad arriving 500 meters upstream of the Northfield Mountain Pumped Storage Project tailrace survive migration past the Northfield Mountain Pumped Storage Project tailrace within 24 hours.
- 95% of adult American Shad arriving 1 kilometer upstream of the Northfield Mountain Pumped Storage Project tailrace survive migration past the Northfield Mountain Pumped Storage Project tailrace within 24 hours.
- 95% of American Eel arriving 1 kilometer upstream of the Northfield Mountain Pumped Storage Project tailrace survive migration past the Northfield Mountain Pumped Storage Project tailrace within 48 hours of a flow event. The definition of what constitutes a flow event shall be determined by the Licensee in consultation with MDFW, NMFS, and USFWS during effectiveness study plan development.

Article B220. Downstream Fish Passage- Initial Effectiveness Studies, Adaptive Management Measures and Subsequent Effectiveness Studies

Initial Effectiveness Studies- Years 10 and 11

The Licensee shall conduct initial effectiveness testing in Years 10 and 11 (Article B210) to evaluate the fish passage survival and time-to-pass of the newly constructed barrier net and compare the findings to the performance goals in Article B210. The Licensee shall develop a report by February 1 of Years 11 and 12 for adult American Shad and by April 1 of Years 11 and 12 for juvenile American Shad and adult American Eel summarizing the survival study findings and provide it to MDFW, NMFS, and USFWS. The Licensee shall consult MDFW, NMFS, and USFWS on the effectiveness study results and determine what, if any, adaptive managements measures (AMMs) may be implemented from the table below. The Licensee shall file a report with the Commission to include the effectiveness testing report and documentation of any AMMs agreed to by the Licensee, MDFW, NMFS, and USFWS, along with any consultation records. If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement any Round 1 AMMs.

Effectiveness Testing of Round 1 AMMs - Years 14 and 15

The Licensee shall conduct Round 1 AMM effectiveness testing in Years 14 and 15. The Licensee shall:

- Compare the effectiveness study results to the performance goals in Article B210.
- Provide the effectiveness study report to MDFW, NMFS, and USFWS by February 1 of Years 15 and 16 for adult American Shad and by April 1 of Years 15 and 16 for juvenile American Shad and adult American Eel.
- Consult MDFW, NMFS, and USFWS to determine what, if any AMMs may be implemented from the table below.
- File the effectiveness study report and documentation of any AMMs with the Commission.

If warranted, the Licensee shall consult MDFW, NMFS and USFWS on when to implement any Round 2 AMMs.

Effectiveness Testing of Round 2 AMMs - Years 17 and 18

The Licensee shall conduct Round 2 AMM effectiveness testing in Years 17 and 18. The Licensee shall follow the same consultations steps bulleted above; however, the Licensee shall provide the effectiveness study report to MDFW, NMFS, and USFWS by February 1 of Years 18 and 19 for adult American Shad and by April 1 of Years 18 and 19 for juvenile American Shad and adult American Eel.

MDFW, NMFS, and USFWS have agreed, consistent with the terms of the Flows and Fish Passage Settlement Agreement (March 2023), not to exercise any reserved or other regulatory authority regarding passage to request or require any AMMs other than those listed in the table below for the first 25 years of the license. In addition, they have agreed, consistent with the settlement agreement, not to request or require pumping restrictions at any time over the life of the license.

Downstream Adaptive Management Measures

Adaptive Management Measure (if needed)	Timing
<p><u>Northfield Mountain Intake/Tailrace</u></p> <ul style="list-style-type: none"> • Alter the arrangement and size of the net panels (e.g. extend depth of the smaller panels). • Improve maintenance measures for the net. 	<p>Initial Effectiveness Testing of Barrier Net: Years 10-11.</p> <p>Round 1 AMM Effectiveness Testing (if needed): Years 14-15</p> <p>Round 2 AMM Effectiveness Testing (if needed): Years 17-18</p>

Article B230. Fishway Operating Periods¹

The Licensee shall operate the barrier net for downstream passage from June 1 to November 15.

¹Future refinement of the timing may be made by the MDFW, NMFS, and USFWS based on new information and after consultation with the Licensee.

Article B240. Fish Passage Facility Operation and Maintenance Plan for Barrier Net

The Licensee shall develop and implement a Fish Passage Facilities Operations and Maintenance Plan (FOMP) for the barrier net. The FOMP shall detail how and when the barrier net will be operated and describe routine maintenance activities that will occur both during and outside of the downstream fish passage season. The FOMP will include a provision to provide annual fishway Operation and Maintenance (O&M) reports that summarize the status of the barrier net, identify needed repairs or equipment replacement, etc. The O&M report shall be submitted to the MDFW, NMFS, and USFWS by January 31 annually. The FOMP shall be developed in consultation with and require approval by the MDFW, NMFS, and USFWS prior to submitting the final FOMP to the FERC for approval.

The FOMP shall be completed no later than 6 months prior to the barrier net being placed into service, as outlined in the schedule in Article B200. Thereafter, the same FOMP shall be amended by the Licensee within 6 months prior to the following:

- Any AMM's are placed into service, as outlined in Articles B220; and,
- Any operational or facility modifications resulting from new information obtained from operation of the barrier net pursuant to the annual O&M reports.

Article B300. Bald Eagle Protection Plan

The Licensee shall implement the Bald Eagle Protection Plan dated January 2023.

Article B310. Bat Protection Measures

The Licensee shall implement the following measures to protect state or federally listed bat habitat: (1) avoid cutting trees equal to or greater than 3 inches in diameter at breast height within the Northfield Mountain Pumped Storage Project boundary from April 1 through October 31, unless they pose an immediate threat to human life or property (hazard trees); and (2) where non-hazard trees need to be removed, only remove non-hazard trees between November 1 and March 31.

Northfield Mountain Project (FERC Project Number 2485)

Bald Eagle Protection Plan



JANUARY 2023

BACKGROUND

The purpose of this plan is to guide the Licensee's management and maintenance of lands at the Northfield Mountain Pumped Storage Project (Project) over the new license term for the protection of bald eagles.

Although bald eagles have been removed from the endangered species list, bald and golden eagles are still protected under multiple federal laws and regulations including the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Bald eagles winter along the Connecticut River in the Project area. Bald eagles are known to perch in riverbank trees and forage over the Connecticut River in Project vicinity. As part of licensing, several bald eagles, adults and juveniles, have been observed perching or foraging in the Turners Falls Impoundment (TFI) and Northfield Mountain in both 2014 and 2015, and two occupied bald eagle nests were located within the study area. These nests were found downstream on Third Island (below Cabot Station), near Smead Island, Barton Island in Barton Cove, and along the east bank of the TFI across from Stebbins Island in the upper reaches of the TFI. Since the study, the Licensees staff at the Northfield Mountain Visitor Center have provided anecdotal information on two additional eagle nests located within the TFI. One is located in the vicinity of Kidd's Island either on the Island or the eastern shore in the Town of Northfield and one in Turners Falls, on the hillside in the general vicinity of the Turners Falls Airport runway.

PROTECTION MEASURES

Given the nature and scope of Project operations, no adverse effects on bald eagles are anticipated. In the event that tree removal or construction activities are necessary at the Project, the Licensee shall implement the conservation measures described below to avoid effects to bald eagles.

Prior to any tree clearing within the Project boundary or areas immediately adjacent to the Project boundary by the Licensee or its contractors, the area to be cleared will be observed for bald eagle nests by the Licensee. If practicable, the Licensee should also survey for nests within 660 feet of the proposed clearing because nests adjacent to clearing may also be indirectly affected. If such nests are discovered, the Licensee shall consult the Massachusetts Division of Fisheries and Wildlife (MDFW) and the United States Fish and Wildlife Service (USFWS) prior to tree-clearing activities and the tree-clearing activities shall be performed in accordance with the applicable regulations and guidance (i.e., the National Bald Eagle Management Guidelines, USFWS 2007, or as amended).

During the nesting season (January 1 through September 30), no tree clearing will occur within 330 feet of, and no construction activities will occur within 660 feet of, any known bald eagle nests by the Licensee or its contractors. The National Bald Eagle Management Guidelines advise against conducting external construction and land clearing activities within 660 feet of bald eagle nests during the breeding season. Additionally, the Guidelines recommend maintaining a year-round buffer between nests and tree clearing of at least 330 feet and a year-round buffer between external construction and nests of either 330 or 660 feet, depending on the construction's size, visibility, and local precedence. For any project-related construction activities, work that requires blasting or other activities that produce extremely loud noises within 1/2 mile of active nests will be avoided. The Licensee shall consult with the MDFW and USFWS regarding tree clearing or construction activities that cannot meet these conditions.

**Appendix C. Measures Agreed to Among the Parties But Not to be Included in
New Project License**

ENVIRONMENTAL

Section C101. Ichthyoplankton Mitigation Fund (Northfield Mountain Project)

The Licensee of the Northfield Mountain Pumped Storage Project (FERC No. 2485) shall provide funding for habitat improvement projects and/or alosine management activities to offset the potential loss of ichthyoplankton through entrainment at the Northfield Mountain Pumped Storage Project. The Licensee shall make payments to the United States Fish and Wildlife Service or its designee per the schedule below by February 1 of each identified year.

Year after License Issuance	Amount
1	\$112,800
13	\$35,000
15	\$220,000
20	\$90,000
25	\$110,000
30	\$294,000
35	\$125,000
40	\$132,481
45	\$177,000
Total	\$1,296,281

Section C102. Cobblestone Tiger Beetle Fund (Turners Falls Project)

The Licensee of the Turners Falls Project (FERC No. 1889) shall provide funding for Cobblestone Tiger Beetle (CTB) conservation and management activities to provide a long-term net benefit to CTB in Massachusetts. The Licensee shall make payments to the Massachusetts Division of Fisheries and Wildlife or its designee per the schedule below by February 1 of each identified year.

Year after License Issuance	Amount
4	\$50,000
5	\$80,000
6	\$100,000
7	\$150,000
8	\$150,000
9	\$150,000
10	\$150,000
11	\$75,000
12	\$75,000
Total	\$980,000

OPERATIONS

Section C103. Agency Support for Flow Data from Licensee of Vernon Hydroelectric Project (Turners Falls and Northfield Mountain Projects)

The Massachusetts Division of Fisheries and Wildlife (MDFW) shall independently request from the Commission, at the same time the Settlement Agreement is filed, that the Licensee of the Vernon Hydroelectric Project (Vernon Project, FERC No. 1904) shall provide to the Licensees of the Turners Falls Hydroelectric Project (FERC No. 1889) and Northfield Mountain Pumped Storage Project (FERC No. 2485) the following upon license issuance:

- Electronically provide by 8:00 am of each day, the next day's 24 hour anticipated Vernon Project total discharge. The next day's 24-hour anticipated Vernon Project total discharge will be updated once the day ahead power bidding market closes and Independent System Operator-New England (ISO-NE) issues the day ahead schedule. If ISO-NE updates the day ahead hourly Vernon Project total discharge, then that revised schedule shall be provided to the Licensees within 2 hours of the Vernon Project Licensee receiving an update from ISO-NE.
- Electronically provide the instantaneous Vernon Hydroelectric Project total discharge and tailwater elevation.

Section C104. Licensee Reporting on Flow Stabilization below Cabot Station Measures for Years 1 -3 after License Issuance (Turners Falls Project)

Upon license issuance, the Licensee shall implement the proposed Flow Stabilization below Cabot Station as defined in Article A160. *Flow Stabilization below Cabot Station and Allowable Deviations for Flexible Operations*¹, recognizing that it will not be required to demonstrate to the Federal Energy Regulatory Commission (FERC), or the Parties, that it is meeting the Flow Stabilization below Cabot Station requirements until the third (3rd) anniversary of the date of license issuance. The Licensee shall provide the Parties an annual report (by March 1 of the following year) for Years 1 and 2 and quarterly reports for Year 3 to demonstrate substantive progress towards implementing the Flow Stabilization below Cabot Station. Quarterly reports for January 1 to March 31, April 1 to June 30, July 1 to September 30 and October 1 to December 31 shall be provided to the Parties by June 1, September 1, December 1 and March 1 (of the following year), respectively.

¹The Flow Stabilization below Cabot Station is based on providing a percentage of the naturally routed flow (NRF). The NRF is defined in Article A110. *Minimum Flows below Turners Falls Dam* as follows:

From December 1 through June 30, the NRF is defined as the hourly sum of the discharges from 12 hours previous as reported by the: Vernon Hydroelectric Project (FERC No. 1904), Ashuelot River United States Geological Survey gauge (USGS, Gauge No. 01161000), and Millers River USGS gauge (Gauge No. 01166500).

From July 1 through November 30, the NRF is defined as the hourly sum of the discharges averaged from 1 to 12 hours previous as reported by the: Vernon Hydroelectric Project, Ashuelot River USGS gauge, and Millers River USGS gauge. Upon license issuance until 3 years thereafter, the Licensee shall operate the Turners Falls Project based on the NRF computational method from July 1 through November 30 to determine if the Turners Falls Project can be operated in this manner. If the Turners Falls Project cannot

be operated in this manner, the Licensee shall consult Massachusetts Division of Fisheries and Wildlife, National Marine Fisheries Service and United States Fish and Wildlife Service on alternative means of computing the NRF that are feasible for Turners Falls Project operation and sufficiently dampen upstream hydroelectric project flexible operations.

Appendix D. Authorized Representatives of the Parties

FirstLight

Justin Trudell
Chief Operating Officer
FirstLight Power
111 Soth Bedford Street, Suite 103
Burlington, MA 01803
Phone: 781-653-4247
Email: justin.trudell@firstlightpower.com

American Whitewater

Bob Nasdor
Northeast Stewardship & Legal Director
American Whitewater
65 Blueberry Hill Lane
Sudbury, MA 01776
Phone: 617-584-4566
Email: bob@americanwhitewater.org

Appalachian Mountain Club

Mark Zakutansky
Director of Conservation Policy Engagement
Appalachian Mountain Club
45 Jordan Road, PO Box 527
Albrightsville, PA 18210
Phone: 610-868-6915
Email: mzakutansky@outdoors.org

Crab Apple Whitewater, Inc.

Frank Mooney
River Manager/Ownership Family
Crab Apple Whitewater, Inc.
PO Box 295
Charlemont, MA 01339
Phone: 413-824-1842
Email: frank@crabapplewhitewater.com

Massachusetts Division of Fisheries and Wildlife

Todd Richards
Assistant Director of Fisheries
Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581
Phone: 508-389-6336
Email: todd.richards@mass.gov

Everose Schluter
Assistant Director of Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581
Phone: 508-389-6346
Email: eve.schluter@mass.gov

National Marine Fisheries Service

Christopher Boelke
Chief, New England Branch
Habitat and Ecosystem Services Division
NOAA Fisheries, Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930
Phone: 978-281-9131
Email: christopher.boelke@noaa.gov

New England Flow

Tom Christopher
New England FLOW
240 Fort Pond Road
Lancaster, MA 01523
Phone: 508-331-4889
Email: tom.christopher@comcast.net

The Nature Conservancy

Katie Kennedy
Applied River Scientist
North America Region
The Nature Conservancy
PO Box 32
Chesterfield, MA 01012
Phone: 413-588-1959
Email: kkennedy@tnc.org

United States Fish and Wildlife Service

Supervisor
New England Field Office
U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301-5087
Phone: 603-223-2541
Email: newengland@fws.gov

Zoar Outdoor

Janet Cowie
Zoar Outdoor
PO Box 245
Charlemont, MA 01339
Phone: 413-339-4010
Email: janet@zoaroutdoor.com

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Federal Energy Regulatory Commission in these proceedings.

Dated at Washington, DC this 31st day of March, 2023.

/s/ Mealear Tauch

Mealear Tauch

Van Ness Feldman, LLP

1050 Thomas Jefferson Street, NW

Seventh Floor

Washington, DC 20007-3877