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March 31, 2022

VIA Electronic Mail

Mark C. Draper,
Chair Board of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Re: **Notice of Appeal and Request for Public Hearing**: **Maine DEP Water Quality Certification, Hiram Hydroelectric Project # L-07780-33-L-N (FERC P-2530).**

Dear Chair Draper:

By this letter, the Sebago Chapter of Trout Unlimited (Sebago TU) hereby notices its appeal of the water quality certification ("WQC") issued by the Department of Environmental Protection ("DEP" or the "Department") on March 4, 2022 pursuant to Section 401 of the Clean Water Act regarding the Hiram Hydroelectric Project # L-07780-33-L-N (FERC Docket P-2530) located on the Saco River in the towns of Hiram, Baldwin, Denmark, and Brownfield Maine (the "Hiram Project"). The WQC was issued in response to an application filed on March 12, 2021 by Brookfield White Pine Hydro, LLC ("Brookfield" or "Applicant") and for the reasons stated below Sebago TU appeals to the Board of Environmental Protection ("BEP") to reverse the WQC appeal or in the alternative, remand the WQC to the Department with conditions consistent with the remedy requested below. The WQC is included in Attachment B as **Exhibit B-1**.

In the WQC, the Department concluded that "the continued operation" of the Hiram Project "will result in all waters affected by the project being suitable for all designated uses and meeting all other applicable water quality standards." Specifically, DEP found that the Applicant had provided sufficient evidence that:

1. "The Saco River in the Hiram Project impoundment and downstream of the Project dam meets *all* of the narrative classification standards for Class A waters and is determined to be of such quality that it is suitable for the designated uses of … recreation in and on the water; fishing; … and as habitat for fish and other aquatic life. 38 M.R.S. § 465(2)(A)."; and
2. The Dissolved Oxygen ("DO") concentrations "in the Saco River *meets applicable numeric Class A DO standards*." 38 M.R.S. § 465(2)(B)." and
3. "… the macroinvertebrate community downstream of the Project dam indicates some impact from "lake outlet effect." However, lake outlet effect is a common occurrence below natural lakes, and in the Department's professional judgment and experience, the impact measured below the Hiram dam is not significantly different than that observed

below natural lakes. The Department concludes, therefore, that *water discharged from the impoundment meets the classification standards for Class A waters and that aquatic habitat in the Saco River is characterized as natural*. 38 M.R.S. § 465(2)(A).”; and
4. “… that existing in-stream uses which have actually occurred on or after November 28, 1975 and the level of water quality necessary to protect those uses are maintained. The Department concludes that the Project *meets the state’s antidegradation policy*. 38 M.R.S. § 464(4)(F)(3).”[1]

Sebago TU appeals the WQC on the following grounds, namely that: the Department's determinations and conclusions that the Hiram Project waters, including those discharged downstream of the impoundment meet - (1) the narrative standards for Class A waters; (2) applicable numeric Class A DO standards; and (3) the classification standards for Class A waters and that applicable aquatic habitat criteria in the Saco River is characterized as “natural” and (4) that the Project does not violate the state’s Anti-degradation Policy – do not consider all information and data provided to the Department, and are therefore incorrect, and not supported by Maine law. The Department’s WQC approval, premised on the above determinations and conclusions, is therefore arbitrary and capricious. Sebago TU respectfully requests a public hearing on these issues and the remedy it requests.

I. Background

The Hiram Project is located on the Saco River in the towns of Hiram, Baldwin, Denmark, and Brownfield, Maine, and consists of the Hiram Dam (the physical structure that forms the Hiram Dam impoundment) and other related hydropower facilities (e.g., penstock, powerhouse) that comprise the entirety of the Hiram hydropower project. Initially constructed in 1917, the Hiram Dam was first licensed by the Federal Energy Regulatory Commission ("FERC") in 1970 with an effective date of 1955 and a termination date of September 31, 1993. Following that initial license, FERC subsequently issued a license to operate the Project on December 22, 1982 (for a term of 40 years) during which time (1984) the penstock/powerhouse diversion was constructed which allowed Brookfield to divert river flows to a downstream powerhouse during periods of low flow and continue generation instead of maintaining some minimum flow evenly over the dam. Brookfield filed a Final License Application (“FLA”) with the FERC for relicensing of the Hiram Project on November 20, 2020 (FERC Project No. P-2530). In connection with the present FERC re-licensing Brookfield’s application for Maine WQC pursuant to Section 401 of the Clean Water Act was submitted March 12, 2021. Following extensive public comment, the Department issued its WQC on March 4, 2022.

II. Aggrieved Party Status

An aggrieved person may appeal to the BEP for review of a licensing decision by the DEP Commissioner. See 06-096 CMR 2 § 24(B)(1). "Aggrieved person" means "any person whom the Board determines may suffer particularized injury as a result of a licensing or other decision." Id at § 1(B). Sebago TU meets this aggrieved meets this aggrieved party definition as follows:

[1] Exhibit B-1, WQC at 29-30 (emphasis supplied).

a. Standing as an aggrieved person:

i) Sebago TU is a "person" for the purposes of this appeal. It is a non-governmental organization (NGO) whose mission is: "*to bring together diverse interests to care for and recover rivers and streams so our children can experience the joys of wild and native trout and salmon.*" Sebago TU is the largest of Maine's six chapters with nearly 700 members. The Saco River flows through the middle of the Sebago TU membership area, is the largest watershed in that membership area, and the fourth largest in Maine.

ii) Members of Sebago TU use the Saco River for recreational and aesthetic pursuits. Its members fish, boat and otherwise enjoy the watershed. Further, Sebago TU members have broad and deep organizational interests in the Maine's statutory provisions that all hydroelectric projects support all uses designated by Maine statute.[2]

iii) Sebago TU has been heavily involved with efforts to restore stream connectivity within the Saco River Watershed since 2015, and was key to the towns of Brownfield and Porter obtaining authorizations to spend approximately $500K in grant money from sources including the National Fish and Wildlife Foundation, the Maine Transportation Bond, and Trout Unlimited Embrace-A-Stream Program. Additionally, Sebago contributed funding directly to the Town of Brownfield to complete a major culvert upgrade on Hampshire Road. These restoration efforts in the watershed continue. Sebago TU worked closely with the Town of Brownfield to obtain a $125,000 grant to replace a defective culvert installation on Phen Hill Road that was approved in March of 2022 while this appeal was being prepared.[3]

iv) One of the major factors affecting all of these grants was the number of river miles that these proposed fisheries restoration projects reconnected and it became painfully obvious that the most significant problem with river connectivity to fish and aquatic species habitat in the upper Saco Watershed was the physical barrier of the Hiram Dam and the operational practices which severely degraded a segment of the Class A downstream waters. Without some reasonable modification of the WQC, water quality will continue to fail to meet the requisite state standards and the upstream fisheries efforts will become ineffective and futile.

b. Particularized Injury:

i) Unless the Board grants the relief described below in Section 6, continuing and particularized injury will be suffered by indigenous and other aquatic species, our membership, and the local populace as a result of the WQC issued by the Department. These injuries specifically include:

(a) Efforts of Sebago Chapter to increase connectivity of the Saco River Watershed for the benefit of fishing, recreation, fish and other aquatic species habitat will be severely limited and minimized by the lack of water quality

[2] See 38 MRSA § 465 ¶4. The specific designated uses that are severely impacted are discussed in detail below and include impacts on fishing, recreation, and fish and aquatic habitat.

[3] Maine DEP letter dated March 7, 2022, "Notice of Conditional Contract Awards under RFA # 202106082, 2021 Stream Crossing Public Infrastructure Improvement Projects".

and safe, timely and effective fish passage at Hiram Dam degrading the ecology of the watershed. It makes little sense for the Department's Stream Crossing Infrastructure Improvements Program to be promoting fish passage on smaller waters while the Department stays bound to the status quo for the main stem waters impaired by large dams such as Hiram Dam. Without some reasonable modification of the WQC, water quality will continue to fail to meet the requisite state standards and the upstream fisheries efforts will become ineffective and futile.

(b) An approximately 500-foot section of the Hiram Falls will remain dewatered for over eight months out of the year degrading fish and aquatic habitat and depriving our members both of a traditionally popular regional fishing destination in that river section and the beauty of the sight and sound of flowing waters when in the project vicinity.

(c) Absent even downstream spillway passage, fish and other aquatic organisms traveling downstream will continue to be unnecessarily injured or killed by Hiram Project turbines particularly during low flow periods occurring during several months of the year, depriving our members of potential recreational fishing opportunities and decreasing the overall fecundity of the watershed.

(d) A stagnant pool below the dam will continue to exist whenever the dam falls are dewatered with the potential of stranding aquatic organisms including endangered Atlantic salmon that are acknowledged to be present in the section of river below Hiram Dam.[4]

(e) Additional dissolved oxygen from water going over the falls providing critical aeration for downstream reaches, particularly that certain stretch immediately below the dam, will not be made available for about eight months of the year.

(f) Water temperatures below the dam will continue to be higher than can be explained by impoundment effect adversely affecting indigenous species and to the benefit of introduced species.

(g) There will be no reasonably accessible vantage point from which to view the falls, an historic attraction of scenic significance.

(h) The degraded, unappealing appearance of the site will continue to encourage inappropriate use and vandalism of the downstream project area making the project even more unsuitable for recreational use.

(i) Water quality non-compliance will continue, particularly with narrative and numeric standards, and will continue to remain unaddressed due to omissions or delays caused by a collateral agreement – reached among a limited set of stakeholders and in some respects inconsistent with WQC law.

(j) Once in receipt of a WQC from the State, Brookfield will be in a position to obtain a new FERC license, effectively precluding further state water quality review of this project for the next 40 (forty) years and locking in the status quo both with respect to narrative as well as numerical standard attainment.

[4] Final License Application, Volume I, part 1, page E-4-42: *"Individual salmon may occur episodically in the vicinity of the Hiram Project because adults captured at the Skelton fish lift are transported by MDMR to favorable spawning habitat in the Ossipee River, which joins the mainstem approximately 3 river miles downstream of the Hiram Project."* (emphasis supplied).

III. Basis for Appeal.

a. The Department erred in concluding that the Hiram Project, located in a specially designated river segment, meets Maine water quality narrative standards as required by Maine law.

i) The Maine Legislature has explicitly spoken to the special status of the waters of the upper Saco River Watershed under the state water quality classification laws, the Natural Resources Protection Act and elsewhere which mandate that special consideration and protection be given to the Saco River and specifically non-hydropower uses.

In order to grant state water quality certification under Section 401 of the Clean Water Act, the Department must conclude that there is a reasonable assurance that the continued operation of a hydropower generating or storage project will not violate applicable state Water Quality Standards. These standards have been established in the State's Water Classification Program (Title 38 MRSA Sections 464-469). These standards specifically designate the uses and related characteristics of those uses for each class of water and establish water quality criteria *necessary to protect those uses and related characteristics.* Under Section 464, the Legislature declared "that it is the State's objective to restore and maintain the chemical, physical and biological integrity of the State's waters and to preserve certain pristine state waters."[5]

Evidence that the legislature intended to include this stretch of the Saco River under scrutiny for a WQC as a pristine water subject to special scrutiny is not only found in the state's water quality classification scheme[6] but noted in a parallel statutory scheme for water quality permitting under the Natural Resources Protection Act.[7] Although not an explicit water quality standard for the purposes of water quality certification, the special designation found under NRPA and elsewhere evidences a clear and consistent legislative intent and policy that water quality in this stretch of the Saco River is entitled to special consideration. This should, as a matter of law be considered as persuasive authority and not disregarded for the purposes of a WQC, particularly when narrative water quality standards are considered as part of the certification process such as the preservation of "*ecological, social, scenic or recreational importance*" of Class AA waters[8] and "*recreation, in and on the water*" for Class A waters.[9]

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[5] 38 MRSA § 464 (1).

[6] *See* 38 MRSA §467. Classification of major river basins**:** "All surface waters lying within the boundaries of the State that are in river basins having a drainage area greater than 100 square miles that are not classified as lakes or ponds are classified in this section….**12. Saco River Basin….** (3) From a point located 1,000 feet below the Swan's Falls Dam to its confluence with the impoundment of the Hiram Dam - Class AA. (4) From its confluence with the impoundment of the Hiram Dam to a point located 1,000 feet below the Hiram Dam - Class A. (5) From a point located 1,000 feet below the Hiram Dam to its confluence with the Little Ossipee River - Class AA ….) (bold text in original). The segment of the Saco River subject to this WQC is therefore classified as the highest and second highest classification waters can attain in the state.

[7] Natural Resources Protection Act 38 MRS § 480 et seq. ("NRPA").

[8] 38 MRSA § 465 2(A).

[9] 38 MRSA § 465 1(A).

The Saco River segment located in the Project area is designated by statute as a river segment entitled to *special protection*.[10] See Attachment A, **Exhibit A-1** that depicts the river segment and the Hiram dam's central location within that designated segment. Elsewhere the Maine Legislature has also singled out the Saco River Corridor:

> The Legislature finds that the Saco … [River is] largely unspoiled by intensive or poorly planned commercial, industrial or residential development; *that existing water quality on the inland portions of these rivers is extremely high*; that these rivers and their associated wetlands constitute an important present and future source of drinking water; *that they support large and diverse aquatic populations; and that they are heavily used for fishing, swimming, canoeing, camping and other forms of outdoor recreation.*
>
> …
>
> The Legislature finds that these rivers and their adjacent lands *possess outstanding scenic and aesthetic qualities and that certain areas along these rivers are of outstanding scenic, historic, archaeological, scientific and educational importance.*[11]

The same section of the Saco River is also singled out by the legislature as a river that: "*… because of their unparalleled natural and recreational values, provide irreplaceable social and economic benefits to the people in their existing state*" and is an "*outstanding and special stream segment meriting special protection*."[12] (emphasis supplied). The statute continues to state:

> Further, the Legislature finds that projects inconsistent with this policy on new dams and diversion projects, which constitute hydropower projects pursuant to Title 38, section 632, and redevelopment of existing dams will alter the physical and chemical characteristics and designated uses of the waters of these river and stream segments. It finds that these impacts are unacceptable and constitute violations of the State's water quality standards. The Legislature directs that *no project which fails to meet the requirements of this section may be certified under the United States Clean Water Act*, Section 401.[13] (emphasis supplied).

Thus, under multiple statutes, some directly referencing the WQC process, the Maine Legislature has clearly indicated its intent and policy regarding the Saco River and the Hiram Project located squarely within the specified segment of the river is entitled to special protection. It is clearly and plainly a Project that deserves special water quality scrutiny and consideration due to its location in waters recognized as being of outstanding importance. In short, the fisheries, habitat, recreational and scenic aspects of a WQC cannot be summarily dismissed,

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[10] Specifically, under NRPA, 38 MRSA §480-P, "*Special protection for outstanding river segments*" (italics supplied). Under paragraph 16 the protected segment is described as "The Saco River from the Little Ossipee River to the New Hampshire border."

[11] See Title 38 "Waters and Navigation" Chapter 6, "Saco River Corridor" 38 MRSA §951. See also NRPA 38 MRSA §480-A.

[12] See Title 12 "Conservation" Chapter 200, "Maine's Rivers" 12 MRSA § 403 and 12 MRSA § 403 ¶15.

[13] Ibid.

minimized, or diminished as they have in the WQC, particularly when the legislature has singled out this segment of the river explicitly and repeatedly.

ii) **The special, unique status of this river segment means a harder look is warranted to ensure compliance with Maine's water quality narrative standards by protecting all of the designated uses, and mitigating the obvious harms the Hiram Project continues to cause to those uses.**

The Hiram Project is also located in the middle of southwestern Maine's greatest concentration of waters where native, indigenous brook trout can be caught in brooks and streams, as listed by the Maine Department of Inland Fisheries and Wildlife (MDIFW).[14] Twelve waters are listed in the watershed. Of these, two are located immediately upstream - the Shepards River and Tenmile Brook; and two are located immediately downstream - Breakneck Brook and Pease Brook. Further downstream and before the next dam are Pigeon Brook and Quaker Brook with its tributary Heath Brook. The Hiram Dam's location interrupts the interconnection between these two vital fisheries.

Furthermore, it is well established that the Hiram Project is within the historic range of indigenous and federally endangered and threatened Atlantic salmon[15] and a known historic migration pathway to spawning habitat in the Saco River within the watershed as well as habitat for co-evolved indigenous species such as brook trout, alewives and eels. These are species that are vital to the state's commercial and recreational fisheries and as such should also warrant that special consideration be given not only to the fisheries impacts of the Project, but to the impacts a depleted fisheries ecosystem will have on scenic, aesthetic and recreational uses. Neither the WQC or the 2007 Settlement Agreement comprehensively address this impact and both are, for example, completely silent as to brook trout fishery restoration and passage in the Hiram project area.

The fisheries aspect is but one of the aspects that require a meticulous hard look that appears absent in the WQC. Other designated uses such as recreation, fish and aquatic habitat are explicit designated uses in the Hiram Project area. As discussed more fully below, these designated uses are also severely impacted by the Hiram Project and must also be thoroughly examined, such an analysis is not apparent from the WQC, or its summary conclusions and determinations.

iii) **The project does not meet the narrative standards for Class A waters with regard to designated uses including fishing and recreation or as habitat for fish and other aquatic life.**

[14] From https://www.maine.gov/ifw/fishing-boating/fishing/fishing-opportunities/maine-fishing-guide/sebago-lakes.html

[15] See e.g., Exhibit B-4, collectively the "2007 Settlement Agreement" as amended. While Sebago TU acknowledges that this agreement, which it is not a signatory to, establishes certain contractual obligations regarding Atlantic Salmon in the Saco River it does not form the basis for a WQC either in the context of fisheries restoration, narrative or numeric water quality standards.

(1) The Saco River's Class A waters and specific downstream boundary from the dam are described in plain and clear language.

As the Department noted in its Draft License Application Comments: "*Brookfield White Pine Hydro LLC must demonstrate compliance with all designated uses as well as all numeric and narrative criteria in order for the Department to issue a water quality certification for the Hiram Project*."[16] The narrative criteria for the Class A waters immediately below Hiram Dam are:

> A. Class A waters must be of such quality that they are suitable for *the designated uses of* drinking water after disinfection; *fishing*; agriculture; *recreation in and on the water*; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; *and as habitat for fish and other aquatic life. The habitat must be characterized as natural*.[17] (italic emphasis supplied).

At the outset it is critical that the location of the Saco River Class A waters in the Hiram Project are defined explicitly by the plain language of the statute. They exist "[f]rom its confluence with the impoundment of the Hiram Dam *to a point located 1,000 feet below the Hiram Dam*."[18] **Significantly, the Maine Legislature intended to designate the downstream Class A boundary as from the "dam" itself – not the entire hydropower project or any structure that happens to be connected to the dam.** This intent is clearly evident because under the statutory definitions in Maine Water Quality Classification laws a clear definitional distinction is drawn between a "hydropower project" and the facilities that comprise them such as "powerhouses" and "dams":

> §632….3. Hydropower project**.** "Hydropower project" means any development that utilizes the flow or other movement of water, including tidal or wave action, as a source of electrical or mechanical power or that regulates the flow of water for the purpose of generating electrical or mechanical power. *A hydropower project development includes all powerhouses, **dams**, water conduits, turbines or other in-stream power devices, generators, transmission lines, water impoundments, roads and other appurtenant works and structures that are part of the development.*[19] (emphasis supplied).

Thus, the plain language of the statute describing the Project Class A boundary is ***not*** 1000 feet from the "***powerhouses*** *… water conduits, turbines or other in-stream power devices …. and other appurtenant works and structures that are part of the development"* ***but from the "dam" itself. If the legislature had intended to extend this critical Class A classification boundary to any other Hiram Hydropower project structure, even remotely associated with the dam, it would have said so and it did not.***

[16] Maine DEP letter RE: FERC No. 2530, Hiram Hydroelectric Project Draft License Application Comments dated September 25, 2020.
[17] 38 MRSA §465 Standards for classification of fresh surface waters at ¶ 2.
[18] 38 MRSA §467 ¶ 12 A (4).
[19] 38 MRSA §632 ¶3 "Hydropower project."

As discussed below, due largely to the Applicant's sampling methodology and locations, this has critical significance, since as direct result of Applicant's sampling and selection of data, there is *absolutely no evidence* that the Project meets numerical standards for DO and macroinvertebrates in the designated Class A waters within this defined boundary and even in the Class AA waters further downstream of the dam (just downstream from the boundary). However, here there is ample legal authority for the Department to deny certification or impose WQC conditions based on violations of narrative standards alone.[20]

(2) The Applicant's dewatering of Class A waters immediately below Hiram Dam violates Maine water quality standards.

The Hiram Project violates Class A water quality narrative and numeric criteria in large part because for most of the year a section of Class A water immediately below the dam is nearly completely de-watered. Presently at Hiram Dam, the minimum flow of 300 cfs is operationally diverted by the Applicant not through or over the dam itself, but to and through a separate penstock extending downstream nearly 500 feet beyond the dam to a powerhouse so that the Applicant can utilize its full generation capacity during low flow periods. Under these conditions, for most of the year, bypass flows over the dam are reduced to a trickle estimated at two (2) cfs and about half of the area of designated Class A below Hiram Dam, *and within the statutorily defined Class A boundary*, is severely dewatered resulting in large areas of exposed rock and five small pools; four of the pools are connected to the trickle flow, one is not and is stagnant. This dewatered area remains classified as Class A despite the lack of water caused by Applicant's operational practices. The dewatered area is extensive - it is comparable in size to the amount of watered area in the area designated Class A. If it were a much smaller area, it might be overlooked, but it is so large that it is clearly visible from the ground and air and is so obvious it cannot be reasonably ignored. While this dewatering practice allows the applicant to continue to generate and sell electricity under low flow conditions, it is incompatible with other WQC designated uses and numeric and narrative water quality standards. This de-watered segment cannot, under any reasonable, professional or conscionable judgement be considered "natural"[21] or meeting Class A narrative standards, specifically:

a) Fishing: As the Applicant has reported, "The pools in the reach were relatively deep *and flows through and between the pools was provided by* ***leakage flows of approximately 2 cfs from gates at the dam***. *Temperature and dissolved oxygen levels in*

[20] *See S.D. Warren Company v. Board of Environmental Protection*, 2005 ME 27, 868 A.2d 210 (2005) ("S.D. Warren I"); *S.D. Warren Company v. Board of Environmental Protection*, 547 US 370 (2006) ("S.D. Warren II"). In S.D. Warren I at 442, the Court concluded that the narrative criteria at 38 M.R.S.A. § 465, which requires waters "of sufficient quality to support all indigenous fish species," was intended to be an integral part of the water quality standards for the BEP to consider. The Court also concluded, based upon the specificity of the designated uses at 38 M.R.S.A. § 465, that the Legislature's purpose for the language "suitable for the designated uses" was "that the designated uses actually be present." The court also stated that when those uses are not presently being achieved, the Legislature intended the quality of the water be enhanced so that the uses are achieved (internal citations omitted).

[21] Hiram Dam's dewatering of a Class A riverine segment is entirely due to man-made operational practices. There is nothing – *nothing* - "natural" about a constructed penstock to powerhouse physical flow diversion.

the pools were good. ***Limited fauna, including fish****, were observed, indicating that* ***the pools are infrequently used by aquatic organisms****. The overall height of the falls is reported as 55-feet. There is adequate connectivity between the pools that any fish dropping down during high flows would be able to pass out of the pools.*"[22] (bold supplied for emphasis). Reports from people who have fished these pools confirm that while smallmouth bass are occasionally present in the lowest pool, they do not contain fish in fishable abundance, and there is no reason for that to occur. The attractant flow would be to the much greater quantities of water issuing from the tailrace below the powerhouse, not to the nearly isolated and dewatered pools that occur between the dam and the powerhouse. Runs of water of 2 cfs might conceivably be fishable for small fish in headwaters where there is overhead cover. Here there is no overhead cover, and little cover of any sort but a nearly complete absence of water. The pools and the connecting 2 cfs flows are not under any reasonable definition a place to fish.

b) Recreation in and on the water: The dewatered falls also lack the scenic character of a waterfall, or indeed even that of most flowing water. The flowing waters are hidden within the nearly 500-foot penstock - what remains is a great amount of exposed rock. Enjoyment of the aesthetic qualities of a place is an essential part of its recreational use, and the current practice of dewatering the falls destroys this. The de-watered segment cannot be reasonably kayaked, canoed or traversed by boat. It is unsuitable for most watersports due to the large expanses of exposed rock.

c) Suitability for fish and aquatic species habitat: The minimum flow of 300 cfs is prescribed to reasonably maintain the form and function of a mainstem river downstream of the dam, throughout the designated Class A area. By definition this includes the area and river segment immediately below the dam. This cannot be accomplished by the 2 cfs trickle escaping through the gates on one side of the dewatered channel. A larger flow, spread over the full width of the dam, would attract fish and provide a much larger wetted area that would support flora such as Podostemum ceratophyllum that grows on hard bottoms in swiftly flowing rivers and streams. These "*plants grow fast and vigorously and provide habitat for many aquatic insects and their larvae, as well as Cnidaria, Turbellaria, Mollusca, Annelida, Hydrachnidia, Cladocera and Copepoda. Small fish feed on the invertebrates and freshwater snails graze on the foliage."*[23]

Thus, current project operations that dewater large areas downstream of the dam (1) minimize and eliminate the available habitat for fish, aquatic plants and other species, (2) severely hinders any recreational activity that could possibly occur in the dewatered segment; and (3) severely hinders the sustainability of upstream and downstream fisheries; all to the maximum extent because there is simply not enough water immediately below the dam for these uses.[24]

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[22] Updated Study Report, page 2-3, 2.2.6 Summary.

[23] Naturalist listing on Threadfoot accessed at https://www.inaturalist.org/taxa/167115-Podostemum-ceratophyllum.

[24] The designated uses of fishing, recreation, fish and aquatic habitat are substantially the same for Class B and Class C waters and therefore the Hiram Project fails to meet these classification standards as well. See 38 MRSA 465 §§3 A (Class B) and 4 A (Class C).

There has been little to no discussion or justification in the WQC for this obvious and extreme impact to fish and other aquatic species habitat. Discussions with past and current DEP staff indicate that *ledge type habitat of the type that constitutes the substrate for the dewatered section often has minimal value as habitat and thus, dewatering the reach is of no consequence*. That conclusion is not supported by observation or the data in the river segment immediately below Hiram Dam. This is known to be a false assertion because a simple comparison can be made both by observing the characteristics of the dewatered segment both with and without water flowing evenly over the dam (as there is no spillway).

For example, on June 8, 2021, Sebago TU Conservation Committee member Matt Streeter visited the Hiram Dam site in order to photograph conditions. Some of these photos have been attached, along with detailed descriptions, as Attachment A, **Exhibit A-2**. The photos clearly demonstrate the following:

- That the grade of this 500-foot section of river is moderate, walkable, fishable, and passable by most fish species.
- That the east side of the cascade, where high velocity flows from dam releases are concentrated, is scoured of all sediment and plant life, giving the impression that aquatic life is not sustainable.
- That by contrast, the west side of the cascade, spared the damage caused by focused dam releases, sustains basic aquatic plant and animal life and riparian vegetation, which could be a great deal more varied and abundant if minimum flows were directed over the full width of the dam, and high velocity flows from gate releases were kept to a minimum.
- That, combined with the testimonials of local residents (see Attachment A, **Exhibit A-3**), demonstrates that brook trout, among other species of fish, can and did inhabit the full length of the cascade up until around 2008 when the dam operator began the dewatering diversion.
- That returning a flow of 300 cfs, as was the operational practice prior to 2008, over the full width of the dam, and moderation of the most extreme flows during releases, could restore this 500-foot section of river to a productive, fishable section of river.

In sum, due to the way the dam is currently being operated and has been since 2008, this section of river does not provide aquatic life structure and function, does not provide scenic value, and does not provide the recreational values of fishing or other in-water recreation required by Class A or even a Class B or C classification. The Department failed to do any such meaningful analysis of this obvious and extreme environmental impact and narrative classification failure.

(2) Directing minimum flows over the dam's spillway would minimize and mitigate narrative and possibly numeric water quality violations.

It should also be noted that directing minimum flows over the dam spillway and not through a 500-foot sluiceway is generally the standard, not the exception to the rule. Nearby examples of projects that incorporate these features in southwestern Maine include the Worumbo Project and the Bonny Eagle Project which is the next dam downstream from Hiram Dam.

The immediate benefits of directing a minimum flow evenly over the dam include:

- The stagnant pool would be eliminated. The 2007 Settlement Agreement (discussed below) is designed to put Atlantic salmon into the Big Ossipee River and thus the pool below Hiram Dam. The stagnant pool currently represents a stranding hazard and potential illegal taking of an endangered species should an Atlantic salmon, that Brookfield acknowledges to be present,[25] become stranded there.
- Aquatic organisms would have a path downstream (over the dam) during the summer and other low-flow periods other than though a turbine.
- Aesthetic qualities of the site would be partly restored, especially during the summer when the site receives its greatest use.
- Improving the aesthetic qualities would increase public pride in the site and have the effect of lessening the inappropriate use of the Downstream Access Area.
- DO levels and the presence of macro-invertebrates in the reach would increase, increasing the suitability of the habitat for both indigenous brook trout and any Atlantic salmon parr in that pool and across the full width of the bypass section.
- The improved flow from 2 cfs to 300 cfs would provide a higher volume of oxygenated water for all aquatic plant and fish species in the Project area.

The current practice of diverting minimum flows down a penstock through the powerhouse does nothing to reduce the impact of the project and instead perpetuates its cumulative and continuing adverse environmental impacts.

(3) A Use Attainability Analysis is appropriate to determine whether extreme dewatering of the Class A segment will not continue to violate state water quality standards.

The burden is on DEP to show that that dewatering the reach does not violate Maine water quality standards by a Use Attainability Analysis ("UAA"), not on stakeholders to show that there is potential value to the dewatered habitat.[26] There has been no UAA performed here. Direction of minimum flows through the turbine was a point of controversy during the last license amendment of the Hiram Project license and was resolved by FERC in favor of the operator instead of state resource agencies and without critical environmental consideration, explanation or justification provided. See e.g., Attachment B, **Exhibit B-2**.[27] There is nothing in the record for this relicensing, and the state WQC, to justify this obvious disregard for Class A water quality which is in conflict with general DEP practice. The special state status of this river segment and demonstrable quality of the downstream reach that has water in it below the dam for fishing, recreation, fish and aquatic habitat in this case mandates that this project be treated as

[25] Final License Application, Volume I, part 1, page E-4-42: *"Individual salmon may occur episodically in the vicinity of the Hiram Project because adults captured at the Skelton fish lift are transported by MDMR to favorable spawning habitat in the Ossipee River, which joins the mainstem approximately three river miles downstream of the Hiram Project."*

[26] FERC Order Modifying and Approving Fish Passage Assessment Report and Recommendations for Fish Passage and Fisheries Management issued July 18, 2007.

[27] FERC Order Amending License, FERC No. 2530.issued July 12, 1999, page 4.

others have been - with minimum flows directed evenly over the dam and not diverted through the penstock and turbines leaving this as the only downstream path for aquatic organisms and other species for 8 1/2 months out of the year[28] and resulting in mortality as was documented with photographic evidence contained in **Exhibit A-4**.[29] This is not an occasional or even seasonal de-watering but occurs during the vast majority of the year. The management of the Class A river segment during low flows has a clear and severe impact on state water quality standards not being met by the Applicant and must not be allowed to continue under the WQC.

(4) The Applicant's dewatering and other operational practices severely degrade recreation and scenic attributes if the Hiram Project Area.

Hiram Falls was once a scenic tourist attraction as evidenced by the picture postcard provided as Attachment A, **Exhibit A-5.** Recreational use is a designated use, and the Applicant itself has amply shown that the area is too often not being used appropriately for recreation in virtually every FERC filing since the PAD. That vandalism is occurring was acknowledged by the Department in the WQC,[30] and is clear and undisputed evidence that the recreational and scenic features of the project are inadequate. This is shown with particularity in the photographs provided as Attachment A, **Exhibit A-6** and the statements provided as **Exhibit A-6 and Exhibit A-8.**

The project has also lost the following recreational features since the last license was issued. Attachment A, **Exhibit A-9** provides a map and photos for items (3) and (6) below:

(1) Nearby parking for the Fisherman's Trail (east bank) - fenced off ~2003
(2) Nearby parking for west bank view of Hiram Falls (when watered) - fenced off ~2014
(3) Access to west bank view of Hiram Falls (when watered) and informal picnic area - fenced off ~2014
(4) Nature Study Area - deteriorated to the point of being unusable, greatest deterioration since ~2014
(5) Scenic Overlook - no longer provides a view of the falls (when watered) or water since ~2015
(6) Portage Trail to terminus that is constantly watered - not included in Recreational Facilities Inventory provided 2019 in the initial Study Report. This was a recreational facility that had been in use for years.

[28] FERC Draft Environmental Assessment for Hydropower License Hiram Hydroelectric Project, P-2530-057, September 2021, page 95: "*The project is currently required to release a minimum flow of 300 cfs below the powerhouse from November 16 to September 30. To provide a flow of 300 cfs over the dam during this period would require White Pine Hydro to curtail or reduce generation for about 8.5 months of the year…"*
[29] Sebago TU filing dated December 18, 2019, Subject: Comments of Trout Unlimited, Sebago Chapter Regarding Observed Fish Kills Related to the Operation of the Hiram Hydroelectric Project (FERC Project 2530-054); source: Sebago TU Comments on Brookfield Response to Preliminary Terms and Conditions, April 23, 2021.
[30] Exhibit B-1, WQC, page 22: *"…evidence of unauthorized uses and damage."*

(7) A 500-foot section of high-quality fishing water, which was a popular regional fishing destination, was eliminated by dewatering ~2008.

All that the Applicant has offered to replace these losses is a picnic table, a port-a-potty (during the summer months) and a parking lot smaller than the one it fenced off that and placed in an inconvenient location.[31] Restoration of any or all of the removed project facilities noted above should be reconsidered in addition to restoring a view of the falls. Adequate parking must also be provided; overall, parking has been reduced to about one-third of its former levels. Trails should provide access to a vista of Hiram Falls, the canoe portage should extend to a terminus that is watered throughout the year. None of these conditions exist in the WQC.

If these issues are not address in the WQC a reduction of, not improved recreational use of, the Hiram Falls project area will occur. This is evidenced by comments received from state agencies. As MDIFW stated in its comments on the WQC Application (Attachment B, **Exhibit B-3**):

> … it *does not appear BWPH made a good faith effort to explore potential properties either within their holdings or private lands that could be purchased for site development.* It appears BWPH [Brookfield] only examined the single, private site mentioned in the ISR, and even then, it is unclear if they actually discussed any concerns, or options to lease or buy the site with the current landowner. The Licensee suggests an existing private, informal boat launch located approximately 3 miles upstream of the Hiram dam provides adequate public access. *MDIFW contends the site is not well known or advertised, and there is no guarantee that this private, informal site will remain available to the public in the near-term, let alone for the duration of the new license.* Additionally, the Licensee suggests they will work with MDIFW to evaluate the need for a new Hiram boat launch if the existing launch becomes unavailable. *This is unacceptable to MDIFW; the need is there, the existing access is unadvertised and is unknown by much of the public, and it is inadequate to address the anticipated long-term need over the term of the new license. We request that this be incorporated as a condition of the Water Quality Certification for this Project*.[32] (emphasis supplied).

Based on what has transpired with the relicensing project to date, there is little in the record to indicate that Brookfield will negotiate or make a good faith effort to improve project recreational facilities in the Recreational Facilities Plan or otherwise.

(5) The WQC does not address the fish and aquatic habitat narrative standard that is deficient or not present in the 2007 Settlement Agreement.

Beginning in 1991 with the Court's decision in Bangor-Hydro-Electric v. Board of Environmental Protection, and then culminating in the Maine Supreme Judicial Court's decision (upheld by the U.S. Supreme Court) upholding DEP's and BEP's 2003 requirement of phased

[31] Ibid.
[32] MDIFW Comments on the Water Quality Certification for the Hiram Hydroelectric Project (FERC No. 2530) dated May 11, 2021, page 3.

fishways in the Presumpscot River certification – a decision based on circumstances strikingly similar to those encountered today on the Saco River - any prior question of whether the designated uses and narrative criteria contained in 38 MRSA §465 ¶1 and 2 provide DEP with the authority to order the construction of fish passage as part of certification has been removed. Similarly, the water quality statutes are clear with respect to state WQC narrative standards. Here, however, upstream and downstream volitional fish passage is complicated by the existence of the 2007 Settlement Agreement, as amended (to which Sebago TU is not a signatory) which was originally intended to address the installation of fishways for Atlantic salmon. The 2007 Settlement Agreement was not entered into in connection with any WQC or pursuant to WQC criteria. Accordingly, its environmental and fisheries analysis differs significantly from the analysis that is required for indigenous species (which specifically include native brook trout) and habitat quality under Maine WQC criteria and case law.

The history of the 2007 Agreement and its amendments has been one of continuous schedule delay into the future. See Attachment B, **Exhibit B-4**. The original agreement that the 2007 Agreement replaced (included in B, Exhibit B-4) was the 1994 Saco River Fish Passage Agreement. As an example of how absurd the fish passage milestones have become over the course of these agreements, the 1994 Agreement states, concerning the next dam upstream of Hiram Dam:

> The current license exemption application for Swans Falls calls for upstream facilities to be completed no later than 2011. This schedule could be modified according to the terms and conditions in the Swans Falls' [sic] license exemption to require passage at Swans Falls sooner, or allow a delay if, among other things, passage facilities are not constructed at Hiram before 2011.[33]

Over 28 years later, the fishway date for Hiram Dam has been extended at Applicant's request to 2032 – 21 years beyond the date originally contemplated in the 1994 agreement. This extended timeframe continues to negatively impede and render ineffective fisheries restoration throughout the upper Saco watershed and particularly in and above the Hiram Project area where other fish and aquatic species require access to historic spawning and feeding grounds. Specifically, the latest amended version of the Agreement states:

> … that the licensee will provide a single permanent upstream anadromous fish passage facility at each of the projects, or an alternative method agreed upon and approved by the parties, at its cost and according to the following schedule:
>
> | PROJECT | REVISED OPERATIONAL DATE |
> |---|---|
> | Bar Mills | May 1, 2025 |
> | West Buxton | May 1, 2027 |
> | Bonny Eagle | May 1, 2029 |
> | Hiram | May 1, 2032[2] |
>
> [2] Depending on need for passage at that time as determined in consultation with

[33] 1994 Saco River Fish Passage Agreement, page 6. Included with **Exhibit B-4**.

the resource agencies.[34] (note 2 internal citation in original).

Given the documented lack of progress between the original agreement of 1994 and the 2007 Amendment, there is no rational way to describe this is timely and effective fish passage particularly when there are indigenous species observed in the Hiram Project Area. The 2007 Agreement, it also provides that:

> "The schedules set forth may be delayed following consultation and agreement with FWS, NMFS, and Maine DMR that eels are not yet sufficiently abundant to require passage or provide enough data to allow for a determination of the type or location of eel passage measures... The licensee will provide permanent eel passage measures at its projects according to the following schedule… Hiram upstream June 1, 2020 … downstream September 1, 2032."[35]

Sebago TU notes that *upstream fish passage for eels was not provided in 2020* although eels were shown to be present in significant numbers at Bonney Eagle, the next dam downstream and have also been observed in the Hiram Project area.[36] Sebago TU also notes that there is no equivalent fishway provision or analysis for indigenous and native brook trout, also observed and acknowledged to be in the Hiram Project area.

Instead, the language in both of the last two Saco River settlement documents ongoing delay, and appears to fail to meet its own timetables – based solely on the "abundance" of certain species. To be clear, unless there is a rational, fisheries-tethered basis for not installing safe, timely and effective passage, a hydropower owner must do so at its project *to allow access by an indigenous species to its spawning and rearing habitat to rebuild its remnant population once these species have access to the waters below the project*.[37] Otherwise, an application for certification of a project resting in Class A and AA waters fails to meet the designated uses and narrative criteria of 38 MRSA §465(4) and cannot be approved. In addition to clarifying that the law applies to *all* indigenous species, nowhere does this well settled law mention the

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[34] FERC Order Approving Revised Fish Passage Assessment and Fish Passage Installation Schedule issued July 17, 2019 for Project Nos. 2527-064, 2528-084, 2529-086, 2530-044, 2531-058, and 2194-032, page 2.

[35] FERC Order Modifying and Approving Fish Passage Assessment Report and Recommendations for Fish Passage and Fisheries Management issued July 18, 2007 for Project Nos. 2527-064, 2528-084, 2529-086, 2530-044, 2531-058, and 2194-032, page 6.

[36] 2018 Upstream Eel Passage Monitoring Hiram Hydroelectric Project FERC NO. 2530, September 2018.

[37] *S.D. Warren Company v. Board of Environmental Protection*, 2005 ME 27, 868 A.2d 210 (2005) ("S.D. Warren I"); *S.D. Warren Company v. Board of Environmental Protection*, 547 US 370 (2006) ("S.D. Warren II"). In S.D. Warren I at 442, the Court concluded that the narrative criteria at 38 M.R.S.A. § 465, which requires waters "of sufficient quality to support all indigenous fish species," was intended to be an integral part of the water quality standards for the BEP to consider. The Court also concluded, based upon the specificity of the designated uses at 38 M.R.S.A. § 465, that the Legislature's purpose for the language "suitable for the designated uses" was "that the designated uses actually be present." The court also stated that when those uses are not presently being achieved, the Legislature intended the quality of the water be enhanced so that the uses are achieved. (internal citations omitted).

"abundance" of one indigenous species as opposed to another as criteria to delay fishway installation or otherwise excuse designated uses not being achieved.

There is no indication that the 2007 Settlement Agreement will not continue to indefinitely postpone needed, safe, timely and effective fishway prescriptions intended primarily for Atlantic salmon. There is no Department analysis in the WQC to even suggest that such a delay in fish passage is tethered to a rational fisheries basis for *all* indigenous species, particularly when they are acknowledged to be in the project area. Certain species, such as native indigenous brook trout are wholly omitted from the 2007 Agreement and therefore without *any* justification for not installing even rudimentary passage. This is contrary to well established Maine law, and likely due to the simple fact that the agreement is not a WQC and does not appear to be written under WQC narrative criteria requirements, which among other things requires a fish tethered basis to delay passage for all indigenous species present.

(6) The 2007 Agreement does not absolve the Department from the responsibility to enforce 401 WQC requirements.

The 2007 Settlement Agreement was never a document constructed or apparently intended to be consistent with Maine WQC water quality and fisheries law requiring safe, timely and effective fishways when indigenous species are present. The current cycle of endless delay seems predicated on the slow recovery of Atlantic salmon (and to some degree eels) in the watershed, despite their increasing presence and evidence of other co-evolved indigenous species. Similarly, the 2007 Agreement cannot form the basis or rationale for the Department to ignore provisions of Maine environmental law regarding designated uses (such as fishing and fish habitat) or the special status granted to the watershed. If the 2007 Agreement were functioning as intended, this would be a moot point and no action by the Department would be required. However, given the ample evidence that the 2007 Agreement is not providing "timely and effective fish passage" for native brook trout, Atlantic salmon and American eels all of which have been shown to be present, the Department cannot issue a WQC without including measures to provide reasonable, timely provisions *or at the very least put a stop to these endless and unjustified delays.* The over-reliance on agreements such as this by both state and federal agencies over the years has resulted in the fact that 50 years after the passage of the Clean Water Act, with Maine's water quality now markedly improved, indigenous species remain reduced to remnant populations occupying only a fraction of their historic range and unable to reach improved spawning and feeding habitat. As seen in the fisheries recovery following the removal of the Edwards Dam and others, the success or failure of fisheries restoration is often directly attributable to the delay in or refusal to install the installation of fishways by dam owners. This is true not only for the Saco, but for Maine's three largest watersheds: the Penobscot, the Kennebec and the Androscoggin.

DEP has the authority to address safe, timely and effective fish passage as part of its water quality certification process and has the opportunity to address some of the gaps and shortcomings that have become evident in the implementation and amendment of the 2007 Settlement Agreement. A critical and important first step is to improve the fish and aquatic species habitat directly below the dam. For timely fish passage to ever be provided at the Hiram Project, it is clear that a hard stop date of 2032 for fish passage to accommodate all indigenous

fish species currently impacted must be established. Fishways for indigenous, native brook trout must be considered and implemented immediately as there is known precedent[38] for even rudimentary fish ladders to be installed to accommodate internal and non-spawning movement of indigenous fish in the watershed. In the absence of these measures that are well within the Department's regulatory authority, fish and aquatic habitat will continue to be degraded and volitional fish passage will remain a distant unattainable goal, subject to indefinite extensions or in the case of certain indigenous species, not provided for at all. This is not in accordance with Maine water quality laws and cannot, under any reasonable judgmental standard, be considered acceptable from a water quality or fisheries perspective.

In sum, a generalized, watershed agreement among a limited set of stakeholders is not a proxy for enforcing legal requirements existing under well settled Maine law regarding water quality and fisheries in connection with a site specific WQC. The approach Sebago TU sets forth in its remedy is consistent with the terms of the present 2007 Settlement agreement and honors WQC law and regulation that has been in place for decades.

b. the Department's erred in its determination, that the Hiram Project meets Class A numeric water quality criteria as required by Maine law.

i) The project has not been demonstrated to meet DEP macro invertebrate standards in either the Class A waters below the powerhouse or the Class AA waters immediately downstream below.

(1) The Applicant's sampling locations are in the downstream Class AA waters and not in the Class A waters below the Hiram Dam

In addition to DO and E. Coli, data on macro-invertebrate communities is an important study requirement for any of Maine's numeric water quality classifications. Remarkably, ***there has been no data submitted by the applicant for any of the Class A area whatsoever on benthic macroinvertebrate sampling*.** Rock baskets were not deployed to the pools in the dewatered reach or in any of the Class A waters immediately below the dam. For the macroinvertebrate sampling locations Applicant chose it stated: "*The deep, sandy tailwater pool was not a suitable sampling environment for invertebrates in a river. As such, the sampling station was placed about* ***975 feet downstream of the powerhouse*** *in riverine habitat.*"[39]

Setting aside the questionable statement regarding the suitability of a "*deep, sandy tailwater pool*" (which Sebago TU believes is without merit), as a sampling environment, the water quality criteria and designated uses applicable to the downstream waters of Hiram Dam are determined by how and *where* these waters are classified. The waters above and below Hiram Dam are classified, as noted above are Class A waters are explicitly defined by statute:

[38] See fishways installed for Chain of Ponds Dam, northwest of Eustis, Maine (for brook trout); and North Twin Dam west of Millinocket, Maine (for landlocked salmon). Both fishways were constructed to accommodate riverine movement of resident indigenous fish species.

[39] FLA, Exhibit E, page E-4-33.

(4) From its confluence with the impoundment of the Hiram *Dam* to a point located 1,000 feet below the Hiram *Dam* - Class A.
(5) From a point located 1,000 feet below the Hiram *Dam* to its confluence with the Little Ossipee River - Class AA.[40]

The plain statutory demarcation is *not* from the Hiram "powerhouse" or any other part of the Hiram hydropower project but from the dam itself. Here, 1000 feet below the base of Hiram dam - the Class A area - extends only to a point about 500 feet below the powerhouse. Thus, **975 feet downstream of the powerhouse is well beyond the Class A area and in the downstream Class AA waters**.

It is unclear whether the Applicant chose this sampling location to sample to get a more favorable result or at best, mismeasured or simply misinterpreted the plain language of the statute. **In any event they were placed in the wrong location.** For example, we have provided **Exhibit A-10** which is to scale and illustrates the demarcation of Class A and AA waters relative to the Hiram dam and the Hiram powerhouse. Applicant's sampling location is clearly in downstream Class AA waters. DEP's acceptance of these sampling sites embeds a critical flaw in the WQC.

(2) The Applicant's sampling and methodology are not in accordance with the Department's own protocols.

The Department has established protocols for macro-invertebrate sampling[41] and are included in **Exhibit B-5**. In its Foreword, the DEP protocol document states: "The Department has collected a large, standardized database consisting of benthic macroinvertebrate samples from above and below all significant licensed discharges in the State, from areas impacted by non-point sources, as well as from relatively unperturbed areas. These sampling locations were chosen to represent the range of water quality conditions in the State."[42] Apparently, although extensive, the sampling locations were not all inclusive and did not include the critical segment below the Hiram dam. Further, none of the described sampling devices seem reasonably applicable to the Hiram Project: Rock-filled wire baskets are for "*wadeable* [sic] *rivers*" and *rock-filled mesh bags* for "*small flowing streams*"[43] and the Saco, Maine's fourth largest river, is clearly neither; boats were used for the earlier fish assemblage study[44] for a good reason. In any event, sampling cones could, however, have been deployed into the deeper water in the Class A area. It is doubtful that effective sampling could be done in the dewatered segment, unless there was sufficient water flowing over the dam.

[40] 38 MRSA §467 ¶¶ 12 A (4) and (5).
[41] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, DEP LW0387-C2014, Revised April, 2014.
[42] Id. page iv.
[43] Id. page 2.
[44] Hiram Hydroelectric Project (FERC No. 2530-054) – Updated Study Report dated February 11, 2020, page 2-2.

(3) The Applicant's sampling and methodology were not in an appropriate stream flow regime or stream location to determine Class A compliance immediately downstream and throughout the downstream Class A segment.

Under the statutory definition of what constitutes the Class A segment, site sampling must still be conducted in both the by-pass reaches (the dewatered channel) and in the tail race area below the powerhouse to demonstrate compliance. Due to the absence of any adequate water flow to sample in the dewatered segment below the dam, this limits sampling locations to the tailrace and plunge pool located below the powerhouse per **Exhibit A-11.**[45] Water with similar characteristics to waters in the defined Class A area should have been the basis for evaluation, yet instead of sampling in the plunge pool, the data submitted was in waters on a point of land below it with different characteristics on a much narrower run of water.

DEP protocols state that sampler placement is to: **"*Avoid bank effects: samplers should be located in the middle 50% of the bank to bank width, or in an area with a flow regiment typical of the overall character of the stream segment.*"**[46] (Emphasis supplied). **Exhibit A-11** also shows that the sampler was placed near the bank, clearly subject to bank effects. Applicant's field data sheet submitted for the macro-invertebrate study[47] provided as **Exhibit A-12** also shows the following Lat-Long Coordinates: 43° 39'52.49"N, 70° 36'03.27"W. This locates the samplers below the West Buxton Dam. While this makes exact location of the sampler impossible to determine, the **Exhibit A-13** photograph[48] confirms that the sampling sonde was next to the west bank, not in either of the characteristic flows of the Class A area.

Applicant also notes that: *"*Rooted aquatic grasses were present at the sample site and the substrates were covered with filamentous algae*."*[49] This indicates that the sample site, located outside the Class A waters, was not only dissimilar from the Class A waters of primary interest but from the river section as a whole. The sampling site was located on an inside bend where currents are slower than the currents are for example, in the plunge pool. Speaking with a local resident, the far bank from where the mesh bag samplers were deployed is deeper, as is normally the case with outside bends as currents are stronger there. The water on that bank should bear a greater resemblance to the Class A waters below the powerhouse. It was also reported that most of that section of the river does not support the algal growth described in verbiage and shown by photographs in Initial Study Report produced by Brookfield as part of the FERC process. **While such algal growth is often present on the edges of streams, it is more consistent with slack water areas the protocol cautions to avoid.**[50] It does not normally appear in the deeper waters with more current that detaches filamentous algae. Current is also diminished at this location as some water passes through the back channel to the west to rejoin the flow below the sampling site. In sum, Applicant's sampling and methodology are not indicative of Class A waters here.

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[45] Final License Application, Exhibit E, Page E-4-28, Figure 4-3. 2018 Water Quality Study Sample Sites, November 2020.
[46] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 5.
[47] ISR, Table 2.1-4, page 2-17.
[48] Id., Photo 2.1-2, page 2-10.
[49] Initial Study Report, February 2019, page 2-16.
[50] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 5. *"c) Avoid slackwater areas and eddies immediately upstream or downstream of large rocks and debris"*

(4) The Applicant's data show the downstream Class AA segment fails to meet Class AA standards and instead meets Class B standards.

Even given the variation from the sampling criteria used in selecting sampler type and placement, the results obtained by the Applicant only support Class B standards.[51] Given the sampler placement shown by **Exhibit 11 and Exhibit 13** *what the Applicant accomplished was not to demonstrate that the Class A water met Class A standards but that the Class AA waters immediately below only met Class B standards. The data only supported a 4% probability of Class A or Class AA.*"[52] The data collected does not support that the Benthic community attains either Class A and AA standards. **This is clearly a violation of water quality numeric standards and protocols and a direct result of Applicant's dewatering practices and sampling location and methodology errors.**

Sebago TU raised this issue in its prior filings on the Hiram Water Quality Certification.[53] The Department chose not to direct the Applicant to redo the macro-invertebrate study when there was still time to do so before license expiration. Compounding its inaction, DEP ignored these obvious discrepancies in its WQC. While acknowledging certain discretionary latitude enjoyed by DEP, *discretion does not extend to allowing an applicant to submit study data that has been collected in direct conflict with established DEP protocols*. The protocols should have been more strictly applied, especially given the special status afforded this river segment described above. The Department's finding in the Draft WQC that the existing Project flow regime maintains and supports habitat for aquatic species in the Saco River downstream of the Project dam is not supported, in the downstream Class A segment (either in the dewatered segment or in the plunge pool) or the Class AA segment further downstream.

ii) The project has not been demonstrated to meet DEP numeric criteria for Dissolved Oxygen ("DO") in either the Class A waters or the Class AA waters immediately downstream.

The DO and Benthic Macro-invertebrate studies were both incorrectly located in areas that are atypical of the Class A waters below the dam below the dam and the powerhouse tailrace. There is therefore a complete absence of applicable DO and Benthic Macro-invertebrate studies in the entire Class A section of the project. Accordingly, there is no rational basis for the Department to conclude that the Class A area either meets of fails to meet numeric classification for these waters. The Department does not address these critical flaws in its WQC and the Department's finding in the WQC that the existing Project flow regime maintains and supports habitat for aquatic species in the Saco River downstream of the Project dam is not supported by applicable DO data. The WQC does indicate this requirement may be monitored at some future

[51] Id., Table 2.1-14, page 2-41. *"Probability of Class B 96%."*
[52] Ibid.
[53] Sebago TU letter dated May 12, 2021, RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530); Sebago TU letter dated June 21, 2021. RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530).

time,[54] but there is no indication that it has been met at present and that is a requirement under Maine law. The Department had time to, and should have, required Applicant to meet this requirement after Sebago TU alerted it to this deficiency in earlier filings.[55] It is significant that the proposed future monitoring will occur "*in the tailrace*" as should have been done during the study phase of relicensing and prior to the WQC being issued.

iii) The DO study conducted in the by-pass reach was critically flawed.

DEP protocols further state with respect to sampling for a Temperature and Dissolved Oxygen Study: *"*Sampling should also occur in any bypassed segment of the river created by the project."[56] Thus, **data from the by-pass at Hiram that is generally dewatered is not optional but required by the protocol**. This is especially important for the Hiram Project because the dewatered area above the powerhouse is roughly equal in size to the area below the powerhouse and both constitute the Class A project water plainly defined by the statute.

DO levels are reported in Initial Study Report.[57] did not meet DO levels on at least five occasions. The FLA notes this is because of "*impoundment effect*."[58] **Exhibit A-14**[59] shows water temperatures taken at different locations in the impoundment, the by-pass and the tailwater. Please note that while it is difficult to see from the graph, the temperatures in Pool 3 vary to a much greater degree than temperatures from the other locations. This is not due to impoundment effect but to the effects of dewatering - so much bare, heat retaining rock interacting with a trickle of water and heating it. If this were not the case, Pool 1, the upper pool, would show the greatest variations. It is impossible from Applicant's graph to determine if rises in tailwater temperatures correlate with impoundment temperatures since these data either are not graphed or are obscured.

To assess DO compliance, Applicant deployed five sondes in five pools in the dewatered segment depicted in **Exhibit A-15**[60] Data was only reported from two, and neither was located in the stagnant pool (Pool #5). **The fact that less than half of the sensors were functional during the course of the study and none of them were located in the area of greatest concern is another critical flaw.** The study should have been repeated and sensors monitored more closely

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[54] Draft WQC (L-007780-33-L-N DRAFT), page 7: *"…BWPH proposes to develop and implement a plan to monitor dissolved oxygen downstream of the Project dam in Hiram Falls and below the Project tailrace to reaffirm that applicable Class A water quality standards are met."*

[55] Sebago TU letter dated May 12, 2021, RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530); Sebago TU letter dated June 21, 2021. RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530).

[56] DEP Sampling Protocol for Hydropower Studies, Rivers and Streams, Temperature and Dissolved Oxygen Study, Sampling Stations, December 2017

[57] ISR, Attachment E, Figures 2.1-6 and 2.1-7, page 2-30.

[58] FLA, Exhibit E, Page E-4-33.

[59] Id., Exhibit E, Page E-4-37 Figure 4-7.

[60] Id., Exhibit E, Figure 4-6.

and replaced if non-functional, an issue raised during the WQC process.[61] DEP chose not to direct the Applicant to redo the dewatered reach DO study, or any of the DO sampling when there was still time to do so before license expiration. Conclusions regarding whether DO numeric criteria are met in the dewatered segment, in what are defined Class A waters, are therefore without basis.

Sebago TU includes as supplemental evidence the affidavit of former MDEP official Mark Whiting, Ph. D. is included as **Exhibit 16** detailing his opinions on the validity of the studies that MDEP accepted as a basis for issuing a Water Quality Certification.

c. The Department erred in concluding that the river segment immediately below the Hiram Dam does not violate Maine's anti-degradation statute – the Class A section below the dam cannot possibly, under any reasonable definition, be characterized as "natural".

As discussed above, there is absolutely no data, study or reasonable basis that supports the DEP's conclusion that water discharged from the impoundment meets the classification standards for Class A waters. **Equally flawed is the Department's determination that the aquatic habitat in the Saco River can be characterized as natural.** It is inconceivable that the dewatered segment immediately below the Hiram dam can be characterized as "natural" simply because it is the result of man-made operational practices imposed by the Applicant so that it can generate more electricity revenue for its hydropower project. There is nothing "natural" about a man-made diversion (penstock to powerhouse) that deprives a Class A section of river the very water that makes it a Class A river and reduces a significant amount of Class A river channel to bare rock. This is patently absurd and defies any reasonable judgement, professional or otherwise.

The Department's conclusion that the Project meets the state anti-degradation statute is also without merit. Specifically, the Department has determined "that existing in-stream uses which have actually occurred on or after November 28, 1975 and the level of water quality necessary to protect those uses are maintained." This cannot possibly be a true statement since a significant portion of the Class A riverine segment immediately below the dam has been severely dewatered beginning on or about 2008. As a result, Sebago TU submits that when flows over the dam were severely reduced in 2008, dewatering a significant portion of the Class A waters, a continuing violation of Maine's antidegradation policy[62] occurred and continues to occur. With a modest modification to the flow regime, this violation can and should be remedied.

IV. Existing Record/Supplemental Evidence.

A list of the exhibits to this Appeal is provided in Attachment A. Attachment A exhibits largely consist of materials included in correspondence with the Department, materials in the

[61] Sebago TU letter dated May 12, 2021, RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530); Sebago TU letter dated June 21, 2021. RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530).

[62] 38 MRSA §464 ¶ 4(F).

FERC docket and other publicly available information and other exhibits. Basic reference documents such as the Water Quality Certification and other agency documents are designated with a "B" prefix for convenient reference. The source of each exhibit listed in the attachments will be provided along with the page number (displayed pdf page number) where the exhibit occurs. Although referenced and quoted in prior filing as part of the FERC process, a few documents were not provided in full, and these are identified as supplemental where applicable.

As of this writing, Sebago TU has not been able to determine whether certain documents listed in Attachment A (Sebago TU's Draft WQC Comments and Comments of local residents…) have been added to the record after the WQC was issued and may therefore constitute supplemental evidence. These comments and photographic evidence were submitted on March 3, 2022 the day before DEP issued its WQC 8 (eight) days in advance of the one year, March 12, 2022 WQC deadline.

Thus, it has not been possible for Sebago TU to determine the full scope of the administrative record that the Department relied upon in making its WQC determination or the extent to which DEP reviewed or relied upon much of the information contained in the FERC docket related to the relicensing of the Project. Therefore, as a precaution, Sebago TU, is requesting that all documents designated and listed in Attachment A be considered, if applicable, supplemental evidence, as well as incorporating by reference as supplemental evidence the entirety of the documents that are present in the FERC docket.

To the extent the documents in designated in Attachments A constitute supplemental evidence, such supplemental evidence meets the criteria of Chapter 2 of the Department's Rules concerning administrative matters, including appeals of Commissioner License Decisions, 06-096 CMR Section 24(D), in that these records are relevant and material. Pursuant to Section 24(d)(2)(a), the person seeking to supplement the Department's administrative record must have shown due diligence in bringing the evidence to the attention of the Department at the earliest possible time and Sebago TU has done so.

Many, if not all of the documents referenced in this Appeal were available to the Department as part of the FERC relicensing process in addition to the WQC application process. Because the WQC was issued on March 4, 2022, the submittal of any documents referenced in this Appeal that are not in the existing administrative record should be considered timely, as it would be unreasonable for Sebago TU to have identified and submitted those documents in less than 30 days, especially given that DEP issued its WQC several days before the one year review deadline rendering at best unclear what records constituted the entirety of the Department's files on, or the administrative record for, this matter.

V. Evidence to be Presented.

Sebago TU anticipates presenting evidence on the narrative standard classification of the Hiram Project including the project's suitability suitable for the designated uses of recreation in and on the water; fishing; and as habitat for fish and other aquatic life above and below project as well as in the direct vicinity of the project's physical facilities. Sebago TU also anticipates presenting evidence on Class A DO standards and technical information regarding studies

conducted for assessment of the DO and macroinvertebrate communities downstream of the Hiram Dam.

The evidence will be in the form of documents in the record and supplemental evidence presented (including the exhibits referenced herein), and may include testimony of subject matter experts (such as Mark Whiting discussed in section IV B. iii) above) and witnesses relative to the issues identified above, demonstrative exhibits based upon information in the record or supplemental evidence, and other information relevant to the issues presented.

VI. Remedy.

For the reasons articulated above, Sebago TU requests that the Board:

> A. Accept jurisdiction over this appeal and hold a public hearing on the issues raised in the appeal.
>
> B. Reverse the WQC approval and issue a WQC finding that the Hiram Project (1) the Hiram Project does not meet the applicable narrative standards suitable for the designated uses of recreation in and on the water; fishing; … and as habitat for fish and other aquatic life; (2) does not meet the applicable DO water quality standards for Class A waters immediately downstream of the Hiram Dam or elsewhere in the applicable project area (3) does not meet applicable aquatic life and habitat criteria immediately downstream of the dam; (4) the segment immediately downstream of the Hiram Dam cannot be characterized as natural; and (5) the WQC as proposed violates the state's anti-degradation statute and policy.

Specifically, Sebago TU requests:

a) Direct the Applicant to resubmit information and study data and for the Department to reevaluate this data in accordance with established MDEP protocols to ensure that it meets numeric and narrative standards.
b) Direct MDEP to include the following as terms and conditions if and when the narrative and quantitative water standards are met, in any subsequent WQC issued:

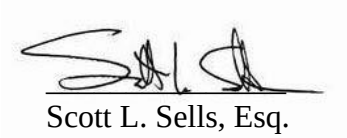
    i) That the 300 cfs be directed evenly over the dam and not through the penstock and turbines or through the low gates during low flow regimes sufficient to enable fishing, recreational and scenic uses of the Hiram Project Area.
    ii) That fish and aquatic species habitat downstream in the Class A waters be sufficiently watered and made suitable and consistent with the anticipated 2007 Settlement Agreement fishway prescriptions and fish and aquatic species habitat for Class A waters through the Class A riverine segment designated by the legislature.
    iii) Consistent with the current terms of the present amended 2007 Settlement Agreement, have the Department establish a hard stop date for safe, timely and effective, upstream and downstream volitional fish passage fish passage at Hiram Dam in 2032 without preconditions.
    iv) Have the Department require immediate, safe, timely and effective fish passage for indigenous brook trout at Hiram Dam and determine and address other fisheries

omissions in the 2007 Agreement in a WQC context, consistent with Maine WQC law and policy.

v) That the Applicant be required to provide a reasonable vantage point for the falls to be viewed as well as other recreational features and facilities including suitable and clean observation areas, parking, permanent arrangements for a boat launch in the impoundment.

Sebago TU looks forward to pursuing this appeal procedurally and administratively on the merits. However, in the event the Department seeks to pursue an alternative dispute resolution approach pursuant to the Chapter 2 rules to resolve the issues raised in this appeal, Sebago TU would consider entering into such a process. Sebago TU reserves all rights available to it under state and federal law, including any claims Sebago TU may have before FERC with respect to the WQC approval.

Please feel free to contact me should you have any questions. Respectfully submitted this 31st day of March, 2022.



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DISTRIBUTION

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MDIFW - Jim Pellerin, John Perry
Brookfield – Luke Anderson
WQC intervenor service list
Filed to FERC Docket P-2530

ATTACHMENT A - Index of Sebago TU Exhibits (attached).

A-1 Map of Specially Designated Saco River Segment; source: Sebago TU Comments on Brookfield WQC Application, May 12, 2021; (Attachment A page 1).

A-2 Photos from June 8, 2021 survey by Matt Streeter; source: Sebago Comments on Draft WQC, March 3, 2022; (*unclear if supplemental evidence)*; (Attachment A page 2).

A-3 Comments of local residents regarding historical presence of brook trout and other fish in the dewatered section of the river; source: Sebago Comments on Draft WQC, March 3, 2022; (*unclear if supplemental evidence)*; (Attachment A page 8).

A-4 Sebago TU filing dated December 18, 2019, Subject: Comments of Trout Unlimited, Sebago Chapter Regarding Observed Fish Kills Related to the Operation of the Hiram Hydroelectric Project (FERC Project 2530-054); source: Sebago TU Comments on Brookfield Response to Preliminary Terms and Conditions, April 23, 2021; (Attachment A page 9).

A-5 Postcard Showing Hiram Falls dated 1928; source: Sebago TU Motion to Intervene, March 1, 2021; (Attachment A page 21).

A-6 Photos from project area; source: Sebago TU Motion to Intervene, March 1, 2021; (Attachment A page 22).

A-7 eComment of Mike Herman; source: Posted to MDEP FTP Site June 14, 2021; (Attachment A page 26 of this document).

A-8 eComment of Patricia Barber; source: Posted to MDEP FTP Site June 14, 2021; (Attachment A page 27)

A-9 Map and photos of west bank of project area; source: Sebago TU Motion to Intervene, March 1, 2021; (Attachment A page 28).

A-10 Map of area below Hiram Dam showing the location of Class A and Class AA waters; source: Sebago TU Comments on Brookfield WQC Application, May 12, 2021; (Attachment A page 37).

A-11 2018 Water Quality Study Sample Sites; source: Hiram Project Final License Application; (Attachment A page 38).

A-12 Habitat Measurements in the Tailwater Section Downstream of Hiram Dam for Aquatic Macroinvertebrate Sampling; source: Sebago TU Follow on Comments on Preliminary Terms and Conditions, June 21, 2021; (Attachment A page 39).

A-13 Photo showing location of data sonde downstream of Hiram Project; source: Sebago TU Comments on Brookfield WQC Application, May 12, 2021; (Attachment A page 40).

A-14 Water Temperature from the Hiram Impoundment and Tailwater and the Hiram Falls Reach; source: Sebago TU Follow on Comments on Preliminary Terms and Conditions, June 21, 2021; (Attachment A page 41).

A-15 Dewatered Falls Pools and sonde placement; source: Sebago TU Motion to Intervene, March 1, 2021; (Attachment A page 42).

A-16 Affidavit of Mark Whiting (*supplemental*); (Attachment page 43).

ATTACHMENT B - Index of Reference Exhibits

B-1 Maine Water Quality Program Clean Water Act Water Quality Certification to the Hiram Hydroelectric Project #L007780-33-L-N ("Project") issued March 4, 2022 and FERC order issuing License; (Attachment B, page 50)

B-2 FERC Orders Amending License, FERC No. 2530 issued July 12, 1999 (*supplemental evidence*); (Attachment B, page 97)

B-3 MDIFW Comments on the Water Quality Certification for the Hiram Hydroelectric Project (FERC No. 2530) dated May 11, 2021; source: MDEP FTP Site; (Attachment B, page 111).

B-4 Saco River Fish Passage Settlements (*supplemental evidence*); (Attachment B, page 115).

B-5 Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, DEP LW0387-C2014. Revised April, 2014; source: MDEP website; (*supplemental evidence*); (Attachment B, page 178).

Attachment A

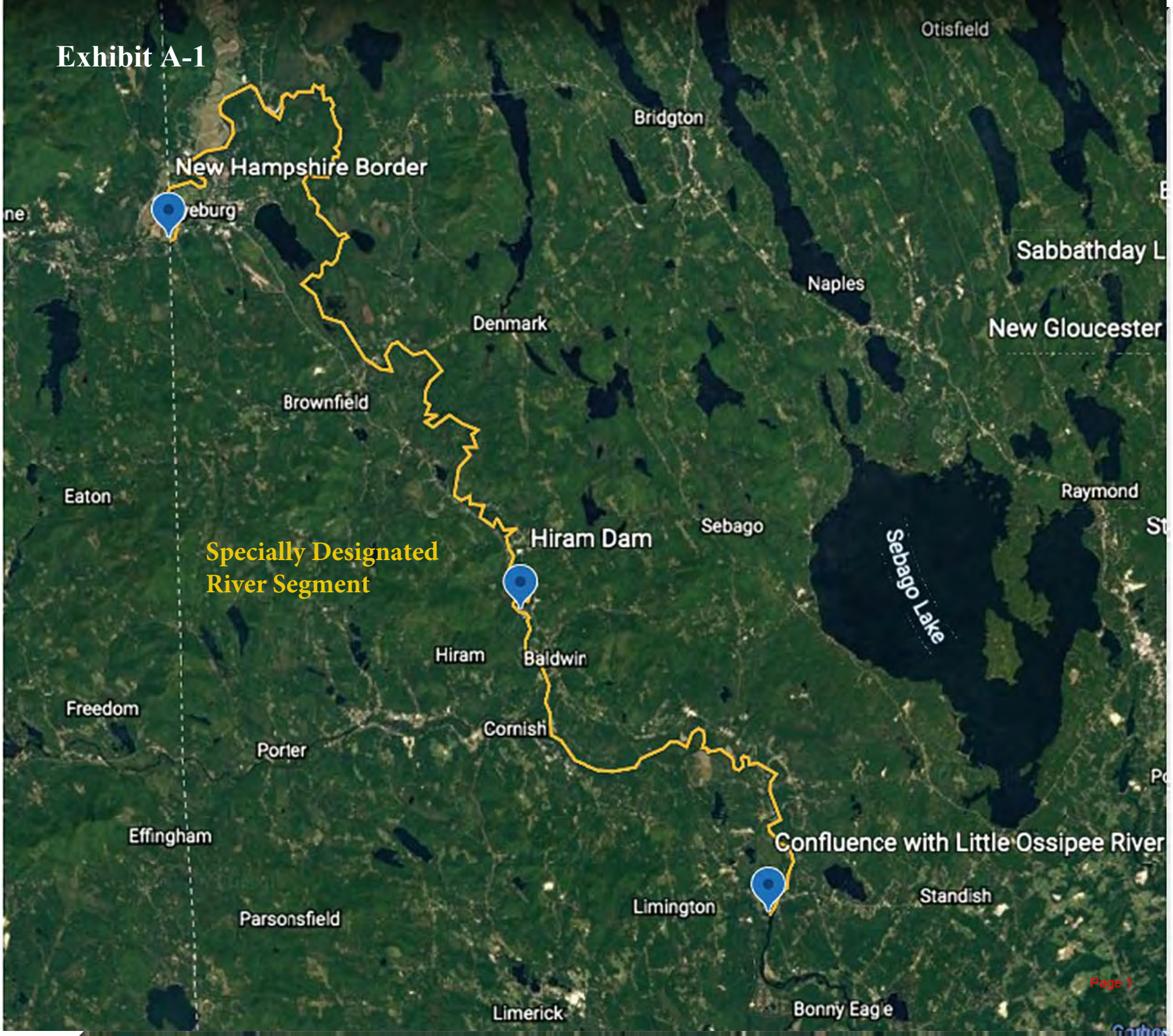
Exhibit A-1
Otisfield
Bridgton
New Hampshire Border
Sabbathday L
Naples
Denmark
New Gloucester
Brownfield
Eaton
Raymond
Sebago
Hiram Dam
Specially Designated
River Segment
Sebago Lake
Hiram
Baldwin
Freedom
Cornish
Porter
Effingham
Confluence with Little Ossipee River
Standish
Limington
Parsonsfield
Limerick
Bonny Eagle

Exhibit A-2

Includes four photos from June 8, 2021 survey by Matt Streeter and overhead imagery

Photo 1, East side 1: This photo shows the east side of the 500-foot long cascade below Hiram Dam, which is dewatered 8 ½ months out of the year, viewed from the downstream end of the cascade. The photo demonstrates that the grade of the cascade is not steep. At moderate flows, it is easily walkable and fishable (I walked around this area with little effort), and passable by any variety of fish species. It is what fisher men and women would call "pocket water", if it were not dewatered. MDEP's analysis concluded that the cascade below the dam does not contain aquatic life, based apparently on a review of this section of the cascade. It can be clearly seen that the reason this section of river is devoid of sediment, vegetation, and related aquatic and terrestrial life is that it is in direct line of the narrow dam gates and the excessively high flows that occur when large releases are made, scouring everything but the larger stones out of the water's path in this narrow channel. If those large flows were moderated and/or distributed across the full width of the cascade, the scouring effect could be mitigated, and if steady flows of 300 cfs were distributed continuously across the full width of the cascade, this scoured out section would recover appropriate sediments and aquatic plants to support a variety of aquatic life. Instead, this section of river is allowed only leakage flows of 2 cfs during 8 ½ months out of the year, interspersed with occasional concentrated, high velocity, destructive flows of water. In short, it is not anything in the nature of the landscape that has made this section of river devoid of life, but rather the operation of the dam itself.

Photo 2, East side 2: This photo shows the gates up close, with about 100 feet of river bottom. It demonstrates all the more starkly the scouring effect of releases from the dam gates on the substrate of the river in this section.

Photo 3, west side 1 - description on second page following.

Photo 4 , west side 2 - description on following page.

Photos 3 & 4, West side 1, West side 2 (above): These photos are characteristic of the west side of the cascade, which is not subjected to the concentrated flows of dam releases. Though dewatered, the pockets in this section at the time these photos were taken contained water and retained aquatic plant and animal life including algae, aquatic insects and tadpoles. Sand and gravel is abundant, and riparian plant species are present. As on the east side, the grade is moderate and with a modest flow would be passable by most fish species. This is attested by the comments of Bruce McLaughlin (Attachment L), a fisherman who fished this section of cascades from its base to the toe of the dam on a regular basis from the early 1980's through 2008. According to McLaughlin, "At that time, there was a fair amount of water flowing over the entire dam". Along with many other fishermen and women for whom Hiram Falls was a destination fishing spot at the time, he "fished all of the pools, starting at the upper ones just below the dam. There we caught decent sized brook trout, and as you descended the rock face to the lower pools and area across from the power house we caught pickerel, fallfish, brown trout, eels and bass". Even in the photos of this dewatered section, any fisher man or woman would recognize that this would be an abundantly populated section of river if it were not dewatered 85 percent of the time.

Photo 5, Google Earth Satellite view: Like the other photos, this satellite view of the cascade serves to show that the grade in this section of river is far from being too steep to sustain aquatic life and fish habitat. It also demonstrates the dramatic difference in habitat on the east side (top of photo) and the west side (bottom of photo), with the red line roughly demarking the two sides. The east side, where the high velocity gate releases periodically scour out the channel, there is no woody debris, no mid-size boulders, and no terrestrial vegetation. On the west side, all of these elements are present. In fact, from ground level it is apparent that the river channel extends some distance under the tree canopy.

Exhibit A-3

Comments of local residents regarding historical presence of brook trout and other fish in the dewatered section of the river

Patty Barber, Hiram Maine 10/31/2021:

I remember when I moved to Hiram in 1999, my boys and I would frequently go to the Hiram Falls. The parking area adjacent to the upper ledges on the west side would always be full of cars, and you could walk the trails from above the dam, to the west side ledges, to the beach area, and along the canoe portage trail that ended well beyond the swimming area to spot where the Saco widened downstream. When Bruce and I first met, he would take me fishing at the Hiram Dam, teaching me how to tie on trout flies and fish the upper pools. My son caught a beautiful brown trout in the lower back pool adjacent to the west side of the falls one spring. I remember days of catching so many bass near the powerhouse that we were fished out in an hour's time! After Brookfield restricted access to the west side ledges and parking area, we have tried to fish the same areas, but now catch only the occasional bass or sunfish. Nothing close to what it was like before when more water was flowing over the whole dam.

Bruce McLaughlin, Hiram Maine 10/30/2021:

I was living in Portland in 1983, in my 20's, and working at a local motorcycle shop. My buddies and I would go fishing on Mondays, the day the shop was closed. A co-worker, Larry Collomy, had a brother who lived in Hiram, and told us about fishing at the Hiram Dam. My friends Bobby Doak, Eric Heath and myself set off for Hiram, and asked some of the locals at the store how to get to the Hiram Dam fishing area. They directed us to River Road, and the west side of the existing dam. We parked at the large parking area beside the trails that led directly to the ledges below the dam. At that time, there was a fair amount of water flowing over the entire dam. We could only access the west side, since the water flow precluded moving across to the east side. We fished all of the pools, starting at the upper ones just below the dam. There we caught decent sized brook trout, and as you descended the rock face to the lower pools and area across from the power house we caught pickerel, fallfish, brown trout, eels and bass. For years this was one of our favorite fishing destinations. In 1994 I moved and started my family, so I didn't fish Hiram for a while. In 2005 I moved to East Hiram, and with my boy and his local buddies Johnny and Drew, they were 10 or 11 years old at the time, we would all fish the Hiram Dam. Everyone had a great time, for they would always catch a ton of fish- bass, eels, pickerel, fallfish and a few brown and brook trout. Sometime around 2008, Brookfield increased the height of the dam, adding a rubber boom, and fenced off access to the parking and west side fishing trails. They limited water flow over the dam to the east side only, through the gates. Many of the pools on the west side dried up. We tried to fish the beach area, and the area across from the turbines, but the fishing fell off, and we would catch only the occasional bass and sunfish. The last few years, every time we have attempted to fish the pools and the river by the dam, we have been disappointed.

Exhibit A-4

December 18, 2019

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

TROUT UNLIMITED
Sebago Chapter

Via online submission to: http://www/ferc.gov

Subject: **Comments of Trout Unlimited, Sebago Chapter Regarding Observed Fish Kills Related to the Operation of the Hiram Hydroelectric Project (FERC Project 2530-054)**

Dear Secretary Bose:

On behalf of its members and the individuals named below, the Sebago Chapter of Trout Unlimited ("Sebago TU") submits these comments regarding the Hiram Hydroelectric Project (P-2530-054) into the record for this matter. This filing bears significantly on two of our earlier filings: Our September 25, 2018 letter[1] proposing an Alternate Study Request for an impingement and entrainment study that the Commission rejected, and our May 25, 2019 letter[2] that viewed with concern the low numbers of eels reported ascending the Saco River counted at Hiram Dam. The May filing also concerns the greater watershed and other projects included in the recently amended Saco River Fish Passage Assessment Agreement[3]: Cataract Project (P-2528), Skelton Project (P-2527), Bar Mills Project (P-2194), West Buxton Project (P-2531), Bonny Eagle Project (P-2529). Accordingly, these comments are filed under those FERC dockets as well.

1. OBSERVED FISH KILLS.

During the period from September 12, 2019 to October 23, 2019, Hiram residents Bruce McLaughlin and Patricia Barber monitored the area below Hiram Dam for the possible presence of out-migrating aquatic life that had been killed by the dam's turbine operations. On October 2, they found and documented the first: a dead eel, a species indigenous and catadromous to the Saco River watershed. There were many animal tracks in the same vicinity indicating that there were additional organisms entrained at the same time as the eel and there may have been more than a single mortality. Other dead fish species were subsequently discovered and documented. Details and photographs are included as Attachment A. These included a white sucker, an indigenous potamodromous fish, and two introduced species: a smallmouth bass and a bluegill. It is clear that the two installed trash racks with three-inch clear openings[4] are allowing fish to be entrained. Sebago TU notes that it is well settled that white suckers and brook trout are both part of a suite of co-evolved species that if located into upstream waters as soon as

[1] Sebago Chapter of Trout Unlimited Comments on Brookfield White Pine Hydro Revised Study Plan For The Hiram Hydroelectric Project (FERC Project 2530-054) dated September 25, 2019
[2] Sebago Chapter of Trout Unlimited Response of May 25, 2019 to Filing "Saco River Fish Passage Assessment Agreement Amendment for Brookfield White Pine Hydro LLC's Cataract Project (No. 2528), Skelton Project (No. 2527), Bar Mills Project (No. 2194), West Buxton Project (No. 2531), Bonny Eagle Project (No. 2529), Hiram Project (No. 2530)" dated May 8, 2019
[3] Brookfield Filing "Saco River Fish Passage Assessment Agreement Amendment for Brookfield White Pine Hydro LLC's Cataract Project (No. 2528), Skelton Project (No. 2527), Bar Mills Project (No. 2194), West Buxton Project (No. 2531), Bonny Eagle Project (No. 2529), Hiram Project (No. 2530)" dated May 8, 2019

[4] Brookfield Notice of Intent to File License Application and Pre-Application Document dated November 30, 2017, Section 4.4.4

possible is highly beneficial to salmon and salmon recovery, as these species will provide some protection from cormorants and other smolt predators to downstream migrating salmon smolts.[5]

While these are not large numbers of fish, dead fish tend to sink immediately after they die, particularly when chopped by turbines, and we believe that there were many more that would have been discovered at the bottom of the pool below the dam. Additionally, studies[6] indicate that dead eels may travel far downstream; additional fish may have been washed up on the opposite bank from the monitored shore that were not discovered. Thus, it is a reasonable assumption that entrainment is killing many more eels and other fish at Hiram Dam especially during low water conditions present when the eel was found. This is as to be expected - with 300 CFS minimum flow, and the bifurcated penstock nearly all the water flowing in the Saco flows through the penstock and through the turbines entraining and killing a variety of fish in the process.

2. ADDITIONAL DOWNSTREAM EEL AND WHITE SUCKER PASSAGE MEASURES MUST BE CONSIDERED.

Sebago TU believes that there is an outstanding significant issue that remains inadequately addressed in the context of this Project relating to ensuring that downstream passage of diadromous fish through the project does not violate state water quality standards, specifically: ensuring safe, timely and effective downstream passage for eels, namely through the use of "deep gate" passage and white suckers through species appropriate passage.

a. Observed eel mortality due to turbine entrainment during seasonal migration is not being satisfactorily addressed by Applicant's operational effectiveness measures.

There is no data on whether and to what extent Applicant's proposed downstream fish passage effectiveness measures will continue to cause mortality to out-migrating American eel – mortality from turbine entrainment that is now being documented by Sebago TU and not denied by the Applicant. Further, neither FERC nor the Applicant has made any recommendations to emphasize turbine shutdowns or trash rack improvements to address the issue of downstream passage eel mortality. There is no operational shutdown or modification proposed for this purpose and there is no proposed study or data gathering that might demonstrate the efficacy of these measures. Simply put, there is a self-evident problem inherent in eel passage: if eels are effectively prevented from entering turbines and cannot go downstream over the spillway, they are left with only two options for downstream for downstream spawning: non-existent surface fish passage or, for those eels deeper in the water column, passage through the existing trash rack and into rotating turbine blades. Neither option is effective.

Accordingly, Sebago TU is requesting the License contain terms and conditions requiring Applicant to demonstrate, subsequent to issuance of the state CWA §401 certification and FERC license, and using data from three consecutive out-migrating seasons with study design approved by state (Maine DMR and

[5] In addition to the benefits eels and trout offer as prey buffer to salmon smolts, their necessary presence to salmon restoration has been recognized under the Endangered Species Act (16 USC 1531 *et. seq*) ("ESA"). The depletion of diadromous species such as brook trout, a diadromous fish, are in the 2019 recovery plan (page 11) as a secondary stressor on recovering associated with ESA "factor E" specifically the threat of "depleted diadromous fish communities" as part of the "co-evolved suite of diadromous fish" beneficial to salmon recovery. ESA delisting criteria (page 32 – 2w) also addresses secondary threats stating that: "co-evolved diadromous species are restored to extent necessary to provide resources and ecosystem functions." Further, under the 2018 *U.S. Fish and Wildlife Service and NMFS Recovery plan for the Gulf of Maine Distinct Population Segment of Atlantic salmon (Salmo salar),* recovery actions, page 35, Section C5.0 states that a specific action is to: "Implement connectivity projects that ensure access to the co-evolved suite of diadromous fish that are part of the ecosystem Atlantic salmon depend on." (*e.g.* alsoines, brook trout and eels).

[6] Havn, T.B., Økland, F., Teichert, M.A.K. et al. Movements of dead fish in rivers. Anim Biotelemetry 5, 7 (2017) doi:10.1186/s40317-017-0122-2

DEP) and federal agencies that downstream passage for American eel and white sucker at Hiram Dam is 90% effective, consistent with FERC's commonly used recommended downstream fish passage effectiveness measures and those measures state agencies have has used at other dam locations in Maine.[7] This data should include an Applicant-conducted 3-year study to determine the feasibility and exact timing of generation shutdown, so as to result in the optimum benefit for downstream eel migration.

If, following this three-year study, Applicant cannot demonstrate to state or federal agencies that it is meeting this downstream performance standard after implementing whatever downstream eel passage requirements that may be imposed either by FERC or the state, no later than one year after the submittal of this passage data Applicant must submit to state and federal agencies, after consultation, a technical/engineering analysis of where a deep gate would be placed in the Hiram Dam that will reduce mortality to American eel and white suckers migrating downstream. This technical/engineering analysis would account for the unique characteristics of the Project and variety of factors that may affect the efficacy of deep gate passage (*e.g.*, water velocity regimes at various depths). If Applicant contends or can demonstrate that deep gate passage at one or both dams would be ineffective, Applicant must provide alternative passage design that will achieve the downstream eel and white sucker passage performance standards.

3. NEPA REQUIRES FERC CONSIDER THE PROJECT'S CONTINUING IMPACTS TO INDIGENGENOUS SPECIES MORTALITY.

Under the Federal Power Act, FERC is charged with licensing the development, improvement, and operation of hydroelectric projects along navigable waterways.[8] No license may be issued, or relicensed, unless the Commission first determines that the proposed project "will be best adapted to use for a comprehensive plan for improving or developing" the relevant waterways.[9]

Similarly, NEPA mandates that federal agencies analyze the environmental consequences of proposed major federal actions, such as dam relicensing, and to incorporate those impacts into its decision making.[10] The EA that is to be prepared under NEPA in this Project[11] is to determine whether the proposed federal action, a 30-year relicensing, will significantly impact the quality of the human environment.[12] As the court in *American Rivers III* stated:

> NEPA's primary function is "information forcing"[13] compelling federal agencies to take a hard, honest look at the environmental consequences of their decisions.[14] In particular, to ensure that agency decision making is fully informed, NEPA requires the agency to (1) identify accurately the

[7] For example, *see* May 15, 2009 *Next Era Energy Maine Operating Services letter to Kimberly D. Bose, Secretary FERC regarding Kennebec River Diadromous Fish restoration Annual Reports, Kennebec River Hydro Developers Group (KRHDG), Ft. Halifax (FERC 2552), Lockwood (FERC 2574), Shawmut (FERC 2322), Weston (FERC 2325), Hydro-Kennebec (FERC 2611), Burnham (FERC 11472), and Benton Falls (FERC 5073)* at page 2 citing DMR comments regarding Shawmut downstream eel passage and specific deepgate, operational shutdowns and overlay screening requirements stating "DMR's goal is to achieve 90% upstream and downstream passage efficiency at each hydropower dam for each species."

[8] 16 U.S.C. § 791 *et seq.*

[9] Id. § 803(a)(1); *see also id.* § 797(e).

[10] 42 U.S.C. § 4321 et seq.

[11] FERC Scoping Document 1 for Hiram Hydroelectric Project dated January 29, 2018 ("FERC Scoping Document 1") at 3.

[12] 40 C.F.R. §§ 1501.4; 1508.9(a).

[13] *American Rivers and Alabama Rivers Alliance v. FERC and United States Secretary of the Interior (American Rivers III)*, No. 16-1195 (D.C. Cir. 2018) at 26, citing Sierra Club v. FERC, 867 F.3d 1357, 1367 (D.C. Cir. 2017).

[14] Id. at 27, *citing Mayo v. Reynolds*, 875 F.3d 11, 16 (D.C. Cir. 2017) and *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.,* 435 U.S. 519, 558 (1978).

environmental concerns, (2) take a hard look at the problem in preparing its Environmental Assessment….[15] Under that test, the Commission's [EA] *will pass muster only if it undertook a "well considered" and "fully informed" analyses of the relevant issues and opposing viewpoints.*[16] (emphasis supplied).

Thus, in determining whether the agency has taken a "hard look" the Commission must consider and address: (1) multiple indicators that the Hiram Project could have a significant impact on the environment, including the types of substantial effects on fish passage; and (2) the cumulative environmental effects of the Hiram Project. Given the documented fish kills, required studies must now include a HI-Z Balloon Tag Study with special emphasis on the indigenous species: American eel, white sucker and brook trout.

4. STATE LAW WILL REQUIRE THESE IMPACTS TO BE CONSIDERED.

In agreeing to postpone eel passage until 2032, the Applicant must believe that it bears neither a legal obligation nor a moral duty to address the devastating impact that its hydropower project has caused and continues to cause to diadromous species such as eels, white suckers or native brook trout in the Saco River. As currently proposed in the 2007 Settlement Agreement (as recently amended) there is no rational basis stated for this delay, no compelling reason despite observed species entrainment mortality. As such, the Application threatens to make it impossible for the State of Maine to achieve state water quality standards protecting designated uses for catadromous eels upstream of the Hiram Dam.

Fortunately for the health of the Hiram River and its fisheries, the state of Maine's water quality laws - *as developed and applied by Maine DEP and vigorously defended by the Maine Office of the Attorney General over the last fifteen or more years* - has not been silent, and indeed has developed a clear response to Applicant's omission of any rational basis justifying such a delay. And the response is this: unless there is a rational, *fisheries-tethered* basis for not installing safe, timely and effective passage, a hydropower owner must do so at its project to allow access by an indigenous species to its spawning and rearing habitat to rebuild its remnant population once these species have access to the waters below the project. Otherwise, an application for certification of a project resting in Class B waters fails to meet the designated uses and narrative criteria of 38 MRSA §465(4) and cannot be approved.

a. To meet the requirements of state water quality law, DEP has the authority to order installation of upstream and downstream passage for indigenous species as part of its water quality certification.

When FERC and the state of Maine last reviewed whether the operation of the Hiram Dam met state water quality standards, it is fair to say that the legal question of whether state water quality law required the owner of a hydropower project to install upstream and downstream passage at its dam(s) in order to allow passage for an indigenous species to reach its native spawning and rearing habitat had not been clarified by Maine's Supreme Judicial Court (the "SJC"). However, in the ensuing years since the Hiram Dam was last certified and licensed, any uncertainty around this issue and around Maine DEP's authority to order fishways as a condition of water quality certification has evaporated. Beginning in 1991 with the Court's decision in *Bangor-Hydro-Electric v. Board of Environmental Protection,*[17] and then culminating in the SJC's decision (upheld by the U.S. Supreme Court) upholding DEP's and BEP's 2003

[15] Id. citing *Sierra Club v. Van Antwerp*, 661 F.3d 1147, 1153-1154 (D.C. Cir. 2011), as amended (Jan. 30 2012).
[16] Id. *citing Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1324-1325 (D.C. Cir. 2015) ("Myersville").
[17] *See Bangor-Hydro-Electric v. Board of Environmental Protection,*595 A.2d 438 (1991).

requirement of phased fishways in the Presumpscot River certification[18] any prior question of whether the designated uses and narrative criteria under state law and contained in 38 MRSA §465(4) provide Maine DEP with the authority to order the construction of fish passage as part of certification has been removed.

> b. To remain consistent with the precedents Maine DEP established since 2003 on other rivers, FERC and the state of Maine must require the Applicant to install safe, timely and effective upstream and downstream passage for American eel at the Hiram Dam.

As discussed above, the legal question of *whether* Maine DEP has the legal authority under Maine law to order the Applicant to install safe, timely and effective upstream and downstream passage for American eel in the circumstances found today on the Hiram River is not in doubt; it is well settled law that it does, and Sebago TU is not aware that the Applicant is challenging this authority. What the Applicant does appear to be testing, by its refusal to propose immediate construction and operation of alewife passage at Hiram, is whether Maine DEP will be prepared to apply to the Saco River the Department's own precedents regarding the *timing of when passage must be installed* - precedents on timing that were established in state water quality certifications on the Presumpscot River, and recently reinforced on Cobboseecontee Stream (where deep gate eel passage was required).

Under this precedent, agency decisions (beginning with the Presumpscot certifications in 2003) have granted delays to dam owners in constructing fish passage for indigenous species at dams that lack such passage *if a rational, fisheries-based reason existed for granting a delay*. In the 2003 Presumpscot certifications, S.D. Warren was required to install upstream passage at the Saccarappa dam to pass indigenous American shad, blueback herring and Atlantic salmon, but only two years after one or more of these indigenous species were physically able to access the waters at the base of the Saccarappa dam ollowing the construction of fish passage at the downstream Cumberland Mills dam. This exact same DEP approach – requiring the installation of upstream passage for indigenous anadromous fish at a particular dam but delaying its required installation until these fish could gain access to the waters immediately below the dam – was the rationale used for establishing the timing of installing required upstream passage in DEP's recently issued American Tissue Certification.[19] For S.D. Warren's other Presumpscot River dams included in the 2003 relicensing (those upstream of Saccarappa) the trigger for installing certification-ordered fish passage was rationally different but also fisheries-tethered: by first providing a small, remnant shad and blueback herring population with access to large amounts of first-in-river spawning habitat above Saccarappa (through construction of the Saccarappa fishway), the immediate legal need for access to meet state and federal fisheries objectives had been achieved and additional fish passage at S.D. Warren's upriver dams could be delayed until the population began to rebound and required access to habitat upstream of those dams as well.

Here, the observed presence of eels and white suckers migrating downstream and getting entrained by turbine operations is conclusive evidence that these species are present upstream of Hiram and require

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[18] *S.D. Warren Company v. Board of Environmental Protection*, 2005 ME 27, 868 A.2d 210 (2005) ("S.D. Warren I"); *S.D. Warren Company v. Board of Environmental Protection*, 547 US 370 (2006) ("S.D. Warren II"). In S.D. Warren I at 442, the Court concluded that the narrative criteria at 38 M.R.S.A. § 465, which requires waters "of sufficient quality to support all indigenous fish species," was intended to be an integral part of the water quality standards for the BEP to consider. The Court also concluded, based upon the specificity of the designated uses at 38 M.R.S.A. § 465, that the Legislature's purpose for the language "suitable for the designated uses" was "that the designated uses actually be present." The court also stated that when those uses are not presently being achieved, the Legislature intended the quality of the water be enhanced so that the uses are achieved. (internal citations omitted)

[19] *See* American Tissue Certification at 33-36.

safe, timely and effective passage to access spawning grounds and freshwater habitat. There is no rational basis to delay this passage and Applicant has provided none.

Therefore, in light of the information contained in Attachment A, we respectfully request the following:

1. That FERC order a third year of studies that include a HI-Z Balloon Tag Study to assess downstream fish passage mortality. FERC rejected the impingement and entrainment desktop study[20] as an alternative to the Brook Trout Migration Using Radio Tags that we requested. We ask that a HI-Z Balloon Tag Study be conducted regardless of whether the brook trout radio tracking study is conducted or not. Besides eels, the HI-Z study needs to include brook trout and white suckers that are indigenous, potamodromous fish that need to move within watersheds to access critical habitat.

2. That the signatories to the Saco River Fish Passage Agreement revisit and reevaluate both the timing and efficacy of of proposed American eel and white sucker passage in the context of the Saco River watershed and Hiram Dam operations. In addition to our previous request[21] that: "The counting locations used may need to be reevaluated or trapping considered as an alternate counting methodology." downstream eel passage, particularly deep gate passage must be considered as well, particularly as the status of these species as indigenous will trigger heightened review and scrutiny of safe, timely and effective passage at the state water quality certification level.

As we have previously stated in our filings: "we continue to believe that Hiram Dam license surrender and dam removal are the best choice for both the ecology and aesthetics of the Saco River. As the study cited by the Applicant[22] classifies the upper Saco River as Biological Condition Gradient (BCG) 5: *"Native diadromous species are absent or if present by interventions; some native cyprinids are absent, replaced by tolerant and moderately tolerant species; brook trout are absent; non-native salmonids are non-reproducing; non-native eurytherms usually predominate; anomalies present."* BCG 5 indicates a high degree of disturbance to the habitat, the worst score on this scale is a 6. If the project is relicensed and allowed to continue to operate, the next best option is provision --WITHOUT PRECONDITONS-- of upstream and downstream fish passage designed to accommodate the natural movements of brook trout that are known to be present in the watershed, and also Atlantic salmon, white suckers and eels as provided for in the 2007 Agreement as amended.

Respectfully,

Stephen G. Heinz
Sebago TU Hiram Dam Relicensing Response Coordinator

Attachment A: Hiram Dam Monitoring, Bruce McLaughlin and Patricia Barber, December 7, 2019

[20] Sebago TU Comments on Brookfield White Pine Hydro Revised Study Plan, Appendix C
[21] Sebago TU Response of May 25, page 2
[22] Yoder. C.O., R.F. Thoma, L.E. Hersha, E.T. Rankin, B.H. Kulik, and B.R. Apell. 2009. Maine Rivers Fish Assemblage Assessment: Development of an Index of Biotic Integrity for Non-wadeable Rivers. (Addendum December 31, 2015). MBI Technical Report MBI/2008-11-2. Submitted to U.S. EPA, Region I, Boston MA. 55 pp. + appendices, especially pages 12 and 40

Attachment A

Hiram Dam Monitoring 12/7/2019

We are Bruce McLaughlin and Patty Barber and we live at 21 King Street, Hiram, Maine which is approximately 3 miles from the Hiram Dam. We are associated with Brett Ciccotelli of the Downeast Salmon Federation who put us in contact with Steve Heinz of Sebago Chapter of Trout Unlimited. We have been monitoring the west side of the Saco River below the Hiram Dam off River Road in Hiram - from the power station to approximately 1.5 miles downstream. We started the morning of September 12, 2019 and ended October 23, 2019 due to colder weather making it dangerous to access the water. During this timeframe, we averaged three to four mornings per week.

During the first few weeks of our study our area was in drought conditions; the water level was very low below the dam, with 99% of the water diverted through the turbines, and only a small trickle of water allowed over one of the dam gates. We saw very little animal activity.

The night of October 1st, there was an extensive rain and thunderstorm, and during our morning study on October 2nd, we noticed many animal tracks, bobcat and coyote, on our approach to the river. As we rounded the corner of a small island, a mature bald eagle flew up from the shore. On closer inspection of that site, we saw the body of an adult eel lying on the sand, adjacent to drag marks where the eel had been removed from the river onto the shore. It had severe head trauma, and a folding-like injury to its midsection. This eel measured 36 inches long and 8 inches circumference. This portion of the bank is adjacent to a large circular current backwash, and the bank had a large amount of animal tracks showing pacing back and forth along the water's edge, and other drag marks leading out of the water, with bits of flesh and gills left on the beach; we assume these were the remains of additional specimens pulled from the water and either eaten or carried off. The water level was still low downstream of the dam, with almost all of the water diverted through the turbines. Subsequent days did not show any further animal activity in the area.


2019/10/02


2019/10/02

On October 18th, 2019, after multiple days of rain, we found the water level very high behind the dam impoundment, and on that day water was flowing over the dam. We found a dead submerged white sucker just distal to the dam along the river's edge. It was 20 inches long, and 10.5 inches in circumference with head trauma. By the next day, the overflow had stopped and almost all of the water was diverted through the turbines.


2019/10/18

On October 23rd, we found a submerged, decapitated bass measuring 9 inches long, and a 5-inch fish missing its eyes that we assume is a bluegill or sunfish, in the same vicinity as the sucker prior. The water level below the dam was again low, with almost all of the water diverted through the turbines. This was the last day we went.

We have stored the specimens (eel, sucker, bass and blue gill) in our freezer and will continue to hold them for further inspection. We plan to continue our study of the area downstream to the Hiram Dam starting next spring, and will continue to monitor the banks until inclement weather occurs.

Sincerely,

Bruce McLaughlin

Patricia Barber

21 King St

Hiram, Maine 04041

Exhibit A-5


HIRAM FALLS. HIRAM ME.


PHOTOGRAPH
POST CARD
FROM STUDIO OF
EASTERN ILLUSTRATING CO BELFAST ME
CORRESPONDENCE
FOR THE ADDRESS
SEP 25 1928
MAINE
M S
Mr. Chas W. Michelsen
157-4 Avenue
New York City
31781

Exhibit A-6

Exhibit A-7

mike herman, Needhm, MA.

To whom it may concern at F E R C,
I am a Native of ME and a Property owner in Cornish.
I am writing this letter to express my feelings and thoughts about the relicensing of Hiram Dam, Project Number P2530. My Children, Grandchildren and I have enjoyed Canoeing, Kayaking, Fishing, Swimming and Picnicking on the Saco River near the dam, for many years!
Over the last 12-13 years we have seen a continued degradation of this area. I am not sure who is to blame but is sin to let what once was a beautiful Family Recreation Area fall into total disarray. We cannot go there any longer. The Dead Fish coming through the Turbine liter the banks downstream from the Dam. There are more fences, less Parking, more Trash and Broken Glass, all of which make the area less accessible and less desirable!
As the Licensing Body I am certain that you can put requirements on the power company, and possibly the town, to clean up this mess.
I realize that Hiram Dam does produce a good amount of clean energy, but at what cost? There is no reason that The Power Company and the Local Citizens cannot share this beautiful area.
I would like to suggest; a Major Clean Up, More Parking, More Patrols by Local, State and Environmental Law enforcement. It is also imperative to add and a Fish Ladder which will allow clean, safe passage for fish most of the year, with out compromising the efficiency of the dam!
Thank you for your careful consideration in this matter.
Regards,

Michael Herman

Exhibit A-8

PATRICIA A BARBER, Hiram, ME.

I live in East Hiram and have been fishing, swimming and hiking in and around the Saco River and the Great Falls area for over 20 years. I have seen first hand the influence Brookfield's Hiram Dam has had on the waterways, wildlife, and surrounding recreational areas. The dam has destroyed any semblance of a flowing river. The Great Falls are not falls, but a series of rocks and stagnant pools. The falls are almost completely dewatered most of the summer. I have walked up the entire rock face, dry as a bone, from the sandbar/beach area to just below the concrete dam. I have tried to fish the little pools that remain in the hollowed out rock areas and they are devoid of fish- not even frogs or waterbugs are present. 99.9% of the water of the Saco River flows from the impoundment behind the dam through the turbine blades to the pool by the sandbar.

These falls were essential to the local Native People's populations. They supported renown native brook trout, American Eel, and Atlantic Salmon fisheries. They were a great recreational destination with an overlook, a diner, a Great Falls side park and picnic area, and swimming hole. These have mostly disappeared since the dam was built. Now there are chain link fences, metal gates, sketchy overgrown overlook and 'nature trail' areas, dewatered falls, and the only fish you can catch are bass, an invasive species.The beach and sandbar area below the turbines is still a popular swimming area, but I myself am afraid to swim out too far, fearful that the turbines will suck me under. Some users leave mounds of trash and rotted food, dig out shallow toilet areas in the sand, and camp out overnight and party against permission. The local townfolk and volunteers try to keep the area clean and safe, but it is a losing battle.

It is imperative for the health of the waterway and the lives that depend on it that there be a connection above and below the dam (NOT through the turbine blades as is present now). There needs to be a working, natural fish passage to allow the native run brook trout (there are viable Brookie feeder streams above the dam impoundment), American Eels (the Saco supports healthy eels that are decades old, only to be chewed up by the turbines as they try to navigate back to the Sargasso Sea to reproduce), suckers and other native fish species. The fish passage needs to be in place for when the mandated fish passages in the downstream Saco River dams are opened up to allow the Atlantic Salmon back up the river to lay their eggs. The flow over the falls needs to return to allow the river quality to return, to allow a more natural aquatic ecosystem.

The recreational areas need to be improved: better parking (the lower parking lot only holds six cars, and has a narrow, bottlenecked entrance), policing and maintenance for safety, bathroom facilities, and a more inviting presence- the industrial infrastructure, with the chain link fences, metal gates, trash and debris, aging powerhouse and warning signs lends an air of neglect, misuse and danger.

Brookfield and their partners have benefited greatly from taking and using all of the water from Great Falls to build their own profits. They owe a debt and some respect to the river, its wildlife, and the people who love and use the area. It's time Brookfield gave something back, to replace some of what was taken, to bring back life and a natural ecosystem to an ancient and beautiful place.

Patty Barber Hiram Maine

Exhibit A-9
Hiram West Bank Trails & Parking Areas

Brookfield provides minimal detail of the west bank below Hiram Dam. The Portage Trail (in yellow) leads to the New Put In (5) but you will note, the trail leads to the sand bar, not the water. Brookfield ignored the existing but neglected Old Portage Trail (in yellow) that does lead to the Old Put In (8) and water. Brookfield omitted it and both the Old Parking Area(4) and Old Riverside Park (3) from its Recreational Facilities Inventory. With the loss of the Scenic Overlook, no good vantage point for viewing the falls (when watered) remains accessible. The New Parking Area (7) has a bottleneck for an entrance and only provides room to park about six vehicles, the old parking area accommodated about a dozen.

Photos follow that are keyed to the numbering scheme of this graphic.

1 - Take Out

Note sign on post by stump right of photo center

2 - Start of Portage Trail

3 - Old Riverside Park

Park is on left behind fence. Note sign obscured by fence.

4 - Old Parking Area from inside fence

5 - New Put In

Photo taken January 2021. Area was watered, is sandbar much of the summer.

6 - Continuation of Old Portage Trail

7 - New Parking Area

Note narrow access road creating bottleneck

8 - Old Put In

Old put in remains watered year round


Exhibit A-10
Powerhouse
1000 feet from Dam
Hiram Dam
Class A Waters
Class AA Waters
975 feet from Powerhouse
Approximate Sonde and wire basket location

Exhibit A-11

FIGURE 4-3 2018 WATER QUALITY STUDY SAMPLE SITES

Exhibit A-12

Table 2.1-4: Habitat Measurements in the Tailwater Section Downstream of Hiram Dam for Aquatic Macroinvertebrate Sampling, Saco River, July-August 2018

Macroinvertebrate Field Data Sheet

Log Number _____	Directions_____	Type of Sampler**RBG**
Station Number 1	_____	Date Deployed **7-18-18**
Waterbody **Saco**	_____	Number Deployed **3**
River Basin **Saco**	Lat-Long Coordinates	Date Retrieved **8-15-18**
Town **Hiram**	Latitude **43°39'52.49""**	Number Retrieved **3**
Stream Order **6**	Longitude **70° 36' 03.27"**	Collector(s) **P Leeper MME**

1. **Land Use** (surrounding watershed)		2. **Terrain**	3. **Canopy Cover**
☐ Urban	**X** Upland conifer	☐ Flat	☐ Dense (75-100% shaded)
☐ Cultivated	☐ Swamp hardwood	**X** Rolling	☐ Partly open (25-75% shaded)
☐ Pasture	☐ Swamp conifer	☐ Hilly	**X** Open (0-25% shaded)
X Upland hardwood	☐ Marsh	☐ Mountains	(% daily direct sun) **80%**

4. Physical Characteristics of Bottom estimate % over 12 m stretch

	Bedrock	**50**	Cobble (2.5" – 10")	**30**	Sand (<1/8")		Clay
	Boulders (>10")	**20**	Gravel (1/8" – 2.5")		Silt		Muck

5. **Habitat Characteristics** (immediate area)		Temp. Probe # ☐ deployed	7. **Water Samples**
Time **1030h**	Time **1100h**		☐ Standard
Wetted Width **145'**	Wetted Width (m) Bank	**6. Observations**	☐ Other
Bank Full Width	Full Width (m)	7-18-18 –	Lab Number
Depth **4.1'**	Depth **4.2'**	Rooted macros- grass,	
Velocity **1.4fps**	Velocity **1.7fps**	attached filamentous	**8. Photograph**
Diss. O_2 (ppm)**8.0**	Diss. O_2 (ppm)**7.9**	algae	Put-In **Yes**
Temp (C) **24.2**	Temp (C) **23.0**		Take-Out **Yes**
Turbidity	Turbidity		
DO Meter #_____Cal? **Y** / N?	DO Meter #_____Cal? **Y** / N		

Exhibit A-13

Photo 2.1-2: Location of datasonde downstream of Hiram Project

Exhibit A-14

FIGURE 4-7 WATER TEMPERATURE FROM THE HIRAM IMPOUNDMENT AND TAILWATER AND THE HIRAM FALLS REACH, MAY 28 TO OCTOBER 14, 2019

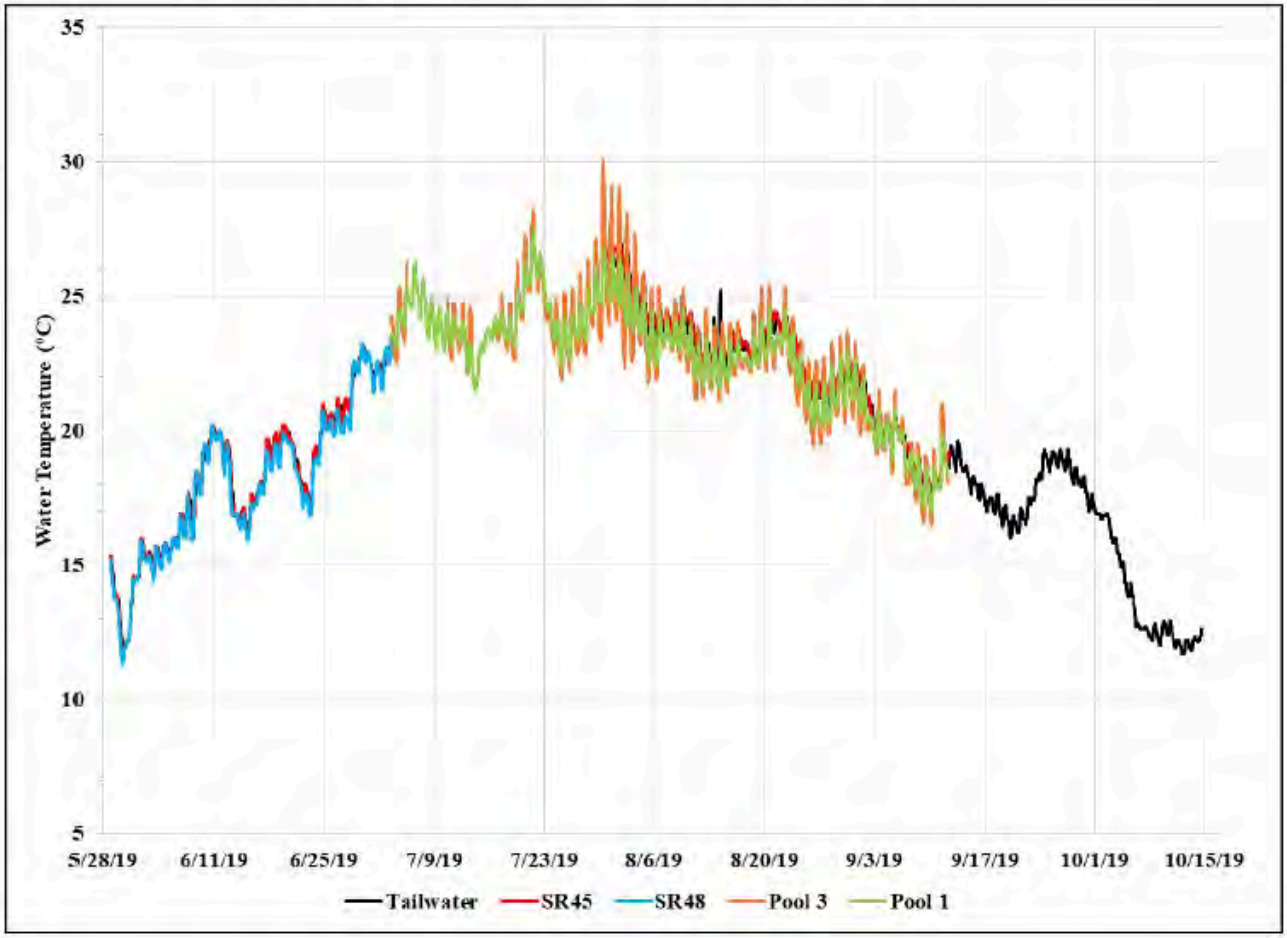
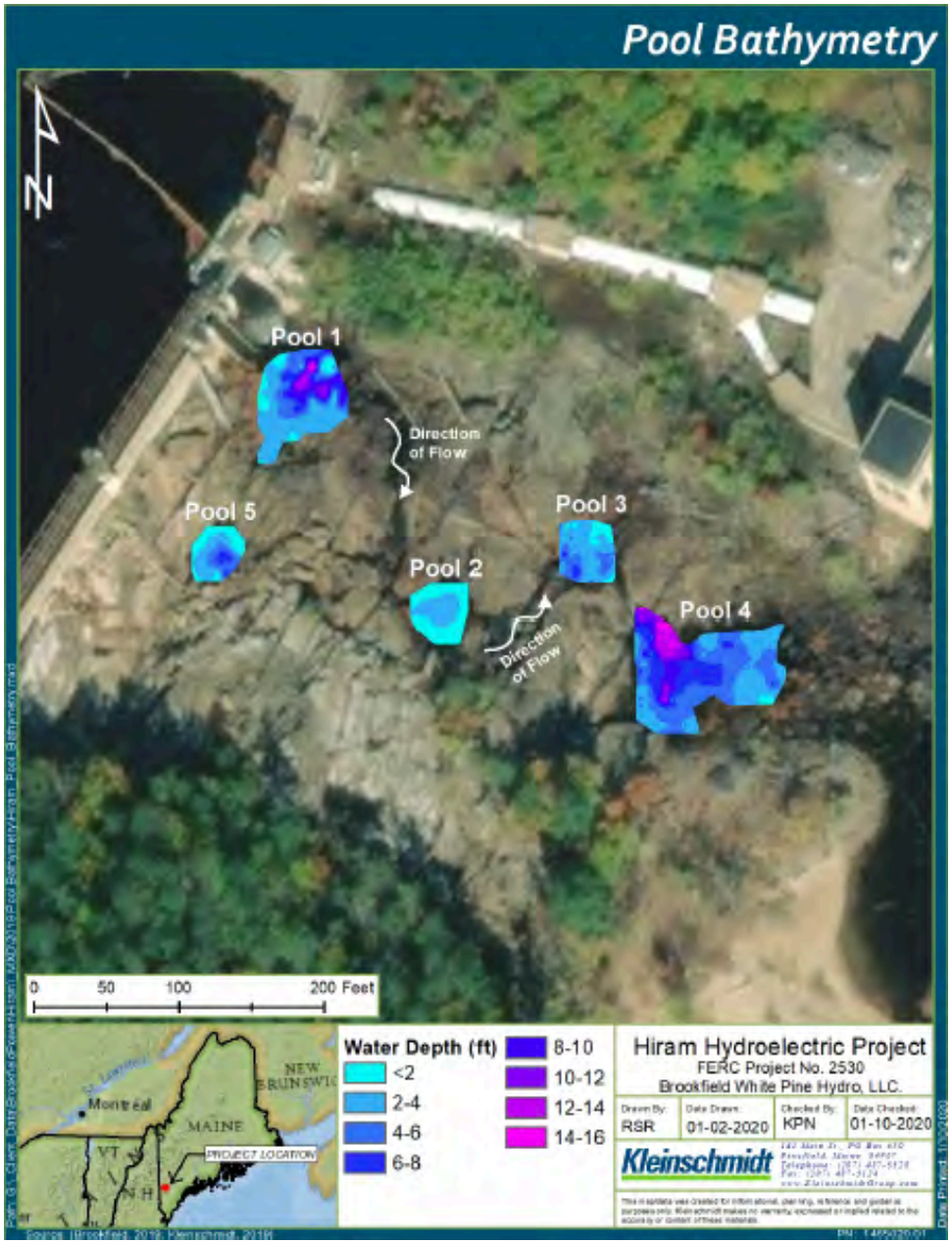


Exhibit A-15


Pool Bathymetry
N
Pool 1
Pool 2
Pool 3
Pool 4
Pool 5
Direction of Flow
Direction of Flow
0 50 100 200 Feet
Water Depth (ft)
<2
2-4
4-6
6-8
8-10
10-12
12-14
14-16
Hiram Hydroelectric Project
FERC Project No. 2530
Brookfield White Pine Hydro, LLC.
Drawn By: RSR
Date Drawn: 01-02-2020
Checked By: KPN
Date Checked: 01-10-2020
Kleinschmidt
Montreal
MAINE
NEW BRUNSWICK
VT
N.H.
PROJECT LOCATION


Baldwin, Cumberland County
Pool 1
Pool 2
Hiram, Oxford County
Oxford
Cumberland
Legend
Location of Data Sondes
County/Town Boundary
0 50 100 200
Feet
Brookfield White Pine Hydro LLC
Hiram Hydroelectric Project
Final License Application
Location of Data Sondes
in the Hiram Falls Reach
Figure 4-6
Created: 11/13/2020
TRC
14 Gabriel Drive Augusta, ME 04330

Exhibit A-16

IN THE MATTER OF

Maine DEP Water Quality Certification,)
Hiram Hydroelectric Project)
L-07780-33-L-N (FERC P-2530))
Appeal by Trout Unlimited, Sebago Chapter.)

EXHIBIT A-16 (SUPPLEMENTAL)

AFFIDAVIT OF MARK WHITING, PhD

I, Mark Whiting, hereby declare the following statements are true and accurate to the best of my knowledge, information and belief:

1. My name is Mark Whiting. I am a Senior scientist with 50 years of experience in biology, ecology, conservation, and fisheries restoration. I was formerly employed by the Maine DEP and as part of my employment worked in the division of licensing and enforcement (for approximately 8 years) and as a biologist in DEP's Salmon Program (for approximately 16 years). I am also a Member of the Board for the Downeast Chapter of Trout Unlimited. My Curriculum Vitae is attached as Exhibit 1 to this affidavit.

2. I have reviewed the Hiram Hydroelectric Project WQC and other documents in the record for this appeal.

3. Based on this review, and my professional opinion, my objection to the Hiram Dam Water Quality Certification has to do with the Applicant's failure to show that the Class A waters below the dam meet state quantitative and narrative standards. The Saco River below the dam has two parts, the Falls (also called the "Bypass") and the Pool where the turbines discharge water back into the river. My observations are divided into these two river sections.

a. The Class A waters in the Dewatered Falls immediately below the Hiram dam:

i) Hiram Falls is currently watered by dam overflows during high flows (spring and fall) when the flow in the river exceeds the ability of the turbines to use that flow, and during winter and summer (for a period of 8 ½ months) low flows by leakage from the dam. The low baseflows are especially visible in the summer and are typically about 2 cfs (a large river is reduced to a small stream with a lot of exposed rock). The low flows prevent the establishment of typical river plant and animal communities that should be present in this Class A segment of the river. Accordingly, it is my professional opinion that the applicant thereby fails to show that this river section meets its statutory criteria for Class A plant and animal habitat.

ii) The applicant shows that the larger pools present in the de-watered segment are able to maintain acceptable dissolved oxygen values (equal to or greater than 7 mg/L or 75%

saturation). However, the results of only two of the DO sensors were presented. Three of five loggers failed or were vandalized. There is no data to confirm (or deny) that the remaining pools, one of which becomes stagnant during the dewatering period, meet the required numerical criteria for Class A waters.

iii) The applicant is required to show in a WQC that there is adequate water flow to support designated uses for the classified waters in question – here the Class A waters immediately below the dam. Given that much of the year the riverbed is dry, the conclusion is that clearly there is no adequate supporting flow. Evenly distributed minimum flows over the dam are not provided by the Applicant and that practice is contrary to historical operations at the dam. The previous owner kept the falls watered and there were fishing and other recreational opportunities at the falls. The falls looked like part of the river and it had scenic appeal.

iv) The Applicant itself acknowledges that the Falls do not support diverse plant and animal communities. A macroinvertebrate collection is not needed to conclude that the Hiram Falls river section in the dewatered segment fails this test for Class A waters.

v) There is practical remedy that should remedy many of these deficiencies:

- The Falls could have habitat value and scenic appeal if watered with 300 cfs minimum flows - as it was in the past.
- The dewatered Falls reach obviously does not meet ¾ wetted width or other minimum flow criteria.
- DO data was only submitted for 2 of 5 sensors deployed. No data is available from the stagnant pool. The pools should be resampled. The DO loggers need to be checked more frequently and be replaced as needed. Once minimum flows over the dam are re-established, DO and macroinvertebrate testing in this section of the Class A river should be performed to confirm compliance with quantitative and narrative standards.

b. The Class A Waters below Powerhouse.

i) Applicant's Macroinvertebrate assessment was made in the Class AA river section, a part of the Saco River that is "riverine" and physically different from the Class A "pond" below the turbine outlets. It cannot be determined whether this Class A segment meets river meet aquatic life criteria because there is no available and applicable data. DEP has discretion in interpreting results, but it cannot ignore an absence of data. If, as here, there is not supporting data the determinations and conclusions reached for this riverine segment are without basis.

ii) The appropriate Macroinvertebrate sampling protocols were ignored. The sonde was deployed near the bank in shallows instead of "*located in the middle 50% of the bank to bank width, or in an area with a flow regiment typical of the overall character of the stream segment.*"[1], location had "*"Rooted aquatic grasses were present at the sample site and the substrates were covered with filamentous algae."*[2] This describes what is commonly known as a "bank effect" which is to be avoided under DEP protocols. This is

important, since the reach used for the assessment is not representative of the Class A sections (which is a deep pool) as required.

iii) The Sonde was deployed outside of the Class A river section. The results show that dissolved oxygen was acceptable, but this is the Class AA part of the river not the Class A segment below the dam. The DO conditions in the ponded part of the river are unknown since this part of the river was not assessed.

iv) The sampling methodology should have done the following to assess Class A compliance below the powerhouse:

- Macroinvertebrate assessment must be done in the middle of the river in the Class A waters below the powerhouse. This is a deep pool (not a shallow rocky riffle - as was used). We know from experience that these ponded sites have poorer outcomes than stream riffles. The only way to conclude the state Class A water quality criteria are being met is to test according to DEP protocols and that was not done here.

- The DO assessments should be done at the same time at the same site so that consistent determinations and conclusions can be drawn on the basis of co-located data.

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[1] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 5.

[2] Initial Study Report, February 2019, page 2-16.

EXHIBIT 1 TO AFFIDAVIT OF MARK WHITING

Curriculum Vitae

Mark C. Whiting (retired biologist)
145 Gary Moore Road, Ellsworth, ME 04605
207-664-0928
Mark.C.Whiting@gms.com

EDUCATION

Oregon State University, Corvallis, OR
Ph.D. in Marine Ecology **1983**

Brigham Young University, Provo, UT
M.S. Botany with Chemistry Minor **1977**

Brigham Young University, Provo, UT
B.S. Zoology and Ecology **1975**

OTHER EDUCATIONAL EXPERIENCES

- Postdoctoral Research Associate, diatom and algae specialist, acid rain research in New England and California Sierra Nevada, U of Maine, Indiana U, and UC Santa Barbara **1983-1991**
- Summer intern, ecology of marine algae, Chesapeake Bay Center for Environmental Studies, Smithsonian Field Station **1977**

EMPLOYMENT HISTORY

Maine Dept. of Environmental Protection, Bangor **1998-2016**
Biologist with the Division of Environmental Assessment
Developed and managed a volunteer-based water quality monitoring program in the Maine salmon rivers to provide necessary background information to assist in salmon restoration, also co-managed DEP's volunteer river monitoring program (VRMP) for Maine, began liming salmon rivers to mitigate for acid rain in 2010

Maine Dept. of Environmental Protection, Bangor **1992-1998**
Environmental Specialist with the Bureau of Land and Water Quality, Division of Licensing and Enforcement

University of Maine at Machias **1991**
Assistant Professor, taught undergraduate chemistry labs

Eastern Maine Technical College, Marine Trades Center, Eastport **1990-1991**
Adjunct faculty, taught undergraduate classes in oceanography and marine biology

Maine Maritime Academy, Castine
Instructor, teaching undergraduate classes in oceanography and general college chemistry **1989-1990**

US National Park Service, Everglades National Park
Biologist, tagging sea turtles to assess population size, health and nesting success **1973**

Selected Publications: (monitoring, ecology and conservation)

Whiting, MC, JD Brotherson & SR Rushforth, 1978. Environmental interactions in summer algal communities in Utah Lake. Great Basin Naturalist 38: 32-41

Whiting, MC & CD McIntire, 1985. An investigation of the distributional patterns in the diatom flora of Netarts Bay, Oregon, by correspondence analysis. J Phycology 21 (4): 21-31

Whiting, MC & H Schrader, 19985. Late Miocene to Early Pliocene Marine Diatom and Silicoflagellate Floras from the Oregon Coast and Continental Shelf. Micropaleontology 31 (3): 249-270

Whiting, MC, DR Whitehead, RW Holmes & SA Norton, 1989. Paleolimnological reconstruction of recent acidity changes in four Sierra Nevada lakes. J Paleolimnology 2 (4): 285-304

Whiting, MC & E Linsey, 2006. Water Quality Summary for Kenduskeag Stream and Upper Watershed Tributaries. Maine DEP report DEPLW-0762 pp. 1-21

Whiting, MC & W Otto, 2008. Spatial and Temporal Patterns in Water Chemistry of the Narraguagus River: A Summary of Available Data from the Maine DEP Salmon Rivers Program. Maine DEP report DEPLW-0940 pp. 1-32

Whiting, MC, 2009. Penjajawoc Stream a Summary of Water Quality Data from the 2008 Field Season. Maine DEP report pp. 1-31

Whiting, MC, 2010. Katahdin Iron Works and its Effect on the Water Quality of the West Branch of the Pleasant River. Maine DEP report DEPLW-1172 pp. 1-23

Whiting, MC, 2015. Water quality survey of Maine salmon rivers: the 2015 field season, Downeast, the Union & the Aroostook Rivers. Mane DEP report, pp. 1-18

Whiting, MC, 2017. The Union River Turbidity Study in Relation to Graham Lake Level Management. A report to the Downeast Salmon Federation for relicensing of the Union R dams, FERC Hydroelectric project #2727

Whiting, MC, 2019. Maine Brook Trout and Water Quality. A report to the National Park Service, Acadia National Park

Whiting, MC & J Porada, 2020. Spat Boxes and Nursery Nets as Strategies for Enhancing Clam Harvest and Post-Harvest Recovery on Mudflats. Hancock County Soil & Water Conservation District report pp. 1-9

Signed at Ellsworth Maine, this 30 day of March 2022.

Mark Whiting

STATE OF MAINE

March 30, 2022

Personally appeared the above-named Mark Whiting, and made oath that the statements made by him in the above Affidavit are true and accurate and made on his personal knowledge, unless stated upon information and belief, in which case he believes them to be true.

A.K. SANKEY
Notary Public, Maine
My Commission Expires

Notary Public My Commission Expires: APRIL 01, 2027

Attachment B

Brookfield

Brookfield Renewable
Brookfield White Pine Hydro LLC
150 Main Street
Lewiston ME 04240

Tel 207.755.5600
Fax 207.755.5655
www.brookfieldrenewable.com

Exhibit B-1

March 12, 2021

Hiram Project
FERC No. 2530

Ms. Kathy Howatt
Hydropower Coordinator, Bureau of Land Resource Regulation
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333

VIA MDEP E-FILE & CERTIFIED MAIL

Subject: Hiram Hydroelectric Project (FERC No. 2530)
Clean Water Act Section 401 Water Quality Certification Application

Dear Ms. Howatt:

Brookfield White Pine Hydro, LLC (BWPH), licensee for the Hiram Hydroelectric Project (FERC No. 2530) (Project), herein provides an Application for Water Quality Certification (U.S. P.L. 92-500, Section 401) for the relicensing of the Hiram Project by the Federal Energy Regulatory Commission (FERC). The Project is located on the Saco River in the Towns of Hiram, Baldwin, Denmark, and Brownfield, in Oxford and Cumberland Counties, Maine. A check in the amount of $6880.80 made payable to the Treasurer, State of Maine is included with this application.

On November 20, 2020, BWPH filed a Final License Application (FLA) with the FERC for the Hiram Project. On January 11, 2021, the Commission issued its Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions (REA Notice).

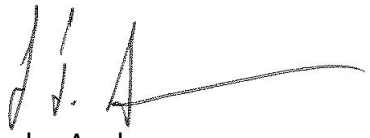
On June 1, 2020, the U.S. Environmental Protection Agency (EPA) released its Final Rule to streamline the Clean Water Act (CWA) Section 401 review. EPA's Final Rule was published in the Federal Register on July 13, 2020, and the effective date is September 11, 2020. The Final Rule requires an applicant to request a pre-filing meeting with the State agency at least 30 days prior to filing for certification (40 CFR § 121.4). BWPH submitted a request for a pre-filing meeting with MDEP on January 21, 2021.
On February 12, 2021, Maine Department of Environmental Protection (MDEP) met with BWPH via teleconference to discuss the Hiram Project application for Water Quality

Certification (WQC). MDEP and BWPH discussed the WQC application process, and verified the application content, electronic filing process, and application/permit fees. BWPH confirmed that as there were no additional information requests (AIRs) issued by FERC, that the only attachment to the WQC application would be the aforementioned FLA previously filed with FERC. MDEP noted that there was no need to refile another hard copy of the FLA with MDEP.

Accordingly, BWPH hereby files the enclosed WQC application for the Hiram Project. BWPH respectfully requests that MDEP provide a draft of the WQC to Brookfield for review before issuing the final WQC.

Please contact me should you have any questions at 207-755-5603 or at Luke.Anderson@brookfieldrenewable.com.

Sincerely,



Luke Anderson
Manager, Licensing
Brookfield White Pine Hydro

Enclosures: Water Quality Certification Application

Hiram Hydroelectric Project (FERC No. 2530)
Clean Water Act Section 401 Water Quality Certification Application

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Land Resource Regulation
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-7688

FOR DEP USE
ATS #_____
#L- _____
Fees Paid_____
Date Fees Received_____

APPLICATION FOR
WATER QUALITY CERTIFICATION
(U.S. P.L. 92-500, SECTION 401)

HYDROPOWER PROJECT LICENSING/RELICENSING ONLY

This form shall be used to request Water Quality Certification for the proposed FERC licensing or relicensing of an existing hydropower generating or storage project where no construction, reconstruction or structural alteration of project facilities which would affect water levels or flows is proposed.

All required fees must be paid before application processing will begin. Please contact the Department for current fee schedule information. Fees are payable to Treasurer, State of Maine.

APPLICANT INFORMATION

Name of Applicant: Brookfield White Pine Hydro LLC

Mailing Address: 150 Main Street

Lewiston, ME 04240

Name of Contact or Agent: Luke Anderson

Telephone: (207) 755-5603

PROJECT INFORMATION

Name of Project: Hiram Hydroelectric Project FERC No. 2530

Address (use "911" address, if available): 48 Hiram Dam Road Baldwin, ME 04041

Name of Waterbody Affected: Saco River

Municipality or Township: Hiram, Baldwin, Denmark, and Brownfield County: Oxford and Cumberland

GPS Coordinates, if known: 43°51'09.97"N, 70°47'48.56"W

REQUIRED INFORMATION

1. Provide all the information requested by this application form.

2. If applicant is a registered corporation, provide either a *Certificate of Good Standing* (available from the Secretary of State) or a statement signed by a corporate officer affirming that the corporation is in good standing.

3. A signed Certification of Publication and a completed Notice of Intent to File an application for Water Quality Certification.

NOTE: All supporting documents summarized above must be attached to this form and sent to the DEP Office listed below:

Department of Environmental Protection
Bureau of Land Resource Regulation
17 State House Station
Augusta, ME 04333
Tel: (207) 287-7688

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

DATE: March 12, 2021

Luke Anderson Digitally signed by Luke Anderson Date: 2021.03.12 07:30:47 -05'00'

SIGNATURE OF APPLICANT

Luke Anderson, Manager, Licensing

PRINTED NAME & TITLE

(IF SIGNATURE IS OTHER THAN APPLICANT, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY APPLICANT)

GENERAL INFORMATION

1. By submitting this application, an applicant requests Water Quality Certification pursuant to Section 401 of the Federal Clean Water Act for the continued operation of an existing hydropower generating or storage project under the terms of an initial or a new license from the Federal Energy Regulatory Commission. Certification must be obtained for any activity requiring a federal license or permit which may result in a discharge into the navigable waters of the United States.

2. The purpose of this application form is to obtain from the applicant a thorough description of project facilities and operation and the impacts of the continued operation of the project on water quality.

   The Department's Regulations provide that the applicant bears the burden of proof in the application process. This is the burden of presenting sufficient evidence for the Department to make the affirmative findings required by law regarding matters about which no questions are raised and the burden of presenting a preponderance of the evidence regarding matters about which questions are raised.

3. In order to grant certification, the Department must conclude that there is a reasonable assurance that the continued operation of a hydropower generating or storage project will not violate applicable Water Quality Standards. These standards have been established in the State's Water Classification Program (Title 38 MRSA Sections 464-469). These standards designate the uses and related characteristics of those uses for each class of water and establish water quality criteria necessary to protect those uses and related characteristics.

4. Any applicant for a FERC license must complete a three stage consultation process with appropriate state and federal agencies. The purpose of this process is to identify and analyze the potential environmental and socioeconomic impacts of a project.

   The consultation process requires an applicant to have either requested or obtained water quality certification at the time of filing with FERC. The process also requires that an applicant serve a copy of its FERC application, including any revisions, supplements or amendments thereto, on each of the agencies consulted.

FILING INSTRUCTIONS AND PROCEDURES

1. When filing, send an original paper copy plus one (1) electronic copy of a completed Application for Water Quality Certification to the Department, along with two (2) copies of the Application for Initial License or New License that has been or will be filed with FERC. The State filing can be made prior to or concurrent with the FERC filing.

2. The Department is required by law to assess fees for processing applications and for monitoring permit compliance. Application processing will not begin until all required fees have been paid. When filing, submit full fee payment as shown on the DEP fee schedule. Please make checks payable to: Treasurer, State of Maine.

3. A number of consulting agencies will be involved in the State review process of hydropower projects. Distribution of copies of the FERC application to these agencies may be coordinated by DEP or may be handled directly by the applicant. When filing, please notify the DEP staff to discuss distribution procedures.

4. Most information requested by this application form can be provided by making reference to the appropriate exhibit of the FERC license application. Space is provided on the form for such references.

5. Within 15 working days of receiving an application and all required fees, the DEP shall determine whether the application as filed is acceptable for processing.

6. Additional information may be required during the review process on any aspect of the project relating to compliance with applicable statutory criteria.

1. **NATURE OF ACTIVITY.** Check appropriate item:

_____ Application for Initial License.

X
_____ Application for New License (Relicense).

A COPY OF A COMPLETED FERC APPLICATION FOR LICENSE (THIRD STAGE CONSULTATION) MUST ACCOMPANY THIS FORM.

NOTE: A copy of any document revising, supplementing, amending, or correcting deficiencies in the application as originally filed with FERC must also be filed with D.E.P.

2. **EXISTING ENVIRONMENT**. Provide a description of the physical environment of the project site and its immediate vicinity. The project site includes all land and water areas affected by the project.

REFERENCE: FERC EXHIBIT(S) FERC License Application Exhibit E, Section 4.3

3. **PROJECT DESCRIPTION**. Provide a detailed description of the existing project. A hydropower project includes all powerhouses, dams, water conduits, transmission lines, water impoundments, roads, and other appurtenant works and structures that are part of the development. This description must include:

A. The physical composition, dimensions, and general configuration of all project structures;

B. The normal maximum surface area and elevation, gross storage capacity, and usable storage capacity of any impoundments;

C. The number, type, and rated capacity of any turbines or generators; and

D. The number, length, and voltage of any primary transmission lines.

REFERENCE: FERC EXHIBIT(S) FERC License Application Exhibit A

4. **PROJECT OPERATION.** Provide a description of project operation, to include:

A. The mode of project operation during low, mean, and high water years, including extent and duration of flow release and impoundment fluctuations;

B. An estimate of the dependable capacity and average annual energy production, in kilowatt hours, of the project;

C. An estimate of minimum, mean, and maximum flows, in cubic feet per second, at the project site, including a flow duration curve;

D. An estimate of the maximum and minimum hydraulic capacities, in cubic feet per second, of any powerplant; and

E. A statement of the manner in which the power generated at the project is utilized.

REFERENCE: FERC EXHIBIT(S) FERC License Application Exhibit B

5. **PROJECT PLANS.** Provide general design drawings showing all major project structures in sufficient detail to provide a full understanding of the project, including:
   A. Plans (overhead view);
   B. Elevations (front view); and
   C. Sections (side view).

REFERENCE: FERC EXHIBIT(S) FERC License Application Exhibit F

6. **PROJECT MAPS**. Provide maps of the project showing:

   A. The location of the project, including principal project structures and features, with reference to local geographic features; and

   B. A project boundary enclosing all principal project structures and features proposed to be licensed.

REFERENCE: FERC EXHIBIT(S) FERC License Application Exhibit G

7. **TITLE, RIGHT OR INTEREST**. The Department's Regulations require that any applicant must possess sufficient title, right or interest in all project lands and waters in order to have standing to seek a permit, license, or certification. Please complete the appropriate item(s) below establishing title, right or interest and attach a copy of the indicated document(s):
   _____ Deed.
   _____ Option to buy.
   _____ Lease.
   X_____ Valid FERC License (including all amendments/modifications).
   _____ Exercise of flowage rights through operation of the Mill Act (12 MRSA Section 651).
   _____ Exercise of eminent domain under FERC License.

8. **WATER QUALITY**. Provide a description of the impact of the project on water quality, including:

   A. A description of the applicable water quality standards and stream segment classification for the project impoundment and downstream waters, including a description of designated uses;

   B. A description of existing water quality in the project impoundment and downstream waters affected by the project, including a description of existing in-stream water uses;

   C. A statement of the existing measures to be continued and new measures proposed for the purpose of protecting and improving water quality, including measures for the mitigation of project impacts on the designated uses of project waters; and

   D. A description of any anticipated continuing impact on water quality from the continued operation of the project, including impacts on the designated uses of project waters.

9. **PUBLIC NOTICE**. The Department requires that an applicant provide public notice describing the location and nature of the activity proposed for approval. The public notice requirements that apply to this application are described in the Certification of Publication below, which must be signed and dated by the applicant or authorized agent.

   The following information must be submitted with this form:

   - A copy of a completed Notice of Intent to File.
   - A list of abutters to whom notice was provided. [For the purposes of public notice of this application, an "abutter" is any person who owns property that is both (1) adjoining and (2) within 1 mile of the delineated project boundary, including owners of property directly across a public or private right of way.]

CERTIFICATION OF PUBLICATION

By signing below, the applicant (or authorized agent) certifies that he or she has:

1. Published a Notice of Intent to File once in a newspaper circulated in the area where the project site is located, within 30 days prior to filing the application;

2. Sent a completed copy of the Notice of Intent to File by certified mail or Certificate of Mailing to abutters, as determined by local tax records or other means, within 30 days prior to filing the application; and

3. Sent a copy of the Notice of Intent to File by certified mail or Certificate of Mailing and filed a duplicate of this application with the town clerk of the municipality(ies) where the project is located, within 30 days prior to filing the application.

Luke Anderson Digitally signed by Luke Anderson Date: 2021.03.12 07:32:18 -05'00' — March 12, 2021

Signature of Applicant — Date

Luke Anderson, Manager, Licensing

Name and title of applicant

If signature is other than that of the applicant, attach letter of agent authorization signed by the applicant.

NOTICE OF INTENT TO FILE

MAINE WATER QUALITY CERTIFICATION APPLICATION

Please take notice that Brookfield White Pine Hydro LLC of 150 Main Street, Lewiston, Maine 04240, 207-755-5605, is intending to file an application with the Maine Department of Environmental Protection (MDEP) for a Water Quality Certification pursuant to the provisions of the Federal Clean Water Act, Section 401. The application is for the Federal Energy Regulatory Commission (FERC) relicensing for the continued operation of the Hiram Hydroelectric Project (FERC No. 2530) located on the Saco River in the towns of Hiram, Baldwin, Demark, and Brownfield, Maine under the terms of a new license from the FERC.

The application will be filed on or about March 11, 2021 and will be available for public inspection on the MDEP's Dams and Hydropower webpage, https://www.maine.gov/dep/land/dams-hydro/index.html . A copy of the application may also be seen at the municipal office in Hiram, Baldwin, Denmark and Brownfield, Maine.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the application is filed with the Department. Public comment on the application will be accepted throughout the processing of the application.

Written public comments may be sent to the Maine Department of Environmental Protection, Bureau of Land Resources,17 State House Station, Augusta, Maine 04333.

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Wed Mar 03 2021 10:33:32. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
BROOKFIELD WHITE PINE HYDRO LLC	19980126FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
04/27/1998	N/A	DELAWARE

Other Names	(A=Assumed ; F=Former)
FPL ENERGY MAINE HYDRO LLC	F

Clerk/Registered Agent

CORPORATION SERVICE COMPANY
45 MEMORIAL CIRCLE
AUGUSTA, ME 04330

Back to previous screen | New Search

Click on a link to obtain additional information.

List of Filings	View list of filings
Obtain additional information:	
Certificate of Existence (more info)	Short Form without amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or e-mail or visit

ABUTTER NOTICE

NOTICE OF INTENT TO FILE

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The Water Quality Certification application process requires advanced notice of the application to those landowners whose property abuts the Hiram Project, which is why you are receiving this Notice.

The application will be filed on or about March 11, 2021 and will be available for public inspection on the MDEP's Dams and Hydropower webpage, https://www.maine.gov/dep/land/dams-hydro/index.html. A copy of the application may also be seen at the municipal office in Hiram, Baldwin, Denmark and Brownfield, Maine.

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Written public comments may be sent to the Maine Department of Environmental Protection, Bureau of Land Resources, 17 State House Station, Augusta, Maine 04333.

Hiram Abutter Distribution List

Scott N. Adams
Marc R. Chretian
500 North Broadway
East Providence, RI 02914

Anderson Family Properties
c/o Brent Anderson
32 Weeman Road
W Baldwin, ME 04091

George Anderson & Sons, Inc.
83 Convene Road
Sebago, ME 04029

Alexander Harper Berkeley
Sarah Clarke Berkeley
215 Drinkwater Point Road
Yarmouth, ME 04096

Jonathan Bettencourt
15 Lynn End Road
Lynn, MA 01904

Gail P. Bizer
48 King Street
Hiram, ME 04041

Delmar Breslin
P.O. Box 82
Hiram, ME 04041

Bryant Pond Association
c/o Barbara Thompson
17 Aaron Drive
Hiram, ME 04041

Roy H. Butterfield
Lillian Y. Butterfield
73 Christian Row
Buxton, ME 04093

Peter T. Chipman
Giordana Mecagni
75 West Eagle Street
East Boston, MA 02128

James L. Drew
34 Main Street
Hiram, ME 04041

Howard Durgin
Cindy Durgin
92 Wilderness Lane
Hiram, ME 04041

Arthur A. Elder
Dennis Currier, Trustee H. Currier
17 Johnson Road
Saugus, MA 01906

William A. Flockton
4 Lancelot Court #19
Salem, NH 03079

David Foss
c/o Kevin D. Foss
P.O. Box 201
Hiram, ME 04041

Frances Small Heritage Trust, Inc.
P.O. Box 414
Limerick, ME 04048

Marcus Goforth
Lauri Goforth
1232 River Road
Hiram, ME 04041

David G. Golder heirs/devisees of
Elizabeth Anne Golder
P.O. Box 424
Standish, ME 04084-0424

Karen Golder
David G. Golder
357 King Street
Hiram, ME 04041

Goodale Properties, LLC
451 Newburyport Tpke
Rowley, MA 01969

John Gordon
27 Smith Street
Fryeburg, ME 04037

James Gott
Harriet Gott
P.O. Box 499
Kennebunkport, ME 04046

Arthur E. Hopkins
Martha Hopkins
32 Granite Street
N Attleboro, MA 02760-4106

James H. Lee
Heather W. Gagne
178 King Street
Hiram, ME 04041

Betsey N. Levesque
Roland O. Levesque
205 Bulls Ridge Road
So Kent, CT 06785

Libby Family Trust / Nicholas C Libby
8 Maple Street
Hiram, ME 04041

Jessica Madgey
6056 NW 40th Street
Coral Springs, FL 33067

Donald Mannett
Margo Mannett
45 Emery Street
Westbrook, ME 04092

Andrew H. Mansfield
Elizabeth J. Arthur heirs/devisees of
12 Main Street
Hiram, ME 04041

Gregory W. Miller
1851 Pequawket Trail
Hiram, ME 04041

James D. Moulton
818 Notch Road
Hiram, ME 04041

Susan Moulton
P.O. Box 57
Hiram, ME 04041

Ronald Nevers
P.O. Box 245
Hiram, ME 04041

Pageau ME Trust, 3/29/17
Terrance L. & Marilyn A.L. Pageau
18 Gerald Avenue
Randolph, MA 02368

Robert W. Parker heirs/devisees of
c/o Joyce Parker
P.O. Box 158
Brownfield, ME 04010

Christine R. Payne (Trustee)
Ruth Payne Irrevocable Trust
1912 Pequawket Trail
Hiram, ME 04041

Patricia Pitcher
P.O. Box 1061
Glen, NH 03838

Kevin N. Russell, Trustee
Kevin Russell, Trust of 2002
68 Belknap Point Road
Gilford, NH 03249

Ann L. & Richard Sampson
James E. & D. Leighton
P.O. Box 129
Hiram, ME 04041

Tracy Sanborn
Jody Deshaies
1695 Pequawket Trail
Hiram, ME 04041

Debra L. Searcy
1475 Pequawket Trail
Hiram, ME 04041

Kenneth D. Stevens
Martha A. Stevens
1713 Pequawket Trail
Hiram, ME 04041

George J. Stewart
4 Maple Street
Hiram, ME 04041

The Big Barn, LLC
34 Schoolhouse Road
Hiram, ME 04041

Town of Hiram
25 Allard Circle
Hiram, ME 04041

Lawrence E. Tuttle, Jr.
Joanne H. Tuttle
103 Hight Street
Ipswich, MA 01938-1235

Elanor Twitchell
P.O. Box 110
Hiram, ME 04041

John Wadsworth
Elizabeth Wadsworth
35 Rockcrop Way
Hiram, ME 04041

William E. White
Carol A. White
2723 Gentry Court
Santa Clara, CA 95050

Jan Williams
Sally Williams
P.O. Box 105
Hiram, ME 04041

William H. Young
P.O. Box 111
Hiram, ME 04041

Nicholas S. Zweig
26 Coates Lane
Bradford, MA 01835

PUBLIC NOTICES

Public Notice

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PUBLIC NOTICE PUBLIC NOTICE PUBLIC NOTICE PUBLIC NOTICE

YORK COUNTY PROBATE NOTICES

STATE OF MAINE
YORK COUNTY
PROBATE COURT
NOTICE TO CREDITORS
18-C M.R.S. §3-801(1)

The following Personal Representatives have been appointed in the Estates noted. The first publication date of this notice is **March 5, 2021**. If you are a creditor of an Estate listed below, you must present your claim within four months of the first publication date of this Notice to Creditors or be forever barred.

You may present your claim by filing a written statement of your claim on a proper form with the Register of Probate of this Court or by delivering or mailing to the Personal Representative listed below at the address published by the Personal Representative's name a written statement of the claim indicating the basis therefore, the name and address of the claimant and the amount claimed or in such other manner as the law may provide. See 18-C M.R.S. §3-804.

VIVIAN M. DAIGNAULT LAROCHELLE, late of Saco, deceased. February 8, 2021 Priscille S. Bilodeau of 25 Bayview Terrace Saco, ME, 04072 appointed Personal Representative, without bond.

STANLEY J. QUINLAN, late of Old Orchard Beach, deceased. February 8, 2021 Brendan M. Quinlan of 6 West Road, Rye, NH, 03870 appointed Personal Representative, without bond.

JACK EDWARD O'BRIEN, late of Saco, deceased. February 9, 2021, Patricia A. O'Brien of 510 Beechnut Drive, Blue Bell, PA 19422, appointed Personal Representative, without bond.

GENEVA J. PERKINS, late of York, deceased. February 9, 2021, Dianne K. Perkins of 276 Mountain Road, Cape Neddick, ME 03902, appointed Personal Representative, without bond.

JUNE L. NICKLESON, late of Kittery, deceased. February 9, 2021, William L. Nickleson of 41 Eliot Road, Kittery, ME 03904, appointed Personal Representative, without bond.

JANET H. CROOK, late of Kennebunk, deceased, February 9, 2021, Daniel C. Crook of 157 Clearview Drive, Arundel, ME 04046, appointed Personal Representative, without bond.

STEPHEN LAWRENCE PARKS, late of Kennebunk, deceased. February 9, 2021, Josephine P. Merryman of PO Box 284, Kennebunk, ME 04043, appointed Personal Representative, without bond.

LENA COMPAGNA, late of Biddeford, deceased. February 10, 2021, Norman Beaupre of 1 Huntington Common Drive, Kennebunk, ME 04043, appointed Personal Representative, without bond.

JACQUELINE DESROCHERS, late of Alfred, deceased. February 10, 2021, Jason D. Desrochers of 29 Spencer Knowles Road, Rowley, MA 01969 and Raymond R. Desrochers of PO Box 177, 75 Desrochers Road, Alfred, ME 04002, appointed Personal Representatives, without bond.

VIOLET A. NORTON, late of Kittery, deceased. February 10, 2021, Patrick D. Norton of 72 Washington Street, Lynn, MA 01902, appointed Personal Representative, without bond.

MICHAEL JOHN PORPER JR., late of North Berwick, deceased. February 11, 2021, Ashley Gross of 466 Lebanon Road, North Berwick, ME 03906, appointed Personal Representative, without bond.

BRUCE M. EMERY, late of Buxton, deceased. February 11, 2021, Claudia J. Treadwell of 856 Long Plains Road, Buxton, ME 04093, appointed Personal Representative, without bond.

JAMES R. JONES JR., late of Berwick, deceased. February 11, 2021, Sylnor B. Ocana of 14 Rochester Street, PO Box 238, Berwick, ME 03901, appointed Personal Representative, without bond.

DAMIAN C. ERICKSON, late of Lyman, deceased. February 11, 2021, Amanda L. Nightingale of 95 Duke Lane, Lyman, ME 04002, appointed Personal Representative, without bond.

MELANIE GAY BOUTWELL, late of Wells, deceased. February 11, 2021, Haylie Maude Gulino of 15 Friartuck Court, Merrimack, NH 03054, appointed Personal Representative, without bond.

MARJA MAHONEY, late of York, deceased. February 12, 2021, Mark Mahoney of 52 Scotland Bridge Road, York, ME 03909, appointed Personal Representative, without bond.

BARBARA A. MARTELL A/K/A BARBARA ANN MARTELL, late of Kittery Point, deceased. February 12, 2021, Robin J. Miller of 21 Tenney Hill Road, Kittery Point, ME 03905, appointed Personal Representative, without bond.

CHARLES T. POLLOCK, late of Saco, deceased. February 12, 2021, Charles L. Pollock of 51 Powsland Street, Portland, ME 04102, appointed Personal Representative, without bond.

ELAINE R. HALEY, late of Saco, deceased. February 12, 2021, Brian R. Haley of 568 Ferry Road, Saco, ME 04072 and Joyce D. Haley of 48 Locke Street, Saco, ME 04072, appointed Co-Personal Representatives, without bond.

ALVIN ROSS ANDERSON, late of Buxton, deceased. February 16, 2021, Siri Blanchette of 39 Old Post Road, York, ME 03909, appointed Personal Representative, without bond.

LINDA W. MADDEN, late of Saco, deceased. February 16, 2021, Michael A. Madden of 35 Glenhaven Circle East, Saco, ME 04072, appointed Personal Representative, without bond.

LARRY ARTHUR ALLARD JR., late of Sanford, deceased. February 16, 2021, Morgan Ashley Gregoire of 1613 US Route 1, Freeport, ME 04032, appointed Personal Representative, without bond.

MARION E. BARON, late of Sanford, deceased. February 16, 2021, Michael J. Baron of 8245 Metropolitan Boulevard, Olmstead Falls, OH 44138 and Lisa A. Baron of 438 Horace Mills Road, Sanford, ME 04073, appointed Co-Personal Representatives, without bond.

KEITH S. WHITMORE, late of Saco, deceased. February 16, 2021, Douglas K. Whitmore of 156 High Street, Kennebunk, ME 04043, appointed Personal Representative, without bond.

OSCAR BERNIER, late of Sanford, deceased. February 16, 2021, Liliane M. Lovejoy a/k/a Lillian Lovejoy of 49 Kimball Street, Sanford, ME 04073, appointed Personal Representative, without bond.

YOLA C. RICHARDS, late of Biddeford, deceased. February 17, 2021, Maureen D. Sanford of 6 Becks Lane, Freeport, ME 04032, appointed Personal Representative, without bond.

ROBERT D. CARR, late of York, deceased. February 17, 2021, John Carr of P.O. Box 711, North Berwick, ME 03906 and David Carr of 12 Roosevelt Road, Dover, NH 03820, appointed Co-Personal Representatives, without bond.

CLIFFORD A. WESTCOTT, late of Wells, deceased. February 17, 2021, Clifford A. Westcott of 82 Fisherville Road, Lot 14, Concord, NH 03303, appointed Personal Representative, without bond.

ALICE I. BUCHANAN, late of Kittery, deceased. February 17, 2021, Thomas Buchanan of 1011 Seaside Drive, N. Myrtle Beach, SC 29582, appointed Personal Representative, without bond.

RICHARD L. CHALK, late of Sanford, deceased. February 19, 2021, Kelly L. Page of 163 Milton Mills Avenue, Sanford, ME 04073, appointed Personal Representative, without bond.

ROBERT J. GIROUX, late of Saco, deceased. February 19, 2021, Deborah Jean Giroux of 2W Labonte Avenue, Saco, ME 04072, appointed Personal Representative, without bond.

BARBARA W. MANNING, late of Saco, deceased. February 19, 2021, Audrey M. Northway of 4 Anthony Estate, Saco, ME 04072, appointed Personal Representative, without bond.

THERESA N. L'HEUREUX, late of Sanford, deceased. February 19, 2021, Mark N. L'Heureux of 1486 Main Street, Sanford, ME 04073 and Steven R. L'Heureux of 4 Cider Hill Road, Springvale, ME 04083, appointed Co-Personal Representatives, without bond.

PAMELA ANN MULLEN, late of Saco, deceased. February 19, 2021, Tamara H. Bennett of 16 Sunset Road, Scarborough, ME 04074, appointed Personal Representative, without bond.

SHIRLEY L. LIBBY, late of Buxton, deceased. February 19, 2021, Tracy Johnson of PO Box 116, Hollis Center, ME 04042, appointed Personal Representative, without bond.

CHARLES ALLEN FOEHL A/K/A C. ALLEN FOEHL, late of Kennebunkport, deceased. February 19, 2021, Charles A. Foehl IV of 254 Clifton Street, Portland, ME 04103, appointed Personal Representative, without bond.

DAVID F. TOTTE, late of Shapleigh, deceased. February 19, 2021, Jill Cahoon f/k/a Jill Eastman of 32 Trent Road, Hooksett, NH 03106, appointed Personal Representative, without bond.

THOMAS P. DONOVAN, late of Saco, deceased. February 19, 2021, Mary E. Donovan of 31 Lewis Lane, Saco, ME 04072, appointed Personal Representative, without bond.

MARLENE MARY MOULEN, late of Biddeford, deceased. February 19, 2021, Sharlene M. Jemery of PO Box 632, Alfred, ME 04002, appointed Personal Representative, without bond.

FREDERICK J. P. FOURNIER a/k/a FRED J. PHILIP FOURNIER, late of Wells, deceased. February 22, 2021, Suellen Goodman of 17 Water Street, #10, Kennebunk, ME 04043, appointed Personal Representative, without bond.

JUNE STEWART MARSTON, late of Saco, deceased. February 16, 2021, Paul R. Dionne of 465 Main Street, Suite 201, Lewiston, ME 04240-6738, appointed Personal Representative, without bond.

ERNEST L. L'HEUREUX A/K/A ERNEST LIONEL L'HEUREUX, late of Saco, deceased. February 22, 2021, Michael L'Heureux of 1 Woodland Avenue, Old Orchard Beach, ME 04064, appointed Personal Representative, without bond.

ROBERT T. WEBBER, late of Cape Neddick, deceased. February 16, 2021, Jason M. Webber of 30 Pine Hill Road, Cape Neddick, ME 03902, appointed Personal Representative, without bond.

BERTRAND WILLIAM UPTON, late of Kittery, deceased. February 16, 2021, Jenny Kronholm of P.O. Box 454, Searsport, ME 04974 and Gloria J. Yanni of 27 Danielle Drive, Topsham, ME 04086, appointed Personal Representatives, without bond.

COREY S. KRAMER, late of Kennebunkport, deceased. February 24, 2021, Jodi L. Kramer of 29 Michaels Way, Kennebunkport, ME 04046, appointed Personal Representative, without bond.

DEBORAH JENSEN, late of Kittery, deceased. February 23, 2021, Alexandria Kenney of 22 Chestnut Street, Rochester, NH 03867, appointed Personal Representative, without bond.

MARY ELAINE MARINI, late of Wells, deceased. February 25, 2021. Barbara Fraser of 163 Pondview Road, Weare, NH 03281, appointed Personal Representative, without bond.

PATRICIA C. DOWNING, late of Saco, deceased. February 25, 2021, Kathryn Foran of 33 Hillview Avenue, Saco, ME 04072, appointed Personal Representative, without bond.

RAYMOND A. HAYES, late of Kennebunk, deceased. February 25, 2021, Tambre Daney of 54 Cole Road, Kennebunk, ME 04043, appointed Personal Representative, without bond.

EARL H. REED, late of Sanford, deceased. February 25, 2021, Elaine M. Titherington of 177 Shapleigh Corner Road, Shapleigh, ME 04076, appointed Personal Representative, without bond.

FRANCIS G. MCAULIFFE, late of Wells, deceased. February 26, 2021, Karen A. Robertson of 11 Riverbend Road, Wells, ME 04090, appointed Personal Representative, without bond.

ALAN H. FRIOT, late of Wells, deceased. February 26, 2021, Paul H. Friot of 101 Park Street, Ayer, MA 01432, appointed Personal Representative, without bond.

MARY FIELD, late of Kennebunk, deceased. February 26, 2021, Stewart C. Field of 7 Wild Briar Drive, Saco, ME 04072 and Robert J. Field of 1503 Lords Court, Wilmington, MA 01887, appointed Co-Personal Representatives, without bond.

DENISE M. VERMETTE, late of Sanford, deceased. February 26, 2021, Jeffrey A. Vermette of 20 Anthoine Road, Windham, ME 04062, appointed Personal Representative, without bond.

ALBERT C. PEASE, late of Buxton, deceased. March 1, 2021, Kathryn Hanna of 32 Spring Street, Buxton, ME 04093, appointed Personal Representative, without bond.

BARBARA A. ELKINS, late of Kennebunk, deceased. March 1, 2021, Joan S. Elkins of PO Box 238, Kennebunk, ME 04043, appointed Personal Representative, without bond.

ANTHONY L. GORDON, late of Biddeford, deceased. March 1, 2021, Rebecca J. Sevigny of PO Box 102, East Waterboro, ME 04030, appointed Personal Representative, without bond.

NANCY E. HUME, late of Ogunquit, deceased. February 23, 2021, Marjorie Kane of P.O. Box 1596, Ogunquit, ME 03907, appointed Personal Representative, without bond.

Dated: March 2, 2021
Carol J. Lovejoy
Register of Probate

NFL NOTEBOOK

Chiefs in salary cap squeeze

Cutting starting tackles Eric Fisher and Mitchell Schwartz saves about $18.3 million and allows the Chiefs to restructure other contracts.

Associated Press

KANSAS CITY, Mo. — The Kansas City Chiefs released starting offensive tackles Eric Fisher and Mitchell Schwartz on Thursday as they sought to squeeze under the salary cap.

Those moves will provide another obstacle in their quest to upgrade an offensive line ransacked by the Tampa Bay Buccaneers in the Super Bowl.

The Chiefs were more than $22 million over the cap. The release of Fisher and Schwartz saves about $18.3 million, leaving them able to restructure other contracts – and potentially extend players – and create enough financial wiggle room to maneuver in free agency.

TEXANS: Coach David Culley reiterated that the team has no intention of trading Deshaun Watson despite the star quarterback's request to be dealt.

Culley, hired in January to replace Bill O'Brien, was asked more than a half-dozen times about Watson's future with the team. Every time he made it clear he expects Watson to lead his team this season.

"We are very committed to Deshaun as our quarterback," Culley said. "He is our quarterback. He's the only guy we got under contract at this time right now."

■ Running back Mark Ingram has agreed to a one-year contract with the Texans, a person familiar with the deal told The Associated Press.

SAINTS: New Orleans released starting cornerback Janoris Jenkins in yet another cost-cutting move.

BILLS: Buffalo re-signed linebacker Matt Milano to a four-year contract, less than a week before the starter was eligible to become a free agent.

UMAINE

Continued from **Page B14**

The Black Bears expect to score like they have all season, when they led the league in points (66.5 per game), shooting (42.8 percent) and 3-point shooting (33.1 percent), as opposed to the woeful 30.6 and 17.9 shooting percentages it had during the first seven quarters at Stony Brook in mid-February.

That led to a 59-54 loss and a nine-point hole entering the fourth quarter of the second game, in which Maine pulled out 54-49 victory thanks to a 24-10 advantage in the final 10 minutes.

"We had two tough games against them," Saar said. "Something that we learned we should improve is executing on offense.

"Of course we need to do both, offense and defense, but if we execute on offense and defense we should be in good shape."

This is the sixth straight season Maine has qualified for the America East championship game.

Last year's game, scheduled to be played at Stony Brook, was canceled after the coronavirus pandemic shut down the NCAA tournament.

Maine has won the past two title games played, beating Hartford in 2018 and 2019. Maine is looking for its 10th conference title.

Stony Brook, in its 20th season in the league, is looking for its first America East title.

The Seawolves are known for their stingy defense, ranking second nationally in points allowed per game at 50.2. Maine is sixth-best, allowing 52.2 points per game.

"We played two great games with Maine here in the regular season so we're excited about the matchup," said Stony Brook Coach Caroline McCombs.

"Look, Stony Brook is a great defensive team. I also think we missed shots," said Maine Coach Amy Vachon, who is 11-1 in America East playoff games.

"(Senior guard) Kelly Fogarty had two wide-open shots where she literally hit the side of the basket. I don't think I've ever seen that girl do that."

Maine went to a full-court press in the fourth quarter of its win at Stony Brook, forcing three straight turnovers that led to a 6-0 run to tie the game, 41-41.

"We started pressing hard and that was the turning point," Vachon said.

Maine pressed Albany for the full 40 minutes in its 67-47 semifinal victory on Sunday. Vachon hinted Maine might use the same tactic against Stony Brook.

"I think our press helps a lot," Millán said. "We don't get a steal all the time but we can get them to start their offense with 12, 14 seconds left on the shot clock."

On Wednesday, Millán was named one of five finalists for the national 2021 Becky Hammon Mid-Major Player of the Year Award. While she is the game's star attraction, both teams feature a number of players who can do damage.

Stony Brook had seven players with seven or more points in its 75-55 America East semifinal win, four in double figures.

That was way too much for UMass-Lowell to handle, said junior guard Anastasia Warren.

"They don't know who to guard, so we're going to make plays and somebody's going to end up open and knock down the shots," Warren said in the postgame Zoom press conference.

Point guard Asiah Dingle, a transfer from Kent State, leads the team with 11.2 points per game. Warren (10.1 ppg, team-high 24 3-pointers) and 6-foot for Stony Brook, adding tenacity on the offensive glass with over six points and nearly five rebounds per game.

Warren, Pagan, and defensive stopper Hailey Zeise and America East Sixth Player of the Year McKenzie Bushee are holdovers from last year's 28-3 team.

Last season against Maine, Pagan scored 26 points (on 13-of-14 shooting) in a 73-69 win and 15 points in a 64-62 overtime loss at the Cross Insurance Center in Bangor.

Maine also has multiple scoring threats in sophomore guard Anne Simon (12.8 points per game), four-year starting point guard Saar (9.7 ppg), and senior post player Maeve Carroll (10.5 ppg).

Simon and Saar join Millán and Fogarty as threats from behind the arc.

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NOTES

Continued from **Page B14**

point guard Mikenzie Melendez running the show and sophomore Jess Dow adding scoring depth, the Trojans are nicely set up for the future.

"We'll take what we learned this season and build on it in the summertime," said Marston.

There were many things that stood out this winter. Among them:

■ The Yarmouth girls were 9-0 entering their final two games against Class A South power Greely (Thursday and Saturday). Yes this was a team that reached the Class B South finals a year ago, and a had a good core returning. But they defeated Class A Brunswick twice and Class AA South Portland.

"You've got to give our kids a lot of credit. They knew there would be no tournament going into it," said Coach David Cousins. "But that gave them the incentive to say, 'Let's prove, tournament or no tournament, we can compete.' It would have been easy to pack it in."

Seniors Margaret McNeil and Calin McGonagle and junior Katelyn D'Appolonia have been the leaders, but Cousins said this team displays a balance that is hard to defend. "Everyone is contributing in almost every facet of the game," he said.

■ Milestones were reached.

In this truncated season, eight girls and five boys statewide have gone over the 1,000-point mark and Parker Desjardins of Forest Hills incredibly went over 2,000 points.

In addition, Archibald, a finalist for Miss Maine Basketball, achieved a rare, rare feat of going over 1,000 points and 1,000 rebounds.

"Those were definitely moments to remember," she said. "It was a great feeling and my teammates and coaches made it so special for me."

Thornton Academy senior Payton Jones, a finalist for Mr. Maine Basketball, went over the milestone this week, becoming just the second Trojan boys' player to go over 1,000 points, joining the great Bob Warner.

"We were just taking things game by game," said Jones. "But having a shortened season, yes it was nice to have a milestone like that, especially not knowing before if we were even going to play."

The list grew on Thursday night. Old Orchard Beach senior guard Shani Plante scored 38 points against Waynflete to give her 1,003 for her career.

■ The Falmouth and York boys are still pretty good.

The finalists in last year's Class A South championship game (won by York) suffered big graduation losses. But Falmouth finished 7-1 and York was 8-1 going into games Thursday and Friday.

"The kids have been great, they've gotten on board with what we wanted to do, they're working hard, and we have great team chemistry," said York Coach Jerry Hill, who didn't meet his players until the very first day of tryouts.

He credits senior leadership – Teagan Hynes, Riley Higgins, Evan Bourgoin, Alex Neilson, Josh Gennaro and Alex Hames – for the success. He noted that Higgins visited the University of Maine campus on Wednesday and still returned to practice. "That says a lot about this team," said Hill.

Falmouth had its star players in juniors Brady Coyne and Jack Stowell, but also relied on strong senior leadership.

"The older kids, the seniors, did a great job mentoring the younger kids," said Coach Dave Halligan, 69, who plans to return next year. "They showed them, 'This is why you have to practice, this is why we do things, this is how we do things.' They were like coaches on the court."

Halligan said his players are already looking ahead. When they returned to Falmouth Wednesday night after their final game, and after uniforms had been collected, no one wanted to leave.

"They were milling around and didn't want to go home," said Halligan. "They were talking about next year. And that's a good sign."

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a day ago · 3 min read

Intent to file - Hiram Project Public Notice

NOTICE OF INTENT TO FILE
MAINE WATER QUALITY CERTIFICATION APPLICATION

Please take notice that Brookfield White Pine Hydro, LLC of 150 Main Street, Lewiston, Maine 04240, 207-755-5605, is intending to file an application with the Maine Department of Environmental Protection (MDEP) for a Water Quality Certification pursuant to the provisions of the Federal Clean Water Act, Section 401. The application is for the Federal Energy Regulatory Commission (FERC) relicensing for the continued operation of the Hiram Hydroelectric Project (FERC No. 2530) located on the Saco River in the towns of Hiram, Baldwin, Demark, and Brownfield, Maine under the terms of a new license from the FERC.

The application will be filed on or about March 11, 2021 and will be available for public inspection on the MDEPs Dams and Hydropower webpage. A copy of the application may also be seen at the municipal office in Hiram, Baldwin, Denmark and Brownfield, Maine.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the application is filed with the Department. Public comment on the application will be accepted throughout the processing of the application.

Written public comments may be sent to the Maine Department of Environmental Protection, Bureau of Land Resources, 17 State House Station, Augusta, Maine 04333.

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12/22/1982
ORDER ISSUING NEW LICENSE

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Central Maine Power Company) Projects Nos. 2530-001 and 2530-002

ORDER AMENDING LICENSE AND ISSUING NEW MAJOR LICENSE

(Issued December 22, 1982)

Central Maine Power Company (CMP) filed in December 1981, two applications relating to the Hiram Project No. 2530. One application seeks to amend the license for Project No. 2530 by accelerating its expiration date. The other application seeks a new license for the project under Part I of the Federal Power Act (Act), including the installation of 8.5 MW of additional capacity.

In view of the additional capacity proposed to be installed, CMP has requested a new 50-year license term. CMP also requested that the expiration date of its original license coincide with the effective date of a new license. 1/

The project is located on the Saco River, a navigable waterway of the United States, in Cumberland and Oxford Counties, Maine. 2/

Notice of the application was published on February 4, 1982, and comments have been received from interested Federal, State, and local agencies. No protests or petitions to intervene have been received, and none of the agencies objected to issuance of the license. The significant concerns of the commenting agencies are discussed below.

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 18 C.F.R. §375.308 (1982), FERC Statutes and Regulations ¶30,238. This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. §385.1902, FERC Statutes and Regulations ¶29,052, 47 Fed. Reg. 19014 (1982). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act. Filing an appeal does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically directed by the Commission.

2/ Central Maine Power Co., 14 FPC 839,840 (1955).

Project Description and History

The existing Hiram Project, originally built with its present configuration in 1917, was licensed by the Commission on November 19, 1970, with an effective date of July 1, 1955. The existing project consists of: (1) a 249-foot long concrete overflow dam with a maximum height of 30 feet with 4.66-foot high hinged steel flashboards; (2) a 102-foot long gate section integral with the dam containing a deep sluice gate, a log sluice gate, a trash sluice and a Taintor gate; (3) a 25-foot wide, 26.9-foot high intake section integral with the dam; (4) an 85-foot long timber bulkhead section at the east abutment with a maximum height of 26.9 feet; (5) a 255-acre reservoir with a usable storage capacity of 572-acre feet at elevation 349.0 feet (U.S.G.S.); (6) a 427-foot long, 11-foot diameter wood stave penstock; (7) a powerhouse containing a single 2.4 MW turbine-generator; (8) a 3,000 kVA, 3 phase, 2.3/34.5-kV step-up transformer; and (9) appurtenant facilities.

CMP proposes to install, under the new license, a new intake structure, trash rack and stop log slots in place of the existing timber bulkhead structure, an additional 330-foot long, 14-foot diameter steel or fiberglass penstock and a powerhouse containing a new turbine-generator unit with a total rated capacity of 8.5 MW to be located adjacent to the existing powerhouse and utilizing the existing dam and reservoir. The redeveloped project would generate an additional 32.6 million kWh annually saving the equivalent of 52,800 barrels of oil or 14,900 tons of coal. Energy generated at the project would continue to be distributed to customers. A more detailed project description is contained in Ordering Paragraph (C).

Safety and Adequacy

The staff of the New York Regional Office inspected the project on August 19, 1981, and concluded that no conditions were observed that would adversely affect the safety of the project.

The Hiram Project dam is a low hazard dam. Staff analysis concludes that should the dam fail during extreme flood conditions it would not increase flood flows sufficiently to endanger downstream life and property. The proposed modifications to the project would have negligible effect on the stability of the project structures. It is concluded that the project, under the conditions of this license, is safe and adequate.

Project Economics

The staff has analyzed the economic feasibility of the installation of additional equipment at the Hiram Project. The annual cost of energy produced at the project, in its first year of full operation,

will be less than equivalent oil-fired generation. It is concluded that the proposed project redevelopment is economical and in the public interest.

License Term

Along with the application for new license, CMP has filed an application to amend its existing license for the Hiram Project to advance the expiration date to coincide with the relicensing of the project. Applicant has requested a new 50-year license term. 3/

If total redevelopment was proposed to take place, including complete replacement of project works, a 50-year term would be appropriate, as was done with the CMP's Brunswick-Topsham Project No. 2284. 4/ However, in this application, one additional turbine-generator unit and a new penstock and powerhouse addition are proposed to be installed adjacent to the existing powerhouse utilizing the existing dam. The proposed scale of development is considerably less than that which would warrant a full 50-year term. Therefore, pursuant to the Commission's policy for relicensing projects involving moderate redevelopment, 5/ this license term will be for a period of 40 years.

3/ CMP's application for a new license was filed concurrently with its application to amend the existing license (by advancing the expiration date). The application for amendment was "made contingent upon receipt of a satisfactory (new) license." Despite this, the application has been processed. Public notice of the application for new license has been given and competing applications invited. There were no competing applications, recommendations for Federal takeover or any opposition to the proposed redevelopment. In view of this and of the conclusion that the amendment and new license are in the public interest, it is appropriate at this time to act on the application. Processing such a contingent application is consistent with the Commission's decision in Central Maine Power Co., 6 FERC ¶61,122 at n.6 (February 9, 1979). In that order the Commission issued a license based on a similar contingent application but expressly reserved the question of whether such contingent applications are proper. In Niagara Mohawk Power Corp., 20 FERC ¶61,454 (September 30, 1982), issued after CMP's application here had been accepted and processed, the Commission resolved the question and determined that such contingent applications will not be accepted.

4/ See Central Maine Power Company, 6 FERC ¶61,122 (February 9, 1979).

5/ See Montana Power Company, 56 FPC 2008 (1976).

It is concluded that it is in the public interest and consistent with the provisions of the Federal Power Act to amend the license for Project No. 2530 by advancing its expiration date as described above.

Recreation

The Maine Department of Conservation (MDC), The U.S. Department of the Interior (Interior), and the Maine Department of Environmental Protection (DEP) recommended that CMP ensure that existing recreational uses of the project area not be interrupted or jeopardized during and after project expansion. Interior also recommended that the Applicant explain why a camping and boat launching site on the reservoir, and a picnic area below the dam, apparently have been discontinued as public recreational areas.

CMP responded that recreational use of the area would not be affected during construction, and that public access to the Nature Study Area and the canoe portage would be maintained. CMP indicated that the former camping and boat launching area on the reservoir had been maintained by the town of Hiram, but was abandoned by the town after severe abuse and vandalism. It is not clear whether the boat ramp remains open for public use; however, the 1981 Form 80 for the project still lists it as existing. The picnic area below the dam is currently maintained as a scenic highway rest stop by the Maine Department of Transportation.

The Report on Recreational Resources is approved. This will ensure that CMP would maintain the canoe portage and access to the Nature Study Area during and after project construction. Because of the apparent discrepancy as to the continuing availability of the boat ramp for public use, Article 33 requires CMP to file, within 6 months of the date of issuance of the license, a report on the current state of repair of the boat ramp and camping area, and an assessment of the need for operation and/or redevelopment of these facilities for public use. In addition, CMP would be required to obtain and file with the report, comments on the report from the Town of Hiram and other appropriate agencies.

Minimum Flows

The MDC, U.S. Environmental Protection Agency (EPA), Interior, and the DEP recommended that a continuous minimum flow be established downstream from the project, and that a study be conducted to determine the appropriate flow level. EPA recommended the 7Q10 flow (175 cfs); Interior recommended an interim flow of 416 cfs; and DEP recommended in its order issuing a Great Ponds Alteration permit and Water Quality Certification, flows ranging from 175 to 460 cfs, depending on inflow to the project.

CMP has agreed to provide the flows recommended by DEP, with deviations allowed for unusual operating conditions, and to conduct minimum flow studies.

Articles 34 and 35 provide for an interim continuous minimum flow equal to that agreed to by CMP, and a minimum flow study to determine long-term flows needed at the project.

Environmental Impacts

Construction of the project expansion would result in the disturbance or excavation of about 1.13 acres of land in the immediate vicinity of the project, which could result in short-term increases in sedimentation and turbidity in the Saco River. Most of the construction, however, would occur "in the dry" behind cofferdams. The reservoir would be drawn down for a short period to allow installation and removal of the cofferdam, and an area of the tailrace would be excavated in the vicinity of the new generating unit. Impacts resulting from construction would be temporary in nature. Operation of the expanded project with continuous minimum flow, which had not previously been provided, would have a beneficial impact on downstream fish and wildlife resources. No federally-listed threatened or endangered species would be affected by the project. For these reasons and based on the record including agency comments and the staffs independent analysis it is concluded that issuance of this license is not a major Federal action significantly affecting the quality of the human environment.

There are no architectural, archeological, or historical sites or structures listed on the National Register of Historic Places within the vicinity of the project.

In accordance with standard Commission practice, 6/ Article 29 of this license also requires cultural resources protection measures in the event of any future construction or development at the project.

Other Aspects of Comprehensive Development

The "Planning Status Report, Water Resources Appraisals for Hydroelectric Licensing, Presumpscot, Saco, Piscataqua River Basin" discusses existing water resources developments and reconnaissance level plans and studies of possible future developments within the Saco River Basin. None of the potential

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6/ See S. D. Warren, 10 FERC ¶61,151 (February 19, 1980).

developments in the basin would effect the Hiram Project. The project, as redeveloped, would develop all of the head and flow of the Saco River at the site that is practical. It is concluded that, as conditioned in this license, Project No. 2530 is best adapted to a comprehensive plan for development for the Saco River basin for beneficial public uses and that issuance of this license is in the public interest.

Federal Takeover

Section 14 of the Federal Power Act reserves to the United States the right to take over a non-publicly owned project upon expiration of the license, after paying the Licensee's net investment in the project, not to exceed the fair value of the property taken, plus any severance damages. No Federal department or agency, state, or municipality has recommended takeover or redevelopment of the project by the United States or any other entity. The project is not in conflict with any project that has been authorized or is under study by the United States. There appears to be no reason why Federal takeover of the project would better serve the public interest than would issuance of this license. Thus, Federal takeover will not be recommended.

It is ordered that:

(A) The current license for the Hiram Project No. 2530 is amended by changing its expiration date from December 31, 1993, to the last day of the month preceding the month in which this order is issued.

(B) A new license is issued to Central Maine Power Company (Licensee) of Augusta, Maine, under Part I of the Federal Power Act (Act), for a period of 40 years effective the first day of the month in which this license is issued, for the redevelopment and continued operation and maintenance of the Hiram Project No. 2530, located in Cumberland and Oxford Counties, Maine, on the Saco River, a navigable water of the United States. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this licnese, and subject to the regulations the Commission issues under the provisions of the Act.

(C) The Hiram Project No. 2530 consists of:

(1) All lands, to the extent of the Licensee's interests in those lands, constituting the project area and enclosed by the project boundary. The project area and boundary are shown and described by certain exhibits that form part of the application for license and that are designated and described as:

Exhibit G	FERC No. 2530-
Sheet 1	15
Sheet 2	16
Sheet 3	17
Sheet 4	18

(2) Project works consisting of: (a) a 249-foot long concrete overflow dam with a maximum height of 30 feet with 4.66-foot high hinged steel flashboards; (b) a 102-foot long gate section integral with the dam containing a deep sluice gate, a log sluice gate, a trash sluice and a Taintor gate; (c) a 25-foot wide, 26.9-foot high intake section integral with the dam; (d) an 85-foot long trashrack, intake and stop log structure; (e) a 255-acre reservoir with a usable storage capacity of 572-acre feet at elevation 349.0 feet (U.S.G.S.) at 2 feet of drawdown; (f) a 427-foot long, 11-foot diameter wood stave penstock and a 330-foot long, 14-foot diameter penstock; (g) a powerhouse containing two turbine generators with a total rated capacity of 10.9 MW; (h) the 300-foot long, 2.4 kV generator leads and facilities connecting to the 3.9 MVA transformer; (i) the 3.9 MVA, 2.4/36.3 kV transformer; (j) the 250-foot long, 15 kV generator leads; (k) the 10.5 MVA, 12.47/34.5 kV transformer; and (l) appurtenant facilities.

The location, nature, and character of these project works are generally shown and described by the exhibits cited above and more specifically shown and described by the exhibits cited above and more specifically shown and described by certain other exhibits that also form a part of the application for license and that are designated and described as:

Exhibit F	FERC No. 2530-
Sheet 1	9
Sheet 2	10
Sheet 3	11
Sheet 4	12
Sheet 5	13
Sheet 6	14

Exhibit A (Section 1.5); five typewritten pages, "General Description and Specifications of Existing Equipment and Appurtenances.

Exhibit A (Section 2.4); one typewritten page, "General Descriptions of Mechanical, Electrical and Transmission Equipment and Appurtenances - New Development."

Exhibit E (Section 5); three typewritten pages, "Recreational Resources," and the Exhibit E Sheet 1 drawing (FERC No. 2530-19).

(3) All of the structures, fixtures, equipment, or facilities used or useful in the operation or maintenance of the project and located within the project boundary, all portable property that may be employed in connection with the project, located within or outside the project boundary, as approved by the Commission, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(D) Exhibits A (Sections 1.5 and 2.4), E (Section 5), F and G, designated in ordering paragraph (C) above, are approved and made a part of the license.

(E) This license is also subject to the terms and conditions set forth in Form L-4 (Revised October 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting Navigable Waters of the United States," attached to and made a part of this license. The license is also subject to the following additional articles.

Article 29. Prior to the commencement of any construction or development of any project works or other facilities at the project, the Licensee shall consult and cooperate with the State Historic Preservation Officer (SHPO) to determine the need for, and extent of, any archeological or historic resource surveys and any mitigative measures that may be necessary. The Licensee shall provide funds in a reasonable amount for any such activity. If any previously unrecorded archeological or historical sites are discovered during the course of construction, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensee shall consult with the SHPO to develop a mitigation plan for the protection of significant archeological or historic resources. If the Licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historic work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

Article 30. The Licensee shall pay the United States the following annual charge, effective the first day of the month in which this license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 14,500 horsepower.

Article 31. Pursuant to Section 10(d) of the Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year under the license, the amount of that deficiency shall be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock shall be their respective weighted average costs for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 32. (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission

approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

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

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

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

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

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

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

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

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

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

Article 33. Licensee shall, in consultation with the Town of Hiram, Maine, and appropriate state and Federal agencies, prepare a report on the condition of the boat ramp and camping area (formerly operated by the Town of Hiram), and an assessment of the need for and feasibility of the operation and/or redevelopment of these facilities for public use. Within 6 months from the date of issuance of this license, the Licensee shall file with the Commission the report as described above, including copies of comments on the report received from the Town of Hiram and the appropriate state and Federal recreation agencies. The report should also contain Licensee's proposed action to implement the findings of the study.

Article 34. Licensee shall consult and cooperate with the Maine Department of Inland Fisheries and Wildlife and the U.S. Fish and Wildlife Service in conducting studies to determine the minimum flow release needed at the Hiram Project to ensure protection and enhancement of fish and wildlife resources. Further, Licensee shall, within 2 years from the date of issuance of this license, file a report on its findings and, for Commission approval, recommendations for a minimum flow release from the project.

Article 35. Licensee shall discharge from the project powerhouse, for the protection of fish and wildlife resources, the following interim continuous minimum flows: (1) if inflow to the reservoir is less than 460 cubic feet per second (cfs), the minimum flow shall be 175 cfs or the inflow to the reservoir, whichever is less; (2) if inflow is greater than 460 cfs, the minimum flow shall be 460 cfs. These flows may be temporarily modified if required by operating emergencies beyond the control of the Licensee, for the minimum flow study required by Article 34, and for short periods for fishery management purposes upon mutual agreement between the Licensee and the Maine Department of Inland Fisheries and Wildlife.

Article 36. Licensee shall commence construction of the proposed project within two years of the date of issuance of the license and shall complete construction within three years from the start of construction.

Article 37. Licensee shall file with the Commission's Regional Engineer and the Director, Office of Electric Power Regulation, one copy each of the contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouses, and water conveyance structures, at least 60 days prior to start of construction. The Director, Office of Electric Power Regulation may require changes in the plans and specifications to assure a safe and adequate project.

Article 38. Licensee shall review and approve the design and construction procedures for contractor-designed cofferdams and deep excavations prior to the start of construction. The Licensee shall file with the Commission's Regional Engineer and Director, Office of Electric Power Regulation, one copy of the approved construction drawings and specifications, and a copy of the letter of approval.

Article 39. Licensee shall within 90 days of completion of construction file in accordance with Commission's Rules and Regulations revised Exhibit F and G drawings showing the project as-built.

(F) The Licensee's failure to file a petition appealing this order to the Commission shall constitute acceptance of this license. In acknowledgment of acceptance of this order and its terms and conditions, it shall be signed by the Licensee and returned to the Commission within 60 days from the date this order is issued.

Lawrence R. Anderson
Director, Office of Electric
Power Regulation

Project No. 2530-001 and 2530-002

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this Order, Central Maine Power Company this ____ day of _____, 19__, has caused its corporate name to be signed hereto by _____, its _____ President, and its corporate seal to be affixed hereto and attested by _____ it _____ Secretary, pursuant to a resolution of its Board of Directors duly adopted on the ____ day of _____, 19___, a certified copy of the record of which is attached hereto.

By _____
President

Attest:

_____
Secretary

(Executed in quadruplicate)

Form L-4
(Revised October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED MAJOR PROJECT AFFECTING NAVIGABLE WATERS OF THE UNITED STATES

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

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

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

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Power Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any feature or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

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

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner

as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee

or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 27. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 28. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

Document Content(s)

Exhibit B-2

UNITED STATES OF AMERICA 88 ferc FERC ¶ 62,033
FEDERAL ENERGY REGULATORY COMMISSION

Central Maine Power Company) Project No. 2530-021

ORDER AMENDING LICENSE
(Issued July 12, 1999)

On September 14, 1998, Central Maine Power Company (licensee) filed an application for amendment of license for the Hiram Project. The licensee is requesting that the minimum flow requirements and reservoir levels of the Instream Flow Agreement for Hydroelectric Projects on the Saco River (Flow Agreement) dated April 30, 1997, applicable to the Hiram Project be incorporated into Article 35 of the license [1]. The Hiram Project is located at river mile 46 on the Saco River in Cumberland and Oxford Counties, Maine.

The licensee has requested that the term of the license for the Hiram Project be extended from 40 years to 50 years due to the "significant" new costs and environmental improvements associated with implementation of the new flow regime at the Hiram Project. This request will be addressed as a separate action by the Commission.

BACKGROUND AND AMENDMENT PROPOSAL

The Hiram Project consists of a 255 acre reservoir with a storage capacity of 572 acre-feet at elevation 349.0 feet (U.S. Geological Survey), a 249 foot-long 30 foot-high dam, two penstocks, and a powerhouse containing two turbine generators with a total installed capacity of 10.9 megawatts.

Article 35 of the license as amended [2] requires the licensee to:

"release from the Hiram Project a continuous minimum flow of 200 cubic feet per second, as measured immediately downstream from the project powerhouse, or inflow to the project whichever is less, for protection of the fish resources in the Saco River. This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement between the licensee and the Maine Department of Fisheries and Wildlife".

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1 / 21 FERC ¶ 62,483 (1982)
2 / 36 FERC ¶ 62,223 (1986)

The Flow Agreement dated April 30, 1997, signed by the licensee, federal and state fisheries agencies and others provides for minimum flow regimes at the licensee's projects on the main stem of the Saco River. Paragraph 19 of the Flow Agreement stipulates that the licensee file with the Commission an application to amend the existing license for the Hiram Project.

As stipulated in the Flow Agreement the licensee will release a minimum flow of 300 cubic feet per second (cfs), or inflow, whichever is less, from the Hiram Project from November 16 through September 30 with reservoir drawdown limited to 2 feet or less from full pond elevation during normal operation or from the spillway crest when the flashboards are down. From October 1 through November 15 or an alternate 6 week period mutually agreed upon by the licensee, U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and the Maine Atlantic Salmon Authority, the project will operate run-of-river with reservoir drawdown limited to 1 foot or less from full pond elevation or from the spillway crest when the flashboards are down. The fall flow period shall be no less and no more than 6 weeks except upon mutual agreement among the licensee and the fisheries agencies and shall start no sooner than September 1 and no later than October 1.

DISCUSSION

On December 7, 1998, the Commission issued a public notice of the application for amendment of license for the Hiram Project to incorporate the minimum flows and reservoir levels of the Flow Agreement. Comments were received from the U.S. Department of the Interior by letter dated January 22, 1999, supporting the proposed amendment of the license for the Hiram Project.

An amendment to the water quality certificate was issued by the Maine Department of Environmental Protection on April 30, 1999, for the Hiram Project. This amendment incorporated the applicable provisions of the Flow Agreement. Conditions of the amended water quality certificate require reservoir water levels and minimum flows consistent with the Flow Agreement, require monitoring of water levels and minimum flows, and provide for operating emergencies beyond control of the licensee.

By letter dated April 14, 1999, Commission staff consulted with the Maine Historic Preservation Commission (SHPO) pursuant to Section 106 of the National Historic Preservation Act. The SHPO concurred by letter dated April 26, 1999, that the proposed action will have no effect on historic properties.

Occasional transient bald eagles and peregrine falcons are the only federally listed endangered species that may occur in the vicinity of the Hiram Project. Implementation of the new minimum flow regime and reservoir levels will not require any construction activity, therefore existing habitats will not be affected. We conclude that the operation of the project, as modified, will have no effect on federally listed threatened and endangered species.

An Environmental Assessment (EA) is being issued concurrently with this order. The EA concluded that the proposed amendment to incorporate the applicable terms of the Flow Agreement into the Hiram license would provide long-term benefits to the aquatic resources and natural resource values of the Saco River. Flow releases from the project would increase and reservoir levels would become more stable. Issuance of an order amending the license for the Hiram Project to incorporate the terms of the Flow Agreement would not constitute a major federal action significantly affecting the quality of the human environment. [33]

Article 35 of the existing license for the Hiram Project is being replaced by license articles requiring reservoir water levels (Article 401) and minimum flow releases (Article 402) consistent with the Flow Agreement. To monitor compliance with the requirements of these articles the licensee is being required by Article 403 to develop and file for Commission approval a monitoring plan.

The Director orders:

(A) The application filed on September 14, 1998, to amend the license for the Hiram Project, FERC No. 2530 to incorporate the applicable terms of the Instream Flow Agreement for Hydroelectric Projects on the Saco River, as modified by paragraphs B and C, is approved.

(B) Article 35 is deleted.

(C) The following articles are added to the license for the Hiram Project:

Article 401. The licensee shall maintain water levels in the Hiram impoundment in accordance with the following schedule:

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3 Environmental Assessment for the Hiram Project, FERC No. 2530. This document is attached to this order.

3 Environmental Assessment for the Hiram Project, FERC No. 2530. This document is attached to this order.

(a) During run-of-river operation from October 1 through November 15, or for an alternate 6-week period (Article 402) as mutually agreed to by the U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and the Maine Atlantic Salmon Authority, no more than 1 foot below normal full pond elevation when the flashboards are in place, and no more than 1 foot below spillway crest elevation when the flashboards are not in place; and

(b) During the remainder of the year (November 16 through September 30), no more than 2 feet below normal full pond elevation when the flashboards are in place, and no more than 2 feet below the spillway crest when the flashboards are not in place.

This water level regime may be temporarily modified by: (1) Commission approved maintenance activities; (2) operating emergencies beyond the control of the licensee that may include but are not limited to, equipment failure or other temporary abnormal operating conditions resulting from extremes in inflows to the project, power supply emergencies, and for public health and safety reasons; or (3) for short periods upon mutual agreement among the licensee and the above fishery agencies. If the water level regime is so modified, the licensee shall notify the Commission and the fishery agencies as soon as possible, but no later than 10 days after each incident.

Article 402. The licensee shall operate the Hiram project and release minimum flows annually as follows:

(a) From October 1 through November 15, or for an alternate 6-week period as may be mutually agreed to by the licensee, U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Atlantic Salmon Authority, as described below, an outflow approximately equal to inflow under run-of-river operation, while allowing for up to a 1 foot drawdown of the impoundment; and

(b) For the remainder of the year (November 16 through September 30), an instantaneous minimum flow of 300 cubic feet per second or inflow, whichever is less.

All required flows shall be the sum of generating flows from the powerhouse and sluice gate/leakage/spillage flows from the dam.

The fall flow period shall be no less and no more than 6 weeks, except upon mutual agreement among the licensee and the above fisheries agencies and shall start no sooner than September 1 and no later than October 1.

This flow regime may be temporarily modified by: (1) Commission- approved maintenance activities; (2) operating emergencies beyond the control of the licensee that may include but are not limited to, equipment failure or other temporary abnormal operating conditions resulting from extremes in inflow to the project, power supply emergencies, and for public health and safety reasons; or (3) for short periods upon mutual agreement among the licensee and the above fisheries agencies. If the minimum flow regime is so modified, the licensee shall notify the Commission and resource agencies as soon as possible, but not later than 10 days after each such incident.

Article 403. The licensee shall, within 180 days from the date of issuance of this amendment to the Hiram project license, file with the Commission, for approval, a plan to monitor the impoundment water levels required by Article 401 and the minimum flows required by Article 402 to ensure that the fish and other aquatic resources in the Hiram impoundment and downstream are adequately protected under the required impoundment water level regime and the flow regime. The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Atlantic Salmon Authority.

The plan shall include: (1) the location and a description of the equipment used for monitoring; (2) a schedule for installation; (3) the method and frequency of data collection; and (4) a provision for providing the data to the above agencies within 30 days from the date of the request from the agencies.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the results of the monitoring indicate that changes in project structures or operations, including alternative impoundment water levels or minimum flow releases, are necessary to protect the fish resources, the Commission may direct the licensee to modify project structures or operations.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 CFR § 385.713.

J. Mark Robinson
Director
Division of Licensing and Compliance

John K. Novak
Product Category: K12

UNITED STATES OF AMERICA 88 FERC • 62,033
FEDERAL ENERGY REGULATORY COMMISSION

Central Maine Power Company)

Project No. 2530-021

ORDER AMENDING LICENSE
(Issued July 12, 1999)

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The licensee has requested that the term of the license for the Hiram Project be extended from 40 years to 50 years due to the "significant" new costs and environmental improvements associated with implementation of the new flow regime at the Hiram Project. This request will be addressed as a separate action by the Commission.

BACKGROUND AND AMENDMENT PROPOSAL

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Article 35 of the license as amended 2/ requires the licensee to:

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As stipulated in the Flow Agreement the licensee will release a minimum flow of 300 cubic feet per second (cfs), or inflow, whichever is less, from the Hiram Project from November 16 through September 30 with reservoir drawdown limited to 2 feet or less from full pond elevation during normal operation or from the spillway crest when the flashboards are down. From October 1 through November 15 or an alternate 6 week period mutually agreed upon by the licensee, U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and the Maine Atlantic Salmon Authority, the project will operate run-of-river with reservoir drawdown limited to 1 foot or less from full pond elevation or from the spillway crest when the flashboards are down. The fall flow period shall be no less and no more than 6 weeks except upon mutual agreement among the licensee and the fisheries agencies and shall start no sooner than September 1 and no later than October 1.

DISCUSSION

On December 7, 1998, the Commission issued a public notice of the application for amendment of license for the Hiram Project to incorporate the minimum flows and reservoir levels of the Flow Agreement. Comments were received from the U.S. Department of the Interior by letter dated January 22, 1999, supporting the proposed amendment of the license for the Hiram Project.

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minimum flow regime and reservoir levels will not require any construction activity, therefore existing habitats will not be affected. We conclude that the operation of the project, as modified, will have no effect on federally listed threatened and endangered species.

An Environmental Assessment (EA) is being issued concurrently with this order. The EA concluded that the proposed amendment to incorporate the applicable terms of the Flow Agreement into the Hiram license would provide long-term benefits to the aquatic resources and natural resource values of the Saco River. Flow releases from the project would increase and reservoir levels would become more stable. Issuance of an order amending the license for the Hiram Project to incorporate the terms of the Flow Agreement would not constitute a major federal action significantly affecting the quality of the human environment. 3/

Article 35 of the existing license for the Hiram Project is being replaced by license articles requiring reservoir water levels (Article 401) and minimum flow releases (Article 402) consistent with the Flow Agreement. To monitor compliance with the requirements of these articles the licensee is being required by Article 403 to develop and file for Commission approval a monitoring plan.

The Director orders:

(A) The application filed on September 14, 1998, to amend the license for the Hiram Project, FERC No. 2530 to incorporate the applicable terms of the Instream Flow Agreement for Hydroelectric Projects on the Saco River, as modified by paragraphs B and C, is approved.

(B) Article 35 is deleted.

(C) The following articles are added to the license for the Hiram Project:

Article 401. The licensee shall maintain water levels in the Hiram impoundment in accordance with the following schedule:

(a) During run-of-river operation from October 1 through November 15, or for an alternate 6-week period (Article 402) as mutually agreed to by the U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and the Maine Atlantic Salmon Authority, no more than 1 foot below normal full pond elevation when the

3/ Environmental Assessment for the Hiram Project, FERC No. 2530. This document is attached to this order.

flashboards are in place, and no more than 1 foot below spillway crest elevation when the flashboards are not in place; and

(b) During the remainder of the year (November 16 through September 30), no more than 2 feet below normal full pond elevation when the flashboards are in place, and no more than 2 feet below the spillway crest when the flashboards are not in place.

This water level regime may be temporarily modified by: (1) Commission approved maintenance activities; (2) operating emergencies beyond the control of the licensee that may include but are not limited to, equipment failure or other temporary abnormal operating conditions resulting from extremes in inflows to the project, power supply emergencies, and for public health and safety reasons; or (3) for short periods upon mutual agreement among the licensee and the above fishery agencies. If the water level regime is so modified, the licensee shall notify the Commission and the fishery agencies as soon as possible, but no later than 10 days after each incident.

Article 402. The licensee shall operate the Hiram project and release minimum flows annually as follows:

(a) From October 1 through November 15, or for an alternate 6-week period as may be mutually agreed to by the licensee, U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Atlantic Salmon Authority, as described below, an outflow approximately equal to inflow under run-of-river operation, while allowing for up to a 1 foot drawdown of the impoundment; and

(b) For the remainder of the year (November 16 through September 30), an instantaneous minimum flow of 300 cubic feet per second or inflow, whichever is less.

All required flows shall be the sum of generating flows from the powerhouse and sluice gate/leakage/spillage flows from the dam.

The fall flow period shall be no less and no more than 6 weeks, except upon mutual agreement among the licensee and the above fisheries agencies and shall start no sooner than September 1 and no later than October 1.

This flow regime may be temporarily modified by: (1) Commission-approved maintenance activities; (2) operating emergencies beyond the control of the licensee that may include but are not limited to, equipment failure or other temporary abnormal operating conditions resulting from extremes in inflow to the project, power supply emergencies, and for public health and safety reasons; or (3) for short periods upon mutual

agreement among the licensee and the above fisheries agencies. If the minimum flow regime is so modified, the licensee shall notify the Commission and resource agencies as soon as possible, but not later than 10 days after each such incident.

Article 403. The licensee shall, within 180 days from the date of issuance of this amendment to the Hiram project license, file with the Commission, for approval, a plan to monitor the impoundment water levels required by Article 401 and the minimum flows required by Article 402 to ensure that the fish and other aquatic resources in the Hiram impoundment and downstream are adequately protected under the required impoundment water level regime and the flow regime. The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Atlantic Salmon Authority.

The plan shall include: (1) the location and a description of the equipment used for monitoring; (2) a schedule for installation; (3) the method and frequency of data collection; and (4) a provision for providing the data to the above agencies within 30 days from the date of the request from the agencies.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the results of the monitoring indicate that changes in project structures or operations, including alternative impoundment water levels or minimum flow releases, are necessary to protect the fish resources, the Commission may direct the licensee to modify project structures or operations.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 CFR • 385.713.

J. Mark Robinson
Director
Division of Licensing and Compliance

Document Content(s)

Exhibit B-3

March 12, 2021

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

Re: MDIFW Comments on the Final License Application for the Hiram Hydroelectric Project (FERC No. 2530)

Dear Secretary Bose:

On January 11, 2021, the Commission issued a *Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Preliminary Fishway Prescriptions* for the Brookfield White Pine Hydro LLC (BWPH or Licensee) Hiram Hydroelectric Project (FERC No. 2530). The Project is located on the Saco River in the towns of Hiram, Baldwin, Brownfield, and Denmark, Maine. By this letter we provide notice pursuant to 18 C.F.R. §385.214(a), as amended, that our Agency is requesting intervenor status in this proceeding. Under Maine State Law (12 MRSA, §10051), the Maine Department of Inland Fisheries and Wildlife's (MDIFW) mandate is *"...to preserve, protect, and enhance the inland fisheries and wildlife resources of the State; to encourage the wise use of these resources; to ensure coordinated planning for the future use and preservation of these resources; and to provide for effective management of these resources."* Intervenor status will provide opportunity for participation.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) offers the following comments on the Final License Application (FLA) for consideration:

Project Operations

The FLA states, *"The Hiram Project is operated in accordance with the provisions of a multi-project settlement agreement; the 1997 Saco River Instream Flow Agreement (Instream Flow Agreement), the terms of which were incorporated into the Project license by FERC Order issued on July 12, 1999. The 1997 Instream Flow Agreement establishes the instream flows for the Hiram Project (seasonal minimum flow of 300 cfs and fall run-of-river operation) and impoundment level requirements for the Project; 2 foot fluctuation from November 16 through September 30, and 1 foot fluctuation during the fall flow period October 1 through November 15.*

The Licensee proposes to continue current Project operations, in accordance with the provisions of the Instream Flow Agreement. The Agreement terminates upon the expiration of the FERC licenses for two other Saco River hydroelectric projects that are part of the agreement; BWPH's Skelton (FERC No. 2527) and Bonny Eagle (FERC No. 2529) that have licenses that expire January 31, 2038. Although the Instream Flow Agreement expires prior to the license term of the

anticipated forthcoming Hiram license, BWPH proposes to continue this mode of operation for the duration of the term of the new license."

MDIFW Comments: As MDIFW was a party to the 1997 Saco River Instream Flow Agreement, our Agency did not initially comment on the proposed Project operations pertaining to minimum flows and impoundment water levels. The Instream Flow Agreement expires in 2038, prior to the anticipated new license term; however, BWPH is proposing to operate under the current agreement for the entire term of the new license. In 2038, MDIFW--and possibly other parties--would like the opportunity to explore the basis for the 1997 decisions as they fall short of what our Agency would typically recommend today; request new analyses, if needed; and explore opportunities to revise the Project operations, if warranted, for the benefit of resident and/or diadromous fisheries and other aquatic resources.

Fish Passage

The FLA states, *"The Project is also subject to the terms of a second multi-project settlement agreement; the Saco River Fisheries Assessment Agreement (Fisheries Agreement). This comprehensive 1994 Agreement was designed to address fish passage needs at the six of the Saco River hydroelectric projects. The 1994 agreement was revised in 2007 (Saco River Fisheries Assessment Agreement or "2007 Fisheries Agreement") and amended in 2009 and 2019 (collectively, the "Fisheries Agreement"). Parties to the Fisheries Agreement include the Licensees, state and federal fisheries management agencies, and interested NGOs. The term of the Fisheries Agreement extends through January 31, 2038. The Fisheries Agreement establishes the timing and nature of fish passage measures to be undertaken for diadromous fishes on the Saco River, and establishes other measures to enhance the fish populations in the Saco River. The Fisheries Agreement, specifically as amended in 2019, anticipates the construction of a site specific upstream anadromous fish passage facility for Atlantic salmon at the Project by May 1, 2032, provided that such a facility is necessary based upon the status of salmon restoration at that time. The Fisheries Agreement also contains provisions for downstream fish passage at the Project for Atlantic salmon, as well as upstream and downstream passage for American eel."*

MDIFW Comments: As MDIFW was a party to the "Fisheries Agreement(s)", our Agency did not initially comment on fish passage provisions. In general, the State and Federal resource agencies responsible for diadromous fisheries management typically take the lead on fish passage negotiations, and MDIFW recognizes these passage facilities also benefit some resident, inland fish species. As Trout Unlimited pointed out in their comments dated March 1, 2021, this area supports an abundance of native, wild trout resources above and below the dam, and it remains unclear if or how the dam may impact those resources. Consequently, in 2032 MDIFW recommends that the scope of the original Agreement should at least give some consideration to native brook trout, and not be solely driven by Atlantic salmon.

In addition, while we appreciate the Licensee's Fish Assemblage Study to explore the above issue, it was a cursory study that does not refute the potential use of areas above and below the Project by wild trout. As noted earlier by our Agency, the study design was not robust enough to answer Trout Unlimited' s concerns. If FERC is willing to give more consideration to the native trout resources in the upper Saco River drainage, a more detailed study should be considered when fish passage for Atlantic salmon is addressed in 2032.

Recreation

Throughout this process MDIFW has advocated for public recreational access for the tailwater and impoundment areas of the Hiram Project. While the Licensee has proposed to continue access to the tailwater area, they fail to adequately address impoundment access with the following response: *"As part of the recreation facility inventory study conducted for the relicensing (see study report in ISR), BWPH conducted a reconnaissance of the Hiram impoundment shoreline looking for any potential areas suitable for a boat launch facility. Other than the existing boat launch site, no potential suitable sites were found. Although the existing boat launch is privately owned, it has long been and currently remains available for public use. Thus, because there are no other suitable locations for an impoundment boat launch site, and because the public do have access to the existing boat launch, there is no need for and the Licensee is not proposing development of a new impoundment boat launch facility at the Hiram Project. Should the existing boat launch become unavailable for public use at some time in the future, BWPH will work with MDIFW to reevaluate the need for a new Hiram impoundment boat launch at that time."*

MDIFW Comments: MDIFW is seeking FERC to require the Licensee to secure a permanent boat launch site at the Hiram impoundment with adequate parking capacity for trailered/non-trailered rigs, as well as appropriate signage to inform the public of the site. This may require the Licensee to develop a new site on existing Project lands or even to acquire/develop a private parcel of land. At the normal full pond elevation, the Hiram impoundment is approximately 254 acres and extends upstream approximately 7.5 miles, which is a relatively sizeable body of water. Public access to surface waters is an important State and Department goal that gives residents and visitors an opportunity to participate in various traditional outdoor activities including fishing, hunting, and multiple forms of recreational boating. Maintaining and expanding public access opportunities is particularly important in southern Maine, as traditional access opportunities to these important resources are being lost at an alarming rate due to development, land posting, and other changes in land use.

Based on our review of the ISR, it does not appear BWPH made a good faith effort to explore potential properties either within their holdings or private lands that could be purchased for site development. It appears BWPH only examined the single, private site mentioned in the ISR, and even then, it is unclear if they actually discussed any concerns, or options to lease or buy the site with the current landowner.

The Licensee suggests an existing private, informal boat launch located approximately 3 miles upstream of the Hiram dam provides adequate public access. MDIFW contends the site is not well known or advertised, and there is no guarantee that this private, informal site will remain available to the public in the near-term, let alone for the duration of the new license. Additionally, the Licensee suggests they will work with MDIFW to evaluate the need for a new Hiram boat launch if the existing launch becomes unavailable. This is unacceptable to MDIFW; the need is there, the existing access is unadvertised and is unknown by much of the public, and it is inadequate to address the anticipated long-term need over the term of the new license.

The FLA states, *"Project recreation use at the Hiram Project as reported by periodic Form 80 efforts is low with 25% capacity reported at the Overlook, 25% at the Nature Trail (aka, Nature Study Area) and 5% capacity reported at the Canoe Portage Trail in 2014. No separate reporting on recreation use was made for the Downstream Access Trail (aka, Fisherman's Trail), Parking and Sandbar area. The Project supported an estimated 4,000 recreation days at all FERC approved sites in 2014 (BWPH 2015f)."*

MDIFW Comments: MDIFW would like to note that our analyses on other projects suggest the Form 80 methodology tends to underestimate recreational use. Furthermore, estimated use was not reported for the informal, private impoundment launch.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

John Perry
Environmental Review Coordinator

Cc: Francis Brautigam, Joe Overlock--MDIFW Fisheries Division, Augusta Headquarters
James Pellerin, Nicholas Kalejs--MDIFW Fisheries Division, Region A
Kathy Howatt, Christopher Sferra--MDEP
Julianne Rosset, Corbin Hilling--USFWS

Exhibit B-4

Central Maine Power
Hydro Operations
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ORIGINAL

94 NOV 23 AM 11:57

November 21, 1994

Ms. Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E., Room 3110
Washington, D.C. 20426

Re: Saco River Environmental Impact Statement
Project Nos. 2528, 2527, 2194, 2531, 2529, 2530
Offer of Settlement

Dear Ms. Cashell:

Please find enclosed for submittal in accordance with Rule 602 of the Commission's Rules of Practice and Procedure as an Offer of Settlement the Saco River Fish Passage Agreement. The Agreement encompasses Central Maine Power Company's Cataract, Skelton, Bar Mills, West Buxton, Bonny Eagle and Hiram facilities. The Agreement was previously filed with the Commission on August 9, 1994. At that time, the Agreement had not been signed by the State of New Hampshire. New Hampshire signed the Agreement on October 6, 1994.

The Agreement resulted from many months of negotiations among CMP, the cities of Biddeford and Saco, state and federal agencies and a cross-section of environmental groups. It affords a comprehensive approach to providing fish passage for anadromous fish species at mainstem Saco River hydro projects. The Agreement calls for a lock system to provide fish passage at the Springs and Bradbury dams (Cataract Project) between the two cities and a fish lift at the Skelton Project. In addition, the Agreement includes a long-range plan for providing fish passage at CMP's four upriver dams that will be driven by the periodic assessment of fish migrations by fishery agencies and other parties to the Agreement.

Thus, the Agreement represents a comprehensive solution for the entire Saco River. By considering the river in its entirety, it is expected that lengthy and contentious relicensing debates over fish passage will be avoided in the future.

Two of the projects covered by the Agreement (Skelton and Bonny Eagle) are under annual license and CMP has requested new licenses. CMP has proposed that the applicable terms of the Agreement be incorporated into any new license issued for these two projects. Two other projects (Cataract and West Buxton) received new licenses in the mid 1980s and the Division of Project Compliance and Administration of the Office of Hydropower Licensing has already issued Orders incorporating the terms of the Agreement applicable

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to Cataract and West Buxton. The remaining two CMP projects (Hiram and Bar Mills) have licenses that expire in 2022 and 2004 respectively. In accordance with the terms of the Agreement, CMP intends in the near future to apply for amendments to those licenses to incorporate the applicable terms of the Agreement.

The Division of Project Review of the Office of Hydropower Licensing is also analyzing the Agreement within the scope of the Environmental Impact Statement that it is currently preparing for the Saco River.

If you have any questions, please contact Sarah Verville at (207) 623-3521.

Sincerely,

F. Allen Wiley, P.E.
Director, Hydro Operations

Enclosure

cc: Eddie Crouse
Robert Grieve
Service List

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CERTIFICATE OF SERVICE
Saco River Environmental Impact Statement
FERC Nos. 2528, 2527, 2194, 2531, 2529, 2530, and 11365
Cataract, Skelton, Bar Mills, West Buxton, Bonny Eagle, Hiram, and Swans Falls Projects

I, Wendy C. Bley, Manager, Licensing and Environmental Studies for Central Maine Power Company, hereby certify that copies of the foregoing document have been transmitted to the following parties of record:

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regular mail,
postage paid to:

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DATE: 11/18/94

Wendy C. Bley

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SACO RIVER FISH PASSAGE AGREEMENT

May 24, 1994

BACKGROUND AND PARTIES

Beginning on July 21, 1993, Central Maine Power Company hosted a series of meetings to negotiate a consensus plan for fish passage facilities at dams on the main stem of the Saco River for the purpose of assisting in restoring populations of anadromous fish, including Atlantic salmon, American shad, and river herring. The participants in the meetings included Central Maine Power Company (CMP); Swans Falls Corporation; the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Maine Atlantic Sea Run Salmon Commission, the Maine Department of Marine Resources, the Maine Department of Inland Fisheries and Wildlife (collectively herein "Fisheries Agencies"); the Maine Department of Environmental Protection (DEP); the Maine State Planning Office; the cities of Saco and Biddeford (Cities); a coalition of non-governmental conservation organizations including the Saco River Salmon Club, Trout Unlimited, the Maine Council of Trout Unlimited, the Atlantic Salmon Federation, the Maine Council of the Atlantic Salmon Federation, and American Rivers, Inc. (the Coalition); the New Hampshire Department of Fish and Game; the Biddeford-Saco Water Company; and the Maine Energy Recovery Co.

The parties to this agreement include all those listed above as participants, except for the Maine Department of Environmental Protection, Swans Falls Corp., Biddeford-Saco Water District and Maine Energy Recovery Company.

This is a settlement agreement for issues regarding the construction of fish passage facilities at projects currently undergoing licensing proceedings before the Federal Energy Regulatory Commission (FERC), including a license amendment for the Cataract Project (FERC No. 2528), and relicensing of the Skelton (FERC No. 2527) and the Bonny Eagle (FERC No. 2529) projects. In addition, Central Maine Power agrees that it will petition the FERC within 12 months of the effective date of this agreement to amend existing licenses at Bar Mills (FERC No. 2194), West Buxton (FERC No. 2531), and Hiram (FERC No. 2530) to incorporate into the licenses for those projects the applicable terms of this agreement.

On December 7, 1993 the parties agreed to the objectives, principles and specific provisions for each project set forth below. Final acceptance of this agreement is indicated by the signature of the official representative from each party.

The parties agree to the following objectives, principles, terms and provisions for restoring anadromous fish populations and providing fish passage at dams on the Saco River.

OBJECTIVES

Agreement on the following objectives does not mean that all parties agree that achieving all objectives is feasible under all circumstances.

1. There is general agreement that the objective of restoring anadromous fish populations on the Saco River is the establishment of viable, self-sustaining runs of Atlantic salmon, shad and river herring, with optimum utilization of suitable habitat, where possible. Providing passage for salmon above Swans Falls is a long term goal. For shad and river herring, the goal is to provide passage on the main stem of the Saco River only to above Bonny Eagle, and to tributaries below the Hiram Project.[1] The ultimate size of the populations will depend on, among other things, the interaction among species, including wildlife species, and must take into consideration the natural fluctuations in populations from year to year. Other objectives of anadromous fish restoration on the Saco River are to provide for fishing/angling opportunities within the constraints of the resource; to provide other wildlife and ecosystem benefits for predator species; and to provide other non-consumptive benefits.

GENERAL PRINCIPLES

2. For the Fisheries Agencies and the Coalition, permanent trap and truck is not a viable long term management strategy. These groups see trap and truck as a short term means to accommodate upstream migrating fish prior to constructing upstream passage facilities. CMP's position is that long term trap and truck may be the most biologically sound method of providing upstream passage at specific Saco River dams in order to achieve the goal of restoring anadromous fish populations.

3. There is some uncertainty regarding shad's ability to pass multiple barriers. This may affect the ability to restore shad to certain portions of the Saco River, and could affect the timing and design of fishways constructed at Bar Mills, West Buxton and Bonny Eagle.

4. Downstream passage is needed at all dams above which anadromous fish have passed, or have been stocked or trucked. Schedules for constructing permanent downstream passage facilities are specified below for each dam. CMP agrees to provide interim downstream passage (e.g. controlled spills during downstream migration periods, installation of temporary downstream fish passage facilities or other feasible measures) necessary to allow downstream fish passage at each dam above which anadromous fish have been stocked or trucked. Such efforts shall continue until permanent downstream fish passage facilities are installed and operational in accordance with this agreement.

5. A comprehensive fish passage plan should be biologically defensible and, from CMP's perspective, be more cost effective than constructing upstream passage facilities in the order of relicensing.

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[1] Restoration goals also include providing upstream passage at dams on tributaries that flow into the Saco River above Bonny Eagle, such as the Ossippee and Little Ossippee Rivers, but those dams are not within the scope of this agreement.

6. The rate of growth of anadromous fish populations above Skelton is somewhat uncertain, making it necessary to conduct periodic assessments to determine the need for, design and schedule for implementing fish passage measures at Bar Mills, West Buxton, Bonny Eagle, Hiram and Swans Falls. Assessment criteria ("Criteria") will be established in advance as outlined below. Criteria may address the following factors, among others: spawning escapement, trap and truck capacity and mortality, habitat utilization, size of runs, fallback below one or more dams, rate of increase in populations, stock origin of run, etc.

The parties agree that the state and federal Fisheries Agencies will develop by January 1, 1995 the Criteria to be used in future assessments to determine the need for, timing and design of interim and permanent upstream passage facilities at Bar Mills, West Buxton, Bonny Eagle, Hiram and Swans Falls. The Criteria will be developed in consultation with the parties to this agreement, using a consensus process to endeavor to achieve acceptance by all parties. If, after meetings between the parties with a facilitator, a consensus can not be achieved, the Fisheries Agencies' Criteria shall be used to determine the schedule for construction of upstream fish passage facilities above Skelton.

7. A final design of any permanent upstream or downstream fish passage facility must be approved in writing by an authorized official of the Department of the Interior (U.S. Fish and Wildlife Service) and/or the Department of Commerce (National Marine Fisheries Service) pursuant to Section 18 of the Federal Power Act, as amended, before the dam owner is obligated to construct that facility at its project site. Additionally, CMP will consult with the Maine Department of Marine Resources, Maine Atlantic Sea Run Salmon Commission, Maine Department of Inland Fisheries and Wildlife, and the Maine Department of Environmental Protection regarding the final design of fish passage facilities, as may be necessary under applicable state law.

CMP will conduct effectiveness studies of all newly constructed upstream and downstream fish passage facilities at its project sites in accordance with a study plan to be developed in consultation with the state and federal Fisheries Agencies listed above.

8. Complete restoration of Atlantic salmon to the Saco River watershed would require stocking of juvenile fish above Hiram and Swans Falls dams (in New Hampshire). Stocking of salmon in New Hampshire is dependent on, among other things, an inter-agency agreement on stocking between the relevant state and federal Fisheries Agencies, and an adequate supply of suitable Atlantic salmon stocks. All parties will use their best efforts to expedite such agreements as are necessary for restoring Atlantic salmon to the New Hampshire portion of the Saco River basin.

CATARACT PROJECT

9. The parties agree that the numbers of shad and river herring that passed at Cataract East and West Channel in 1993 exceeded expectations. The size of the stock below the dam was

also higher in 1993 than expected. Salmon were also passed successfully in 1993, with numbers consistent with expectations. The facilities at East and West Channel were well built.

10. All parties agree that the fish lift/lock concept proposed by CMP is an acceptable alternative for upstream fish passage at the Springs and Bradbury Dams. CMP and the Cities believe that the fish lift/lock concept is the preferred alternative to dam removal (which is politically difficult and has uncertain mitigation costs) and Denil fishways (which are more expensive to construct). The Cities believe that removal or lowering of the dams at Springs and Bradbury is not an acceptable fish passage option. Should CMP seek to remove or lower the dams at Springs and Bradbury, the Cities may pursue any available legal rights they may have.

Assuming that the lift/lock concept proves to be feasible and less expensive than Denil fishways, all parties agree to the following schedule for construction. The 1994 season will be used for telemetry, engineering, and flow studies. Construction of upstream passage facilities at Springs or Bradbury would begin in 1995 with passage facilities to be operational by May 1, 1996. Construction of the upstream facility at the other dam will be completed and operational by May 1, 1997, or sooner.

Because there are no generation facilities at Springs and Bradbury dams, the Fisheries Agencies agree that there is no foreseeable need to construct permanent downstream fish passage facilities at those dams.

11. CMP agrees to trap and truck (or arrange for the trapping and trucking) of Atlantic salmon, shad and river herring from the East Channel fish lift in accordance with the specifications of the state and federal Fisheries Agencies. Depending on the numbers of returning fish, some salmon may be trucked around Bonny Eagle from East Channel as early as 1994.

SKELTON PROJECT

12. CMP agrees that full, permanent upstream and downstream fish passage facilities at Skelton will be designed to pass salmon, shad and river herring, and will be operational by May 1, 1998, or within three years of receipt of a new license for Skelton, whichever occurs later. The returning run of shad and river herring from the 1993 spawning season is expected in 1998.

13. All parties agree that a fish lift with trap and truck facilities is the current favored design for Skelton. Once the Skelton facilities are operational and fish are present at Skelton in sufficient numbers, trapping and trucking of salmon, shad, and river herring is expected to move to Skelton from Cataract East Channel. The trap and truck program will be paid for by CMP, but decisions on the number of fish to be trucked and the destinations in Maine and New Hampshire will be made by the appropriate state and federal Fisheries Agencies.

BAR MILLS, WEST BUXTON, BONNY EAGLE, HIRAM AND SWANS FALLS PROJECTS

14. CMP agrees to construct interim, permanent or, under appropriate circumstances, both interim and permanent upstream passage facilities, at Bar Mills, West Buxton, Bonny Eagle and Hiram according to the schedule and conditions below.

a) The state and federal Fisheries Agencies will conduct the first assessment in 1999 according to the Criteria described in paragraph 6 above to determine the identity of, the need for, the design and the timing of the first upstream fish passage facility to be constructed. The assessment will be conducted in consultation with the parties to this agreement using a consensus process (which shall include meetings between the parties with a facilitator) to endeavor to achieve acceptance by all parties. Subsequent, similar assessments will also be conducted under these same guidelines in 2003, 2007 and 2011.

b) The Fisheries Agencies will use the assessments in their determination of anadromous fish restoration needs, including such fishways as may be prescribed by the Department of Interior (U.S. Fish and Wildlife Service) and/or Department of Commerce (National Marine Fisheries Service) pursuant to Section 18 of the Federal Power Act, as amended, and such other measures as may be necessary under applicable state law.

c) The first upstream passage facility will be required to be operational no earlier than May 1, 2005. Construction and operation of the first facility may occur later than May 1, 2005 if an assessment determines that the facility is not needed until a later date.

d) The identity of, need, design and schedule for any additional upstream passage facilities will be determined by the assessments, but in no event will upstream passage facilities at or above the Bar Mills project be required to be completed less than two years apart, except for Swans Falls which may be scheduled for simultaneous completion with Hiram.

15. CMP agrees to construct permanent downstream passage facilities at Bonny Eagle within 2 years of receipt of the Bonny Eagle license, and at Bar Mills and West Buxton within 2 years of receipt of the license amendment for downstream passage at each facility. CMP will apply to the FERC for the license amendments at Bar Mills and West Buxton, if necessary, within 12 months of execution of this agreement by all parties.

16. The need for permanent downstream passage for salmon at Hiram and Swans Falls hinges on the presence of juvenile or adult fish. This could result from the annual production stocking* of juvenile salmon or trucking of adults and their subsequent natural reproduction. Either event (stocking or trucking) is dependent on the participation of appropriate state and federal Fisheries Agencies in Maine and New Hampshire including the New Hampshire Fish

and Game Department and the U.S. Forest Service. Permanent downstream passage will be provided at each of the two dams no more than two years from commencement of annual production stocking of salmon above such dam.

* "annual production stocking" is defined as scheduled annual stocking based on an inter-agency agreement and a written management plan by the Fisheries Agencies with the specific objective of establishing a continuous run of returning fish. It does not include intermittent, unplanned or one time stockings, including, for example, stocking for studies of habitat utilization, growth rates, etc.

17. The current license exemption application for Swans Falls calls for upstream passage facilities to be completed no later than 2011. This schedule could be modified according to the terms and conditions in Swans Falls' license exemption to require passage at Swans Falls sooner, or to allow a delay if, among other things, passage facilities are not constructed at Hiram before 2011.

ADDITIONAL CONSIDERATIONS

18. This agreement shall be effective when signed by the appropriate authorities representing Central Maine Power Company, the Maine Department of Inland Fisheries and Wildlife, the Maine Department of Marine Resources, the Maine Atlantic Sea Run Salmon Commission,the Maine State Planning Office, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the New Hampshire Department of Fish and Game, Saco River Salmon Club, Trout Unlimited, Maine Council of Trout Unlimited, Atlantic Salmon Federation, Maine Council of the Atlantic Salmon Federation, American Rivers, Inc., the City of Saco, the City of Biddeford, and when reviewed and acknowledged without objection by the Maine Department of Environmental Protection.

19. This agreement shall terminate, unless extended by the parties, on December 31, 2022 or upon the expiration of the renewed licenses of the Skelton or Bonny Eagle projects, whichever is later.

20. This agreement shall bind and inure to the benefit of the successors and assigns of the signing parties.

21. The parties will endeavor to resolve in good faith any dispute that may arise in carrying out this agreement, using a consensus process which shall include meetings between the parties with a facilitator. The intent of the parties is to maintain the spirit of cooperation and understanding that led to this agreement, even as circumstances change (including changes in applicable law) or new information is acquired.

22. Nothing in this agreement shall be construed as obligating the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the U.S. Forest Service, the State of Maine, or the State of New Hampshire, their officers, agents or employees, to expend any funds in

excess of appropriations or other amounts authorized by law.

We, the undersigned, having the authority to bind our respective parties, agree to the terms of this agreement, and will represent and support this agreement in applicable proceedings before the Federal Energy Regulatory Commission and other regulatory bodies:

Central Maine Power Co.

Its President & CEO Date June 28 1994

Maine Atlantic Sea Run Salmon Commission

Its Commissioner Date June 28, 1994

Maine Department of Inland Fisheries and Wildlife

Its Director Date June 28 1994

Maine Department of Marine Resources

Its Commissioner Date 6.28.94

U.S. Fish and Wildlife Service

Its Supervisor, New England Fisheries Date 6/28/94

Maine State Planning Office

Its Director Date 6/28/94

National Marine Fisheries Service

Its Acting Director Northeast Reg. Date 6/28/94

Saco River Salmon Club

Its Vice President Date 6/29/94

Trout Unlimited

Its Assistant CEO - Date 6/28/94

2157 0000

Atlantic Salmon Federation

Its Acting U.S. Director Date 6/28/94

American Rivers, Inc.

Its Date

Maine Council, Atlantic Salmon Federation

Its Pres. Date 6/28/94

Maine Council, Trout Unlimited

Its Chairman Date 6/28/94

City of Saco

Its Mayor Date 6/28/94

City of Biddeford

Its Mayor Date 6/28/94

New Hampshire Department
of Fish and Game

Its Date

Swan Falls

Its Date

Atlantic Salmon Federation

Its _____ Date _____

American Rivers, Inc.

Its Kevin J. Coyle, President Date 7-28-94

Maine Council, Atlantic Salmon Federation

Its _____ Date _____

Maine Council, Trout Unlimited

Its _____ Date _____

City of Saco

Its _____ Date _____

City of Biddeford

Its _____ Date _____

New Hampshire Department
of Fish and Game

Its _____ Date _____

_____ _____

Atlantic Salmon Federation

Its _____ Date _____

American Rivers, Inc.

Its _____ Date _____

Maine Council, Atlantic Salmon Federation

Its _____ Date _____

Maine Council, Trout Unlimited

Its _____ Date _____

City of Saco

Its _____ Date _____

City of Biddeford

Its _____ Date _____

New Hampshire Department
of Fish and Game

John D Nelson Jr 10/6/94
Its Acting Executive Director Date

_____ _____

UNITED STATES OF AMERICA 120 FERC ¶ 62,050
FEDERAL ENERGY REGULATORY COMMISSION

FPL Energy

Project Nos. 2527-064, 2528-084, 2529-086, 2530-044, 2531-058, and 2194-032

ORDER MODIFYING AND APPROVING FISH PASSAGE ASSESSMENT REPORT AND RECOMMENDATIONS FOR FISH PASSAGE AND FISHERIES MANAGEMENT

(Issued July 18, 2007)

On March 27, 2007, FPL Energy (licensee) filed its 2000-2005 fish passage assessment report and recommendations, via parts of a settlement offer, for fish passage and fisheries management at the Skelton Project (FERC No. 2527), Cataract Project (FERC No. 2528), Bonny Eagle Project (FERC No. 2529), Hiram Project (FERC No. 2530), West Buxton Project (FERC No. 2531) and the Bar Mills Project (FERC No. 2194). The projects are located on the Saco River in Cumberland, Oxford, and York Counties, Maine.

BACKGROUND

In 1994, the licensee completed negotiations, and filed for Commission approval, the 1994 Saco River Fish Passage Agreement. In February 26, 1998 orders, the Commission incorporated the provisions of the agreement into the licenses for the Cataract Project, Skelton Project, Bar Mills Project, West Buxton Project, Bonny Eagle Project, and Hiram Project (in order from downstream to upstream).[1]

The agreement settled licensing issues relating to anadromous fish passage at the seven hydroelectric projects on the main stem of the Saco River. The seven projects include the six listed above, along with the Swan Falls Project (FERC No. 11365), which is located upstream of the Hiram Project and was issued an exemption from licensing on July 31, 1997.[2]

The agreement established dates or time frames for the development of upstream anadromous fish passage facilities for the two most downstream projects on the Saco

[1] Order Amending Licenses for Bar Mills Project, Buxton Project, and Hiram Project (82 FERC ¶ 61,191) and Orders Issuing New License for the Bonny Eagle and Skelton Projects (82 FERC ¶ 61,187 and 82 FERC ¶ 61,190, respectively). A license was issued for the Cataract Project in 1989.

[2] 80 FERC ¶ 62,087. The Swan Falls Project is owned by Saco River Hydro LLC.

River, the Cataract and Skelton Projects.[3] Further, the agreement established a schedule for the provision of downstream fish passage facilities for the licensee's six projects.[4] Finally, the agreement provided for a process in which the relevant fisheries agencies, licensee, and other parties, would assess the need, design, and schedule for providing upstream passage facilities for the Bar Mills, West Buxton, Bonny Eagle, and Hiram Projects if appropriate. The assessment was further defined in the January 1995 Annex 1: Assessment Process and Criteria.

The agreement called for the parties to assess the need for upstream passage measures at the remaining four projects every four years and to submit to the Commission the results of the assessment, along with recommendations, if appropriate, for development of the next upstream passage facility. Based on the agreement, the next upstream passage facility was to be installed and operational no sooner than spring 2005. The first assessment report, covering the period 1996-1999, was filed with the Commission on February 18, 2000. The second assessment report was originally scheduled for filing with the Commission in December 2003, but required extended discussions in order to come to consensus on the recommendations for future fish passage measures. The discussions related to the second assessment report have culminated in the 2007 Settlement and Assessment filed on March 27, 2007. The licensee states the March 2007 filing establishes the need, design, and schedule for future upstream anadromous fish passage facilities in accordance with the 1994 Agreement and the existing license requirements for the projects.

ARTICLE REQUIREMENTS

The Bonny Eagle Project (article 406), Bar Mills Project (article 21), West Buxton Project (article 404), and the Hiram Project (article 40) all have the same article requirements concerning the 1994 Agreement. The article for each project is as follows:

> "The licensee shall file with the Commission, for its approval, a plan and schedule for the construction, operation, and maintenance of such interim, permanent, or both interim and permanent upstream facilities as are determined to be necessary based upon assessments conducted by the Maine Atlantic Salmon Authority (Maine Salmon Authority), the Maine Department of Marine Resources(Maine DMR), the Maine Department of

[3] The upstream fish passage facilities for Cataract and Skelton have been constructed and are operational.

[4] Downstream fish passage facilities are operational at the Cataract, Skelton, Bar Mills, West Buxton, and Bonny Eagle Projects and have been tested for their effectiveness in passing Atlantic salmon smolts.

Inland Fisheries and Wildlife (Maine Fisheries and Wildlife), the U.S. Fish and Wildlife Service (FWS), and the National Marine Fisheries Service (NMFS) pursuant to the Saco River Fish Passage Agreement (filed with the Commission on November 23, 1994) and Annex 1: Assessment Process and Criteria (filed with the Commission on April 5, 1996), or as may be prescribed by the U.S. Department of Interior (Interior) under Section 18 of the Federal Power Act. If it is determined, based upon the agencies' assessments, that such fish passage facilities are necessary, and/or such facilities are prescribed by Interior:

(a) The licensee shall file a plan and schedule for interim upstream fish passage facilities at least 90 days prior to implementation of such interim passage;

(b) The licensee shall file functional design drawings for permanent upstream passage facilities at least 180 days prior to the commencement of construction of such facilities. The licensee shall include with the drawings: (1) site locations; (2) quantification of flows to operate the facilities; (3) an operation and maintenance schedule; and (4) measures to control erosion and sedimentation during construction.

(c) Any requirement for construction of permanent upstream fish passage facilities at the Bonny Eagle Project will provide for completion at least two years before or two years after completion of such facilities at the Bar Mills Project No. 2194, West Buxton Project No. 2531, and Hiram Project No. 2530; and no permanent upstream passage facilities will be required to be operational at the Bonny Eagle Project before May 1, 2005.

The licensee shall prepare the plan and drawings required in (a) and (b) above, after consultation with FWS, NMFS, Maine DMR, Maine Salmon Authority, and Maine Fisheries and Wildlife. The licensee shall include with the plan and drawings, as appropriate, documentation of consultation, copies of comments and recommendations on the plan or drawings and schedule after they have been prepared and provided to the agencies, and specific descriptions of how agencies' comments are accommodated by the licensee's facilities. The licensee shall allow a minimum of 30 days to comment and make recommendations before filing the plan or drawings with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

> The Commission reserves the right to require changes to any proposed facilities. Upon Commission approval, the licensee shall implement the proposal, including any changes required by the Commission.
>
> As-built drawings of any permanent upstream fish passage facilities shall be filed in accordance with the requirements of Article 301. At the same time the licensee files as-built drawings with the Commission, as-built drawings shall also be filed with the above listed resource agencies."

An Order Approving Fish Passage Plans issued March 26, 1999, for the Skelton Project approved the construction and efficiency testing of upstream and downstream facilities at the project under articles 405, 406, and 407.[5] The order acknowledged the licensee was working with the resource agencies and stated that in the event alternative strategies are adopted by the licensee, with agency concurrence, which would change the current fish passage facilities or effectiveness studies, the licensee should petition the Commission to amend its plans under article 405, 406, or 407.

For the Cataract Project, the upstream and downstream fish passage facilities have been constructed and are operational. The licensee has been evaluating the effectiveness of the facilities, pursuant to the 1994 Agreement, according to the approved fish lock evaluation plan and schedule.[6]

LICENSEE'S ASSESSMENT AND RECOMMENDATIONS

The licensee's filing contains a final assessment report for 2000-2005 that was prepared in accordance with the 1994 agreement and the 1995 annex 1: assessment criteria. The report describes the applicability of current management goals and objectives, key problems and issues, and assessment criteria. The report identifies the resident and diadromous fish species of the Saco River and discusses upstream passage for these fish. The report also provides monitoring results for Atlantic salmon, American shad, river herring, and American eel; evaluation of data under the assessment criteria; status of diadromous fish populations; and identifies the progress made towards goals and objectives.

In developing the assessment report, the licensee and the resource agencies, consisting of the FWS, NMFS, Maine DMR, Maine Salmon Commission (MSC), Maine Fisheries and Wildlife, Saco River Salmon Club, Atlantic Salmon Federation (ASF),

[5] 86 FERC ¶ 62,234.

[6] Order Approving Fish Lock and Evaluation Plan and Schedule issued June 5, 2002, at 99 FERC ¶ 62,159.

Maine Council of the Atlantic Salmon Federation (MC-ASF), Saco River Hydro LLC, and the New Hampshire Fish and Game Department (Parties) developed the 2007 Settlement.

In consideration of, and consistent with, the 1994 Agreement, the Parties, in the 2007 Settlement, agreed upon a schedule for installing upstream and downstream anadromous fish passage measures at the licensee's Saco River projects. The Parties also agreed upon upstream and downstream eel passage measures, which were not part of the 1994 Agreement. Further, the Parties agreed that the recommended measures (contained in Section 5 of the 2007 Agreement) conclude the assessment process under the 1994 Agreement.

As such, the licensee requests that the 2000-2005 assessment report be approved; that the filing requirements of each license be modified to recognize that the fish passage assessment process is complete and no further assessment reports are required; that the applicable provisions of Section 5 of the 2007 Settlement be approved as an offer of settlement for the Bar Mills Project and incorporated into the new license[7] for the project; and that the measures listed in Section 5 be incorporated as enforceable license conditions for each project as applicable.

PROPOSED FISHERIES MANAGEMENT MEASURES

Section 5 of the 2007 Settlement contains the Fisheries Management Measures. Section 5.1 contains provisions, which include design review, shakedown period, effectiveness studies and fishway operating procedures, relating to all fish passage facilities addressed in the 2007 Settlement. For design review, plans and designs for each permanent fish passage facility will be reviewed in accordance with Section 7 of the 1994 Agreement and current project license. Once each new fish passage facility is constructed, the licensee will operate each facility for a one-season "shakedown" period to ensure that it is generally operating as designed and to make minor adjustment to the facilities and operation. The licensee agrees to conduct effectiveness studies following the shakedown period of all newly constructed or significantly modified permanent upstream and downstream fish passage facilities or measures required under the 2007 Settlement. Finally, the licensee, in consultation with the FWS, NMFS, Maine DMR, and Maine Salmon Authority, draft and maintain a standard set of written fishway operating procedures for each of its projects on the Saco River. The fishway operating procedures will include general schedules for: routine maintenance; routine operation; monitoring and reporting on the operation of each fish passage facility or measure;

[7] An application for New License for the Bar Mills Project was filed with the Commission on June 27, 2003, and is currently pending before the Commission.

annual start-up and shut-down; and procedures for emergencies and project outages significantly affecting fishway operations.

Section 5.2 addresses American eel measures to be implemented. The licensee will provide permanent eel passage measures at its projects according to the following schedule. The schedules set forth may be delayed following consultation and agreement with FWS, NMFS, and Maine DMR that eels are not yet sufficiently abundant to require passage or provide enough data to allow for a determination of the type or location of eel passage measures.

PROJECT	UPSTREAM EEL PASSAGE OPERATIONAL DATE	DOWNSTREAM EEL PASSAGE OPERATIONAL DATE
Cataract-East and West Channel Dams	June 1, 2008	September 1, 2011
Cataract-Springs or Bradbury Dam	June 1, 2010	n/a
Skelton	June 1, 2012	September 1, 2024
Bar Mills	June 1, 2014	September 1, 2026
West Buxton	June 1, 2016	September 1, 2028
Bonny Eagle	June 1, 2018	September 1, 2030
Hiram	June 1, 2020	September 1, 2032

An upstream eel passage facility will be required at only one location at each of the projects, except at the Cataract Project where a facility may be required at both the West Channel dam and East Channel dam. The licensee will provide an upstream eel passage facility at either the Springs dam or Bradbury dam. The licensee may elect to study, in consultation with the agencies, which dam is the most appropriate location for a facility or install an upstream facility at both dams. In the year before initiation of an upstream eel passage facility at a project, the licensee will conduct a study to establish where at the project the passage should be located. The licensee will present the results of this study to the FWS, NMFS, and Maine DMR and obtain their concurrence with the choice of location. If it is the consensus of the FWS, NMFS, and Maine DMR that insufficient numbers of eels are present to require a fishway or to determine the location of an upstream eel fishway, those agencies may elect to delay the requirement to install passage facilities until adequate numbers of eels are present or a fishway location can be determined.

The licensee will provide engineering and/or operational plans for permanent downstream eel passage measures to the Maine DMR, FWS, and NMFS by February 28 of the year in which downstream eel passage measures are scheduled at a given project.

An efficiency goal of 90% has been targeted at each project. The goal may be revised following consultation with and consensus by and between the licensee and the FWS, NMFS, and Maine DMR. If, in the interim period prior to implementing permanent downstream eel passage measures at the various projects, downstream eel passage measures are needed under special circumstances, the licensee agrees to undertake the following measures during the passage season for that year: (1) open an existing fish sluice or other gate at the project to provide an unimpeded passage route, and (2) reduce generation if necessary to reduce the approach velocity to the turbine intake(s), thereby reducing the potential for impingement or entrainment of eels. The implementation of the measures (which are detailed in Section 5.2) will be initiated as described by the confirmed observation of more than 50 adult eel mortalities per night at a given project. Finally, the Parties agree that the only downstream eel passage measures required at Springs and Bradbury dams will be via routine gate operation or spillage.

Section 5.3 addresses requirements specific to Atlantic salmon, American shad, alewife, and blueback herring. The licensee is not required to institute any additional downstream fish passage measures at the Hiram Project until permanent downstream fish passage measures are operational at Hiram. Permanent downstream fish passage measures for Atlantic salmon (the only anadromous species needing downstream passage at the Hiram Project) shall be operational by the earlier of: (a) April 15 following 2 years after the licensee receives written notification of the commencement of scheduled annual stocking of juvenile Atlantic salmon in the Saco River watershed above the Hiram dam, but in no case earlier than April 15, 2017; or (b) the operation of permanent upstream fish passage facilities for Atlantic salmon at the Hiram Project.

The licensee will provide a single permanent upstream anadromous fish passage facility at each of the projects according to the following schedule. These schedules may be delayed contingent upon the returning numbers of target species, and following consultation with and agreement by the FWS, NMFS, Maine Salmon Authority, and Maine DMR.

PROJECT	OPERATIONAL DATE
Bar Mills	May 1, 2016
West Buxton	May 1, 2019
Bonny Eagle	May 1, 2022
Hiram	May 1, 2025

The licensee will, 18 months prior to the planned construction of each upstream passage facility, submit conceptual designs for approval by the FWS, NMFS, MSC, and Maine DMR and will subsequently file functional design drawings with the Commission for approval. The licensee will not be required to install more than one upstream fish

passage facility at each of the Bar Mills, West Buxton, Bonny Eagle, or Hiram Projects during the term of the 2007 Settlement. The licensee will continue to trap adult Atlantic salmon at either the Cataract or Skelton fishway, and truck these fish to release sites in the Maine portion of the Saco River basin until such time as permanent upstream fish passage measures are operational at each of the licensee's Saco River projects.

The licensee agrees to continue to trap adult alewife and blueback herring at either the Cataract or Skelton fishways, and truck these fish to release sites in river reaches below the Hiram Project until such time as permanent upstream passage measures are operational at the Bar Mills, West Buxton, and Bonny Eagle projects.

The licensee will attempt to improve American shad passage at the Springs Island dam according to the following: (a) when adult shad returns at the Cataract fish passage facilities (East and West Channels combined) reach 3,000 fish per year for two consecutive years, the licensee will perform an engineering study, design drawings for the facility, and/or operational modifications to improve shad passage at Springs Island dam; (b) when adult shad returns at the Cataract fish passage facilities subsequently reach 5,000 fish per year for two consecutive years, the licensee will implement the modifications within 2 years, or will implement the modifications in 2014 (to be operational in 2015), whichever is sooner (in the latter case, the above study/design would be conducted in 2012); (c) the modifications considered and agreed upon to attain effective passage for American shad may include facility modifications of the existing Springs/Bradbury dam lock and lift systems and/or operational modifications.

If the licensee and the FWS, NMFS, and Maine DMR cannot agree by June 1, 2012 that the above measures provide effective upstream passage for American shad, the licensee agrees to install a single Denil-type fishway at the location of the Springs Island dam fish lock and lift. No additional anadromous fish passage facility or operational modifications will be required at the Springs/Bradbury dams during the term of the 2007 Settlement. If effectiveness testing of the Denil fishway demonstrates that the Springs Island dam is not passing shad effectively, the licensee and the Parties agree that trap and truck operations will be used to supplement the above measures to pass additional shad past the Springs/Bradbury dams. The licensee agrees to continue to trap adult American shad at either the Cataract or Skelton fishways, and truck these fish to release sites in the river reaches below the Hiram Project until such time as permanent upstream passage measures are operational at the Bar Mills, West Buxton, and Bonny Eagle Projects.

Finally, Section 5.4 identifies the types of studies agreed to for each project and details what the studies are to address.

PUBLIC NOTICE

On April 5, 2007, the Commission issued a public notice of the application for amendment of licenses to the reflect settlement agreement and set a comment response date of May 4, 2007. In response to the public notice, Interior's Office of the Solicitor and NMFS, by letters filed on April 19, 2007, and April 25, 2007, respectively, timely motions to intervene in the proceeding and their support for the application.

By letter filed May 1, 2007, the Interior provides its support of the measures contained in the 2007 Settlement. The Maine DMR and Maine Fisheries and Wildlife, by letters filed May 3, 2007, state the 2007 Settlement adequately addresses resident species in conjunction with upstream and downstream passage of diadromous fishes at the projects and both agencies support the agreement. The ASF and MC-ASF filed, on May 7, 2007, its support of the agreement.

DISCUSSION

The 1994 Agreement required the licensee to assess the need for upstream passage measures at the licensee's projects every four years and to file the results of the assessment, along with recommendations, for development of the next upstream passage facility. The licensee's March 27, 2007 filing of the 2000-2005 final assessment report on Saco River fish passage adequately fulfills the reporting requirements under the licenses for the Cataract Project, Skelton Project, Bar Mills Project, West Buxton Project, Bonny Eagle Project, and Hiram Project and should be approved. The assessment report establishes the need, design, and schedule for the various upstream passage facilities under the 1994 Agreement, and the 2007 Settlement contains the agreement of the Parties regarding the schedule for installation of upstream anadromous fish passage at the projects. Since the 2007 Settlement addresses the schedule for upstream passage, continued assessment reports no longer need to be filed pursuant to the 1994 Agreement.

Regarding the Bar Mills Project, the licensee filed, on June 27, 2003, an application for a new license. The assessment and 2007 Settlement each recommend the continued trapping and transport of anadromous fish until the installation and operation of permanent upstream anadromous fish passage facilities at Bar Mills in 2016. In addition, the 2007 Settlement requires eel passage measures to be instituted at Bar Mills in 2014 (upstream passage) and 2026 (downstream passage) with interim downstream measures required as defined in the 2007 Settlement. The licensee states that the fish passage conditions relating to Bar Mills contained in the 2007 Settlement constitute the relicensing proposals for fish passage measures at the project. As such, the provisions relating to Bar Mills, other than the filing of the required assessment report, will not be

decided in this order, but separately in the relicensing proceeding currently pending before the Commission.

Our decision here for the other five projects does not necessarily dictate the result of the Bar Mills relicensing with respect to fish passage. In the Bar Mills relicense proceeding, the Commission will examine whether the proposed fish passage measures should be included in any new license. Our decision on the remaining fish passage measures for the other projects will undoubtedly influence the decision on that issue, but the Federal Power Act requires the Commission to fully consider all evidence and arguments presented in the relicense proceeding on this and any other issues,[8] and the Commission shall do so.

The fisheries management measures proposed by the licensee, as a result of the 2007 Settlement, include provisions for upstream and downstream eel passage by a particular date for each project, downstream passage for anadromous fish at the Hiram Project, permanent upstream passage for anadromous fish by a particular date for Bar Mills Project, West Buxton Project, Bonny Eagle Project, and the Hiram Project, Atlantic salmon, alewife and blueback herring, and American shad management measures, and necessary studies at each project.

Upstream eel passage measures will be provided at each project in sequence beginning in the year 2008 and ending in year 2020. Permanent downstream eel passage measures will be provided at each project beginning 12 years after upstream passage is provided at the project. This will allow for maturation of those eels that are passing upstream via the new upstream passage measures. The settlement also contains interim downstream eel passage measures should they be necessary prior to the implementation of permanent measures. The dates proposed for both upstream and downstream passage facilities to be operational, with the exception of Bar Mills, should be approved.

PROJECT	UPSTREAM EEL PASSAGE OPERATIONAL DATE	DOWNSTREAM EEL PASSAGE OPERATIONAL DATE
Cataract-East and West Channel Dams	June 1, 2008	September 1, 2011
Cataract-Springs/ Bradbury Dam	June 1, 2010	n/a

[8] The purpose of relicensing is to examine the public interest with respect to an exisiting project in light of currently applicable laws and policies. Confederated Tribes and Bands of Yakima Indian Nation v. FERC, 746 F.2d 466, 470-71 (9th Cir. 1984), cert. denied, 471 U.S. 1116 (1985) (Yakima).

Skelton	June 1, 2012	September 1, 2024
Bar Mills	June 1, 2014	September 1, 2026
West Buxton	June 1, 2016	September 1, 2028
Bonny Eagle	June 1, 2018	September 1, 2030
Hiram	June 1, 2020	September 1, 2032

The licensee will also provide a single permanent upstream anadromous fish passage facility at each of the projects according to the following schedule. With the exception of Bar Mills, the dates to have each passage facility operational should be approved.

PROJECT	OPERATIONAL DATE
Bar Mills	May 1, 2016
West Buxton	May 1, 2019
Bonny Eagle	May 1, 2022
Hiram	May 1, 2025

The 2007 Settlement indicates the schedules set forth for the development and implementation of upstream and downstream eel passage measures may be delayed following consultation and agreement by the FWS, NMFS, and Maine DMR that eels are not yet sufficiently abundant to require passage or to provide enough data to allow for a determination of the type or location of eel passage measures. The 2007 Settlement also indicates the schedules for upstream passage may be delayed contingent upon the returning numbers of target species, and following consultation with and agreement by the FWS, NMFS, Maine Salmon Authority, and Maine DMR. Once these dates are approved and made part of the license for each project, only the Commission can delay the requirement for fish passage. The licensee would be required to petition the Commission for any delay beyond the dates specified and include in its request the concurrence of the agencies pursuant to the 2007 Settlement.

Permanent downstream fish passage measures for Atlantic salmon (the only anadromous species needing downstream passage at Hiram Project) will be operational by the earlier of: (1) April 15 following two years after the licensee receives written notification of the commencement of scheduled annual stocking of juvenile Atlantic salmon in the Saco River watershed above the Hiram dam, but in no case earlier than April 15, 2017; or (2) the operation of permanent upstream fish passage facilities for Atlantic salmon at the Hiram Project.

The licensee will continue to trap adult Atlantic salmon at either the Cataract or Skelton fishway, and truck these fish to release sites in the Maine portion of the Saco River basin until such time as permanent upstream fish passage measures are operational

at each of the licensee's projects. The licensee will also continue to trap adult alewife and blueback herring at either the Cataract or Skelton fishways, and truck these fish to release sites in river reaches below the Hiram Project until such time as permanent upstream passage measures are operational at the Bar Mills, West Buxton, and Bonny Eagle Projects.

The licensee will attempt to improve American shad passage at the Springs Island dam (Cataract Project) according to the provisions in the 2007 Settlement. If the licensee and the FWS, NMFS, and Maine DMR cannot agree by June 1, 2012, that the measures provide effective upstream passage for American shad,[9] the licensee will install a single Denil-type fishway at the location of the Springs Island dam fish lock and lift. The licensee agrees to continue to trap adult American shad at either the Cataract or Skelton fishways and truck the shad to release sites in river reaches below the Hiram Project until such time as permanent upstream passage measures are operational at the Bar Mills, West Buxton, and Bonny Eagle Projects.

The licensee proposes conducting a variety of studies, including a three-year study of Atlantic salmon kelts to determine/examine downstream passage routes at select Saco River sites and a two-year semi-quantitative study of downstream passage effectiveness for clupeids at the Cataract dam during the summers of 2007 and 2008, at the Skelton dam during the summers of 2009 and 2010, and sequentially at the Bar Mills, West Buxton, and Bonny Eagle Projects beginning the year after 6 adult clupeids per acre of impoundment are passed or stocked above the specific project. In the event of unusual environmental conditions, the FWS, NMFS, and Maine DMR in consultation with the licensee may agree to delay the studies. The license will also conduct a three-year study of downstream eel migration timing and routes at the Cataract Project from 2008 through 2010. All studies will be developed in consultation with the NMFS, FWS, MASC, Maine Fisheries and Wildlife, or Maine DMR as applicable. The results will be submitted to the Commission by the licensee after study completion. The resource agencies will be asked for comments on the results, which will be submitted to the Commission with the study results.

The licensee will conduct electro-fishing surveys of smallmouth and largemouth bass populations in the: (1) West Buxton impoundment in 2007 and provide standard bass population data to the Maine Fisheries and Wildlife by March 31, 2008, before introduction of alewife into the impoundment or upstream waters occurs; (2) Bonny Eagle impoundment in 2008 and provide standard bass population data to the Maine Fisheries and Wildlife by March 31, 2009, before introduction of alewife into the

[9] Effective upstream passage is being defined in the 2007 Settlement as allowing for sufficient upstream spawning escapement.

impoundment or upstream waters occurs; and (3) Lake Arrowhead impoundment in 2009 and provide standard bass population data to the Maine Fisheries and Wildlife by March 31, 2010, before introduction of alewife into the impoundment or upstream waters occurs.

The licensee indicates in its filing that if, in making its decisions, the Commission determines that any of the provisions contained in the proposed recommendations (Section 5 of the 2007 Settlement) are not within its jurisdiction to enforce, the Parties request that the Commission expressly and clearly notify the Parties of this in its decision. If the Commission does not expressly identify any of the provisions contained in Section 5 as outside its jurisdiction, the Parties will proceed as though each of the provisions are enforceable by the Commission.

As indicated in the Commission's Policy Statement on Hydropower Licensing Settlements issued September 21, 2006,[10] the Commission, as the agency charged with the administration of hydropower licenses, must approve licensees' post-licensing plans. Thus, settlement conditions that provide that the licensee must file specified plans after obtaining the approval of other parties, such as resource agencies, tribes, or non-governmental organizations, are acceptable if they provide that the plans will be filed with the Commission for its approval, and that the Commission will have the right to revise the plans as it deems necessary. Provisions that envision plans being approved by other entities, but not the Commission, are not acceptable. Where, on the other hand, the parties establish a mechanism that purports to give the licensee and other parties the ability to alter license terms or obligations without first obtaining the Commission's approval, the Commission has revised proposed license articles to include its approval authority.[11]

The proposed studies to be conducted do not include any provisions for the Commission reviewing the study plans before they are implemented. There are provisions for the results of the studies to be submitted to the Commission after the licensee completes the studies and receives comments from the resource agencies. Under the proposed scenario, the Commission will be unable to (1) exercise its authority to ensure the proposed studies contain the necessary measures; (2) ensure the study was completed properly; (3) review final results and recommendations based on the studies; and (4) make any necessary changes based on the results and recommendations.

With each license, the Commission must retain final approval authority over all project structures, including fishways, consistent with its obligation to ensure the

[10] 116 FERC ¶ 61,270.
[11] 105 FERC ¶ 61,102.

structural and operational integrity of the entire project. The various studies proposed in the 2007 Agreement are appropriate and necessary to ensure that the facilities operate efficiently and effectively. As such, the Commission must be able to exercise its authority over the proposed studies. This order should require all studies to be prepared in consultation with the Parties and then submitted to the Commission for final approval. The Commission should reserve the right to require changes to the proposed plans.

The licensee is reminded of its obligation to file functional design drawings and as-built drawings of the facilities upon completion for Commission approval. With the above modifications, the licensee's proposed plans for fish passage and fisheries management at the Skelton Project, Cataract Project, Bonny Eagle Project, Hiram Project, and West Buxton Project should be adequate for providing fish passage on the Saco River and should, therefore, as modified be approved.

The Director orders:

(A) The licensee's March 27, 2007 filing of the 2000-2005 final assessment report – Saco River fish passage adequately fulfills the reporting requirements under the licenses for the Cataract Project, Skelton Project, Bar Mills Project, West Buxton Project, Bonny Eagle Project, and Hiram Project and is approved. The licensee shall no longer file assessment reports on the need for upstream fish passage.

(B) The licensee's recommendations for fish passage and fisheries management at the Skelton Project (FERC No. 2527), Cataract Project (FERC No. 2528), Bonny Eagle Project (FERC No. 2529), Hiram Project (FERC No. 2530), and West Buxton Project (FERC No. 2531), as modified by paragraphs (D) through (F) below, is approved.

(C) The licensee shall have both upstream and downstream eel passage operational at the projects by the following dates:

PROJECT	UPSTREAM EEL PASSAGE OPERATIONAL DATE	DOWNSTREAM EEL PASSAGE OPERATIONAL DATE
Cataract-East and West Channel Dams	June 1, 2008	September 1, 2011
Cataract-Springs/ Bradbury Dam	June 1, 2010	n/a
Skelton	June 1, 2012	September 1, 2024
West Buxton	June 1, 2016	September 1, 2028
Bonny Eagle	June 1, 2018	September 1, 2030
Hiram	June 1, 2020	September 1, 2032

The licensee shall provide a single permanent upstream anadromous fish passage facility at each of the projects according to the following schedule:

PROJECT	OPERATIONAL DATE
West Buxton	May 1, 2019
Bonny Eagle	May 1, 2022
Hiram	May 1, 2025

The licensee shall notify the Commission within 30 days of each facility being completed and operational. Revised Exhibit F drawings showing each facility as-built shall be filed, for Commission approval, within 180 days of completion of each facility.

(D) The licensee shall develop, in consultation with the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and Maine Atlantic Salmon Commission (MASC), a plan for a three-year study of Atlantic salmon kelts to determine/examine downstream passage routes at select Saco River sites. The plan shall include, at a minimum, the following: (1) a phase one desktop study to determine which project have the most potential to delay/affect kelt passage; (2) a phase two study which focuses on the passage routes at no more than two selected project; (3) conducting the study in the spring (3 months) using 20 to 30 fish per year and yield the equivalent information of a radio-telemetry study. The plan shall include a description of the goals and objectives that are to be met, results to be reported, as well as a schedule for implementing the study. The licensee shall submit the plan to the FWS, NMFS, and MASC by April 1, 2009, and allow the agencies at least 30 days to comment and provide recommendations on the plan. By July 1, 2009, the licensee shall file its proposed plan with the Commission, for approval, and include all agency comments and recommendations and any response comments by the licensee. The Commission reserves the right to require changes to the plan.

(E) The licensee shall conduct a two-year semi-quantitative study of downstream passage effectiveness for clupeids (using, for example, standardized observations, video cameras, and rotary screw traps, or similar methods) at the Cataract Project during the summers of 2007 and 2008; at the Skelton Project during the summers of 2009 and 2010; and sequentially at the West Buxton Project and Bonny Eagle Project beginning the year after 6 adult clupeids per acre of impoundment (approximately 790 fish at West Buxton and 2,080 fish at Bonny Eagle) are passed or stocked above the specific project.

Prior to conducting the studies, the licensee shall file a study plan which describes the goals of the study and expectation of results, as well as a description of what is to be included in the summary report to be prepared upon completion of each study. Each study plan shall include a schedule for implementing the study and filing each summary

report. The study plan shall be prepared in consultation with the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and Maine Department of Marine Resources (Maine DMR). The licensee shall allow the agencies 30 days to make comments and recommendations before filing the study plan with the Commission for approval. The licensee's filing shall include any comments or recommendations on the plan and the licensee's response to any comments or recommendations received. The Commission reserves the right to require changes to the plan.

(F) The licensee shall conduct an electro-fishing survey of smallmouth and largemouth bass populations in the West Buxton Project impoundment in 2007, in the Bonny Eagle impoundment in 2008, and in the Lake Arrowhead impoundment in 2009, and provide standard bass population data to the Maine Department of Inland Fisheries and Wildlife and the Commission by March 31, 2008, March 31, 2009, and March 31, 2010, respectively, before introduction of alewife into the impoundment or upstream waters occurs.

The sample data provided for each bass survey shall include sample dates and location, habitat type, sampling depth, gear type, time and duration of the sample and prevailing weather conditions. The standard bass population data (population descriptive metrics) reported shall include number of bass collected during the sampling, species (largemouth or smallmouth), catch per unit effort, weight and length, condition factor, and population age structure and growth rates using scale samples for all Age 1+ bass. The licensee shall provide the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maine Department of Marine Resources, Maine Atlantic Salmon Commission, and MDIFW with numeric abundance data for other species collected during the bass population survey.

(G) This order constitutes final Commission action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. ' 385.713.

Joseph D. Morgan
Director
Division of Hydropower
Administration and Compliance

May 8, 2019

Cataract Project (No. 2528)
Skelton Project (No. 2527)
Bar Mills Project (No. 2194)
West Buxton Project (No. 2531)
Bonny Eagle Project (No. 2529)
Hiram Project (No. 2530)

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: **Saco River Fish Passage Assessment Agreement Amendment for Brookfield White Pine Hydro LLC's Cataract Project (No. 2528), Skelton Project (No. 2527), Bar Mills Project (No. 2194), West Buxton Project (No. 2531), Bonny Eagle Project (No. 2529), Hiram Project (No. 2530).**

Dear Secretary Bose:

On behalf of Brookfield White Pine Hydro LLC (BWPH), licensee for the Cataract Project (No. 2528), Skelton Project (No. 2527), Bar Mills Project (No. 2194), West Buxton Project (No. 2531), Bonny Eagle Project (No. 2529), and Hiram Project (No. 2530), attached for filing is the *Amendment No. 2 to Saco River Fisheries Assessment Agreement* (Amendment) dated February 2019.

On March 26, 2007, FPL Energy Maine Hydro LLC, the previous licensee for the aforementioned assets, filed the *Saco River Fisheries Assessment Agreement* (SRFAA) dated February 2007, concerning fish passage and fisheries management at the above referenced projects on the Saco River in southern Maine. The 2007 Settlement incorporated fish passage recommendations and other fisheries management measures agreed to by the Parties and based upon the findings and conclusions of the 2000 – 2005 fish passage assessment report, prepared pursuant to the requirements of the original 1994 Saco River Fish Passage Agreement. Parties to the 2007 SRFAA include BWPH, the National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (USFWS), Maine Department of Marine Resources (MDMR), Maine Department of Inland Fisheries and Wildlife (MDIFW), Saco Salmon Restoration Alliance (SSRA, formerly the Saco River Salmon Club); Atlantic Salmon Federation (ASF); and the Maine Council of the Atlantic Salmon Federation (MC-ASF).

After nearly 22 total years of studies, data gathering, and advancements, the Parties now agree that implementation of the 2019 Amendment will better help to advance fisheries management and fish passage requirements while still satisfying the Licensee's obligations at the referenced projects for the term of the 2007 SRFAA.

With this letter, the Amendment is being submitted to the Commission for approval. All Parties to the SRFAA agree that the Amendment is fair and reasonable, is supported by substantial evidence, and is in the public interest. The Parties agree that implementing the amended

measures to the 2007 SRFAA will satisfy Licensee's fish management and fish passage requirements.

Background

On March 27, 2007, the Licensee filed its 2000-2005 fish passage assessment report and recommendations, as part of a 1994 settlement offer for fish passage and fisheries management. This filing accompanied a comprehensive settlement agreement, the SRFAA, that incorporated the fish passage recommendations and management measures agreed to by the Parties, including state and federal fisheries resource management agencies and NGOs, and consistent with the Section 18 fish passage prescriptions filed as part of the Bar Mills relicensing.

On July 18, 2007, the FERC issued an order (120 FERC ¶1162,050) modifying and approving the Saco River Fish Passage Assessment Report and recommendations for fish passage and fisheries management by incorporating part of the SRFAA into the respective project licenses. To that end, FERC approved the applicable provisions of Section 5 of the 2007 SRFAA as an offer of settlement for the new Bar Mills Project license and incorporated these provisions as enforceable license conditions for each of the other Saco River projects, as applicable. With the new license issued for the West Buxton Project on February 15, 2018, several continuing measures of the 2007 SRFAA were incorporated as license articles and terms and conditions of the requisite Section 401 Water Quality Certification and Section 18 fish passage prescriptions as discussed in greater detail below.

Bar Mills Project

The applicable provisions of the 2007 SRFAA are incorporated into the August 26, 2008 Bar Mills Project license, as follows:

> License Article 401 – consistent with the conditions of the Section 401 water quality certification and Section 18 fish passage prescriptions, Article 401 requires the filing of the plans and documentation for upstream and downstream eel and fish passage facilities and effectiveness evaluations. The schedule for submitting the required fish passage plans and documentation was filed with the FERC on March 26, 2009 wherein the 2007 SRFAA is referenced as the source document for the required schedules for fish passage plans and documentation.
>
> Section 401 Water Quality Certification – incorporated by reference into the Project license, the Section 401 Water Quality Certification includes the provisions of the 2007 SRFAA. Condition 4 requires upstream eel passage installed and operational at the Bar Mills Project by June 1, 2014. Downstream eel passage is required to be operational by September 1, 2026 under Condition 5. Condition 6 requires upstream anadromous fish passage facilities to be installed and operational by May 1, 2016 and Condition 7 requires the licensee continue to operate and maintain downstream passage facilities at the Project.

Section 18 Fish Passage Prescriptions – Ordering Paragraph E of the License incorporates the conditions submitted by the NMFS and the USFWS under section 18 of the FPA. NMFS April 13, 2007 and USFWS April 13, 2007 Section 18 fish passage prescriptions dictate that: "fishways and/or fish passage measures shall be implemented, constructed, operated, and/or maintained by the Licensee, or provided for by the Licensee, to provide safe, timely and effective passage for Atlantic salmon, American shad, blueback herring, alewife, and American eels as…detailed in the 2007 Agreement". Upstream eel passage is required by June 1, 2014 (NMFS Prescription 6.C.1; USFWS Prescription 11.C.1), downstream eel passage is required by September 1, 2026 (NMFS Prescription 6.C.2; USFWS Prescription 11.C.2); a "single permanent upstream anadromous fish passage facility" is required to be operational by May 1, 2016 (NMFS Prescription 6.D.1; USFWS Prescription 11.D.1) and the existing downstream fish passage facilities are required to continue to be operated and tested (NMFS Prescription 6.E; USFWS Prescription 11.E).

West Buxton Project

BWPH proposed to continue its obligations for fish passage as outlined in the 2007 SRFAA as part of its new license for the West Buxton Project, issued by FERC on February 15, 2018. Consistent with the 2007 SRFAA, the 2018 West Buxton Project license has the following obligations for fish passage:

License Article 401 – consistent with the conditions of the Section 401 water quality certification and Section 18 fish passage prescriptions, Article 401 requires the filing of the plans and documentation for upstream and downstream eel and fish passage facilities and effectiveness evaluations. In accordance with Article 401, upstream anadromous fishway designs were required to be filed by January 31, 2019, for facilities operational by May 1, 2020. A request for a one year extension of time to file fishway designs to accommodate discussions leading to the filing of this 2019 Amendment was submitted on January 25, 2019. Downstream eel passage designs are due to be filed by March 31, 2028.

Section 401 Water Quality Certification – incorporated by reference into the Project license, the Section 401 Water Quality Certification includes the provisions of the 2007 SRFAA. Condition 3 requires upstream anadromous fish passage facilities to be installed and operational by May 1, 2020 or otherwise in accordance with the 2007 SRFAA. Downstream eel passage is required to be operational by September 1, 2028 or otherwise in accordance with the 2007 SRFAA under Condition 4.

Section 18 Fish Passage Prescriptions – USFWS December 19, 2016 Section 18 fish passage prescriptions and NMFS October 5, 2017 modified Section 18 fish passage prescriptions dictate that: "Licensee shall install permanent upstream and downstream fishways and/or fish passage measures at this project. These fishways and measures shall be designed, constructed, operated, maintained, and monitored by the Licensee, or provided for by the Licensee. Those fishways shall provide safe, timely, and effective passage for the target species: Atlantic salmon, American shad, blueback herring,

alewife, and American eels during their migration periods. Provisions of this fishway prescription are consistent with the 1994 Saco River Fish Passage Agreement, the 1997 Saco River Instream Flow Agreement, and the 2007 Agreement". Downstream eel passage is required by September 1, 2028 (NMFS Prescription VII.1.b; USFWS Prescription V.A.1.b); a "single permanent upstream anadromous fish passage facility" is required to be operational by May 1, 2018 (USFWS Prescription V.A.2) and by May 1, 2020 (NMFS Prescription VII.2); and the existing downstream fish passage facilities are required to continue to be operated and tested (NMFS Prescription VII.3; USFWS Prescription V.A.3).

Cataract, Skelton, and Hiram Projects

The July 2007 FERC Order incorporates aspects of the 2007 SRFAA into the remaining projects' licenses, as follows:

(A) The licensee's March 27, 2007 filing of the 2000-2005 final assessment report – Saco River fish passage adequately fulfills the reporting requirements under the licenses for the Cataract Project, Skelton Project, Bar Mills Project, West Buxton Project, Bonny Eagle Project, and Hiram Project and is approved. The licensee shall no longer file assessment reports on the need for upstream fish passage.

(B) The licensee's recommendations for fish passage and fisheries management at the Skelton Project (FERC No. 2527), Cataract Project (FERC No. 2528), Bonny Eagle Project (FERC No. 2529), Hiram Project (FERC No. 2530), and West Buxton Project (FERC No. 2531), as modified by paragraphs (D) through (F) below, is approved.

(C) The licensee shall have both upstream and downstream eel passage operational at the projects by the following dates:

PROJECT	**UPSTREAM EEL PASSAGE OPERATIONAL DATE**	**DOWNSTREAM EEL PASSAGE OPERATIONAL DATE**
Cataract-East and West Channel Dams	June 1, 2008	September 1, 2011
Cataract-Springs/Bradbury Dam	June 1, 2010	n/a
Skelton	June 1, 2012	September 1, 2024
West Buxton	June 1, 2016	September 1, 2028
Bonny Eagle	June 1, 2018	September 1, 2030
Hiram	June 1, 2020	September 1, 2032

The licensee shall provide a single permanent upstream anadromous fish passage facility at each of the projects according to the following schedule:

PROJECT	**OPERATIONAL DATE**
West Buxton	May 1, 2019

Bonny Eagle	May 1, 2022
Hiram	May 1, 2025

The licensee shall notify the Commission within 30 days of each facility being completed and operational. Revised Exhibit F drawings showing each facility as-built shall be filed, for Commission approval, within 180 days of completion of each facility.

(D) The licensee shall develop, in consultation with the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and Maine Atlantic Salmon Commission (MASC), a plan for a three-year study of Atlantic salmon kelts to determine/examine downstream passage routes at select Saco River sites. The plan shall include, at a minimum, the following: (1) a phase one desktop study to determine which project have the most potential to delay/affect kelt passage; (2) a phase two study which focuses on the passage routes at no more than two selected project; (3) conducting the study in the spring (3 months) using 20 to 30 fish per year and yield the equivalent information of a radio-telemetry study. The plan shall include a description of the goals and objectives that are to be met, results to be reported, as well as a schedule for implementing the study. The licensee shall submit the plan to the FWS, NMFS, and MASC by April 1, 2009, and allow the agencies at least 30 days to comment and provide recommendations on the plan. By July 1, 2009, the licensee shall file its proposed plan with the Commission, for approval, and include all agency comments and recommendations and any response comments by the licensee. The Commission reserves the right to require changes to the plan.

(E) The licensee shall conduct a two-year semi-quantitative study of downstream passage effectiveness for clupeids (using, for example, standardized observations, video cameras, and rotary screw traps, or similar methods) at the Cataract Project during the summers of 2007 and 2008; at the Skelton Project during the summers of 2009 and 2010; and sequentially at the West Buxton Project and Bonny Eagle Project beginning the year after 6 adult clupeids per acre of impoundment (approximately 790 fish at West Buxton and 2,080 fish at Bonny Eagle) are passed or stocked above the specific project. Prior to conducting the studies, the licensee shall file a study plan which describes the goals of the study and expectation of results, as well as a description of what is to be included in the summary report to be prepared upon completion of each study. Each study plan shall include a schedule for implementing the study and filing each summary report. The study plan shall be prepared in consultation with the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and Maine Department of Marine Resources (Maine DMR). The licensee shall allow the agencies 30 days to make comments and recommendations before filing the study plan with the Commission for approval. The licensee's filing shall include any comments or recommendations on the plan and the licensee's response to any comments or recommendations received. The Commission reserves the right to require changes to the plan.

(F) The licensee shall conduct an electro-fishing survey of smallmouth and largemouth bass populations in the West Buxton Project impoundment in 2007, in the Bonny Eagle impoundment in 2008, and in the Lake Arrowhead impoundment in 2009, and provide

standard bass population data to the Maine Department of Inland Fisheries and Wildlife and the Commission by March 31, 2008, March 31, 2009, and March 31, 2010, respectively, before introduction of alewife into the impoundment or upstream waters occurs. The sample data provided for each bass survey shall include sample dates and location, habitat type, sampling depth, gear type, time and duration of the sample and prevailing weather conditions. The standard bass population data (population descriptive metrics) reported shall include number of bass collected during the sampling, species (largemouth or smallmouth), catch per unit effort, weight and length, condition factor, and population age structure and growth rates using scale samples for all Age 1+ bass. The licensee shall provide the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maine Department of Marine Resources, Maine Atlantic Salmon Commission, and MDIFW with numeric abundance data for other species collected during the bass population survey.

Since 2007, the licensee has remained consistent with the Agreement conditions by conducting the various studies outlined in Section 5 of the SRFAA and as required by ordering paragraphs D, E, and F above and by providing funding to various agencies and organizations as described in other provisions within the SRFAA. With respect to the requirements of Ordering Paragraphs D, E, and F of the 2007 FERC Order, the following studies have been completed at the Projects:

Ordering Paragraph D – Atlantic Salmon Kelt Study

On July 2, 2009, NextEra Energy Maine Operating Services, LLC, the previous licensee for the projects, filed its Saco River Kelt Passage Plan, which was approved by FERC on August 18, 2009. The Phase I Study, which discussed the five relevant projects (Cataract, Skelton, Bar Mills, West Buxton, and Bonny Eagle) with regard to their potential for affecting kelt passage considering such variables as location, intake depths, trashrack configurations and dimensions, capacity and operations, was filed with the FERC on January 27, 2011. The goal of the Phase I study was to identify, through site ranking, the most limiting project to be recommended as a field study site, with the assumption that if kelts can pass the most limiting project, passage at other projects would be more successful. The Skelton Project ranked highest among the five candidate study sites, primarily due to lack of spillway passage potential, dam height and the depth of gates.

On July 26, 2011, the licensee filed the Saco River Phase 2 Kelt Passage Evaluation Plan which was acknowledged by FERC by letter dated November 3, 2011. The plan outlined measures for a Phase 2 radio telemetry study of kelt passage routes at the Skelton and Bar Mills Projects to be conducted in 2012. However, due to recurring low returns of adult Atlantic salmon, kelt studies have been indefinitely postponed.

Ordering Paragraph E – Downstream Clupeid Passage

On February 20, 2008, the licensee submitted the 2007 Downstream Passage of Juvenile Clupeids Report at the Cataract Project. Downstream passage of clupeids using underwater video imagery was monitored via the five possible downstream passage

routes at the Cataract Project in 2007 using marked juvenile clupeids. The results indicated that downstream passage for alosine was effective at the Skelton Project and an additional juvenile clupeid downstream passage study at the Cataract Project was proposed. On June 19, 2008, the licensee filed its Juvenile Clupeid Downstream Passage Study Plan with the FERC, which was approved on September 9, 2008, which intended to replicate the video monitoring efforts of 2007 with proposed modifications to the downstream fish passage facility. However, the proposed modifications to the downstream passage facility could not be completed in time for the study and, coupled with high flows, the licensee, in consultation with the agencies, proposed to instead conduct quantitative downstream passage studies at the Cataract Project, the report for which was to be submitted to the FERC on April 29, 2010. This study was attempted in 2010, 2011 and 2012 with various reasons for incompletion including lack of available prototype tags, extreme meteorological events, and high flows. On March 29, 2013, the licensee filed an update of the requirements of Ordering Paragraph E wherein "the fragile nature of tagging and handling juvenile clupeids combined with site specific challenges at the Cataract Project have provided multiple impediments to the successful completion of the project". Based on this and "strong suggestive evidence that there is no issue that the Project", a request to defer further studies was submitted. By letter dated May 13, 2013, FERC acknowledged the repeated attempts at completion and indicated that "despite the fact that you were unable to obtain conclusive data regarding downstream juvenile clupeid passage at the project, you have fulfilled all of the abovementioned (Ordering Paragraph E) requirements".

Ordering Paragraph F – Bass Population Study

The studies at the West Buxton and Bonney Eagle Projects were conducted in compliance with and conformity to Maine Department of Inland Fisheries and Wildlife sampling and collection protocols and consisted of a habitat survey and an electrofishing survey. The study was undertaken for the West Buxton impoundment in 2007 and at the Bonney Eagle Project in 2008. The West Buxton study report was filed with the FERC on February 12, 2008 and FERC acknowledged that the report fulfills the requirements of Ordering Paragraph F on June 30, 2008. The Bonney Eagle study report was filed with the FERC on December 9, 2008 and FERC acknowledged that the report fulfills the requirements of Ordering Paragraph F on February 12, 2009.

The implementation of upstream and downstream fish passage facilities has been conducted consistent with the provisions of the Agreement and as required by the 2008 Bar Mills License, 2018 West Buxton License, and Ordering Paragraph C for the remaining projects, in consultation with the agencies, allowing for deferral as appropriate and as discussed below.

Upstream Eel Passage

Upstream eel passage facilities are in place and operational at the following Projects: Cataract-East and West Channel Dams; Cataract-Springs/Bradbury Dam; Skelton; Bar Mills West Buxton and Bonny Eagle. On April 23, 2019, BWPH, submitted the 2018 Upstream Eel Passage Monitoring Report for the Hiram Project. As a result of the

findings of the study, which resulted in low numbers of eel observed, BWPH also requested to delay upstream American eel passage construction and operation at the Hiram Project from June 1, 2020, as required by Ordering Paragraph B, until June 1, 2025. That request, supported by the NMFS, USFWS and MDMR, is pending before FERC.

Downstream Eel Passage

Downstream eel passage measures, consisting of night-time shut-downs in September and October have been implemented at the Cataract Project to date in compliance with the 2007 SRFAA and Ordering Paragraph C. Downstream eel passage at other facilities is to be installed beginning in 2024 pursuant to existing license requirements and the 2007 SRFAA.

Upstream Fish Passage

Upstream fish passage facilities exist at the Cataract and Skelton Projects, and pre-date the 2007 SRFAA.

The 2008 Project License and 2007 SRFAA require upstream fish passage to be operational at the Bar Mills Project by May 1, 2016. On November 1, 2017, BWPH filed an extension of time request to May 1, 2020 to install and commence operation of an upstream anadromous fish passage facility at the Bar Mills Project. Previous extensions of time (to May 1, 2018 and May 1, 2019) had been previously granted to avoid interference with a Maine Department of Transportation (MDOT) bridge replacement project that was occurring within the project boundary. In the 2017 request, BWPH clarified that discussions with the USFWS, NMFS, and MDMR had centered around alternative fish passage measures on the Saco River that may be more beneficial than a new fish passage facility at the Bar Mills Project. FERC approved the extension of time on January 18, 2018.

On July 24, 2017, BWPH filed an extension of time request to May 1, 2020 to construct and commence operation of an upstream anadromous fish passage facility at the West Buxton Project, in compliance with Ordering paragraph (C) of the Commission's July 18, 2007 Order and the 2007 SRFAA. BWPH requested an extension to install and commence operation of an upstream anadromous fish passage facility at the Project as a result of project relicensing, low and inconsistent river herring returns, and limited shad habitat above the Project. The extension of time was granted on October 4, 2017. As discussed above, a new license was issued for the Project on February 15, 2018 which reiterated the operational date of May 1, 2020 for upstream fish passage facilities at the Project[1].

[1] As a result of renegotiations of the 2007 SRFAA, which were expected to result in a delay of implementation of fish passage at the West Buxton Project, an extension of time to file final design plans by one year (to January 31, 2020) was requested by BWPH to allow sufficient time to file the resulting Amendment, contained herein. The extension is currently pending before FERC.

The Licensee and the Parties conduct annual and ad hoc meetings, scheduled as necessary or as part of the fishway design process, to discuss the progress, research, and advancement to the Saco River fisheries resources in accordance with the 2007 SRFAA. As a result, it has become clear that an amendment to certain areas of the original 2007 SRFAA are needed to accommodate the latest information and advancements gained as a result of the implementation of the provisions of the 2007 SRFAA undertaken to date.

Section 5 Revisions to be Incorporated as License Conditions

The 2019 Amendment (attached) includes the following applicable revisions to Section 5.3.b.1 of the 2007 SRFAA. In accordance with the 2019 Amendment, Section 5.3.b.1 is deleted in its entirety and replaced with the following:

"b. Permanent Upstream Passage Facilities

1. Licensee will provide a single permanent upstream anadromous fish passage facility at each of the Projects, or an alternative method agreed upon and approved by the Parties, at its cost and according to the following schedule:

Bar Mills	May 1, 2015
West Buxton	May 1, 2027
Bonny Eagle	May 1, 2029
Hiram	May 1, 2032

a. Licensee and the other Parties agree to meet annually to discuss Licensee's upstream fish passage efforts until passage is operational. Licensee will, by no later than May 1, 2021, commit to the final Bar Mills fish passage plan by issuing a written letter stating its plan to all of the Parties. Such letter shall be concurrently filed with FERC on the Bar Mills docket.

If the Resource Agencies determine that Licensee's upstream fish passage intentions include a timely commitment to a fish passage design that will be more effective than that contemplated in the SRFAA, but will be completed after the May 1, 2025 deadline for Bar Mills, the Resource Agencies may agree, after consultation with the other signatories, to delay Licensee's upstream fish passage requirements at Bar Mills, West Buxton, Bonny Eagle and Hiram on a yearly basis. Licensee agrees that any changes to the fish passage timelines set forth in this Section 5.3.b.1 shall require an adjustment to the financial amounts committed to in Section 4 of this Agreement.

b. West Buxton Project is to be completed within two (2) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1.

c. Bonny Eagle Project is to be completed within four (4) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1.

d. Hiram Project is to be completed within seven (7) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1."

In addition, BWPH will commit to making improvements, as determined in consultation with the agencies, to the upstream and downstream fish passage facilities at the Cataract and Skelton Projects. BWPH will file as built drawings showing any modifications to existing facilities, once completed, and will coordinate construction of such modifications, as necessary, with the FERC New York Regional Office.

The above provisions have been carefully considered and balanced during the 2019 Amendment discussions in consideration of the management priorities of the agencies, the effect of each measure on the overall restoration of migratory species to the Saco River watershed, and their effect upon the developmental resources of the Projects. The Parties to the 2007 SRFAA and the 2019 Amendment agree that the proposed measures are both in the public interest and beneficial to the fishery resources of the watershed and will fulfill fisheries assessment and passage requirements.

BWPH requests that FERC not contravene the provisions of Section 5 therein and issue one or more FERC Orders that integrate the terms and provisions of Section 5 of the 2019 Amendment into the license conditions for the applicable Projects. If, in making its decisions, the Commission determines that any of the provisions contained in Section 5 are not within its jurisdiction to enforce, the Parties request that the Commission expressly and clearly notify the Parties of this in its order(s). BWPH is seeking subsequent modifications to its Section 401 water quality certifications for the Projects and any necessary modifications to its Section 18 fish passage prescriptions concurrently with this request.

Should you have any questions regarding this filing, please contact Matt LeBlanc at matthew.leblanc@brookfieldrenewable.com or by phone at 207-252-4870.

Thank you,

Kelly Maloney
Manager, Compliance - Northeast

Attachments: 2019 Amendment No. 2 to Saco River Fisheries Assessment Agreement

Cc: S. Michaud, N. Stevens, F. Dunlap, J. Seyfried, M. LeBlanc, J. Rancourt; BWPH

SACO RIVER
FISHERIES ASSESSMENT AGREEMENT AMENDMENT No. 2

Brookfield White Pine Hydro LLC (f/k/a FPL Energy Maine Hydro LLC)
Cataract Project (No. 2528)
Skelton Project (No. 2527)
Bar Mills Project (No. 2194)
West Buxton Project (No. 2531)
Bonny Eagle Project (No. 2529)
Hiram Project (No. 2530)

FEBRUARY 2019

AMENDMENT NO.2 TO SACO RIVER FISHERIES ASSESSMENT AGREEMENT

This Amendment No. 2 to Saco River Fisheries Assessment Agreement (the "**Amendment**") is entered into as of February 14, 2019.

Reference is made to that certain Saco River Fisheries Assessment Agreement (SRFAA), dated as of February 2007, among FPL Energy Maine Hydro LLC ("**FPL Energy**"), U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maine Atlantic Salmon Commission, Maine Department of Inland Fisheries and Wildlife (MDIFW), Maine Department of Marine Resources (MDMR), Saco River Salmon Club, Atlantic Salmon Federation, Maine Council of the Atlantic Salmon Federation (MC-ASF), Saco River Hydro, LLC and New Hampshire Fish and Game Department (collectively, the "**Original Signatories**"), as amended by that certain Amendment No. 1 to Saco River Fisheries Assessment Agreement, dated as of May 2009, among FPL Energy and the Original Signatories (as amended, supplemented or otherwise modified from time to time, the "**SRFAA**"). Unless otherwise defined herein, capitalized terms defined in the SRFAA and used herein shall have the meanings given to them in the SRFAA.

WHEREAS, Brookfield White Pine Hydro LLC (as successor in interest to FPL Energy) ("**Brookfield**" or "**Licensee**"), the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, (as successors in interest to the Original Signatories) (the "**Resource Agencies**"), Saco Salmon Restoration Alliance, Atlantic Salmon Federation, and the Maine Council of the Atlantic Salmon Federation have agreed to further amend the SRFAA as provided herein.

NOW THEREFORE, in consideration of the mutual agreements set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Amendments to SRFAA.

(a) Section 2.19 of the SFRAA is hereby deleted in its entirety and replaced with the following:

"2.19 Adjustment of Financial Amounts

Except where otherwise specified herein, all financial amounts committed to in Section 4 of this Agreement are in 2018 dollars and shall be adjusted every three (3) years, beginning in 2020, according to the Gross Domestic Product: Implicit Price Deflator as published by the U.S. Department of Commerce."

(b) Section 4.1 of the SRFAA is hereby deleted in its entirety and replaced with the following:

"4.1 Funds to Support Inland Fisheries Habitat Restoration, Stream Connectivity and Management

Licensee agrees to support various fisheries management projects which may include but are not limited to: enhancing and restoring inland fisheries habitat and habitat connectivity; assessing inland fisheries populations; and/or the implementation of inland fisheries management activities within the Saco River Basin. Licensee agrees to fund such activities up to an aggregate of $10,000 per year for eleven years (2019-2029), for a total of $110,000.

The MDIFW shall, with input and consideration from MDMR, develop inland fisheries management activities funded under this section. For any activities located partially or wholly within Licensee's FERC Project boundaries, MDIFW and Licensee shall, with input and consideration from MDMR, develop management activities funded under this section. Such agreement shall not be unreasonably withheld. Unless MDIFW and Licensee agree to a planned alternative schedule of activities and funding, Licensee will fund activities by $10,000 per year for eleven years beginning in 2019, with an ability to accrue funding in escrow to cover larger planned projects. In no case shall Licensee be required to exceed the total funding required under this section."

(c) Section 4.2 of the SRFAA is hereby deleted in its entirety and replaced with the following:

"4.2 Funds to Support Saco Salmon Restoration Alliance

Licensee agrees to pay a one-time grant of $36,000 for upgrades to the hatchery of the Saco Salmon Restoration Alliance ("SSRA"). Such funds will be expended by the SSRA for continued rearing and stocking of Atlantic salmon as part of the overall restoration goals for the Saco River Watershed."

(d) Section 4.4 of the SRFAA is hereby deleted in its entirety and replaced with the following:

"4.4 Funds to Support Public Education

Licensee agrees to provide total funding of $10,000 to the MC-ASF for the Fish Friends program expansion exclusive to schools within the Saco River Watershed. Funding will be used expressly to provide necessary aquarium equipment and aquarium maintenance equipment for the addition of ten schools, or to replace faulty equipment at participating schools currently obtaining eggs from the SSRA hatchery. The intent of the education program will be to promote thIne cooperative fisheries management and fisheries restoration efforts on the Saco River. The Parties agree that the funding will be provided in $2,000 installments so that equipment purchases can be made by October of each year, beginning in 2018. Exceptions to the above schedule to delay a single year's funding by up to one year or to combine it with the funds for the following year may be requested by consensus of the Parties, which request will not be unreasonably denied by Licensee. However, in no case shall such request require the total funding by Licensee under this section to be increased beyond $10,000. MC-ASF will manage this fund as an account at an accredited financial institution. If this account bears interest, that interest shall be part of the fund and treated no differently than funds deposited by Licensee. SSRA agrees to provide MC-ASF with one (1) itemized invoice annually for equipment purchases. The Parties agree that account debits will not be unreasonably denied or withheld. SSRA will be asked to provide an annual report to both Licensee and MC-ASF for all eligible purchases until such time that the funds are fully expended. MC-ASF agrees to provide SSRA and Licensee with annual, year-end statements from the accredited financial institution. The Parties agree that residual funds will remain in the aforementioned account until such time as they are fully expended for the purposes stated above.

Notwithstanding the above, Licensee will not be required to expend funds under this section beyond the year 2024. The Parties agree that the expansion of the Fish Friends program will be a cooperative joint effort by the MC-ASF, SSRA and Licensee."

(e) Section 5.3.b.1 of the SFRAA is hereby deleted in its entirety and replaced with the following:

"b. Permanent Upstream Passage Facilities

1. Licensee will provide a single permanent upstream anadromous fish passage facility at each of the Projects, or an alternative method agreed upon and approved by the Parties, at its cost and according to the following schedule:

PROJECT	OPERATIONAL DATE
Bar Mills	May 1, 2025
West Buxton	May 1, 2027
Bonny Eagle	May 1, 2029
Hiram	May 1, 2032[1]

a. Licensee and the other Parties agree to meet annually to discuss Licensee's upstream fish passage efforts and design at the Bar Mills Project until passage is operational. Licensee will, by no later than May 1, 2021, commit to the final Bar Mills fish passage plan by issuing a written letter stating its plan to all of the Parties. Such letter shall be concurrently filed with FERC on the Bar Mills docket.

If the Resource Agencies determine that Licensee's upstream fish passage intentions include a timely commitment to a fish passage design that will be more effective than that contemplated in the SRFAA, but will be completed after the May 1, 2025 deadline for Bar Mills, the Resource Agencies may agree, after consultation with the other signatories, to delay Licensee's upstream fish passage requirements at Bar Mills, West Buxton, Bonny Eagle and Hiram on a yearly basis. Licensee agrees that any changes to the fish passage timelines set forth in this Section 5.3.b.1 shall require an adjustment to the financial amounts committed to in Section 4 of this Agreement.

b. West Buxton Project is to be completed within two (2) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1.

[1] Provided that the Resource Agencies determine that such facility is necessary based upon the status of salmon restoration at that time.

c. Bonny Eagle Project is to be completed within four (4) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1.

d. Hiram Project is to be completed within seven (7) years of the approved completion date for Bar Mills, including any extensions to that date that the Resource Agencies have granted under the terms of Section 5.3.b.1."

2. Acknowledgements. Brookfield and the Resource Agencies hereby acknowledge and agree:

(a) Construction and Improvements at Cataract East and West and Skelton described in paragraph (b) below, and the Springs Island nature-like fishway ("NLF"), shall be completed no later than May 1, 2020. Licensee will conduct no less than two (2) years of upstream and downstream fish passage studies for adult and juvenile alewife and American shad (the "Study") beginning in the Spring of 2021 or the Spring following the completion of the NLF. Additional years may be needed depending on environmental conditions and Study results, but the Study period will not extend beyond a total of three (3) years for each applicable facility unless agreed upon by Licensee and the other Resource Agencies. The purpose of the Study is to assess the passage improvements made at Cataract East and West, the new NLF at Springs Island and Skelton. The Study will use standard telemetry techniques to determine near-field and far-field attraction, passage efficiencies, and downstream mortality. The design of the Study will be reviewed and approved by the Resource Agencies before filing with FERC. Annual Study results will be reviewed and used to inform subsequent studies. Upstream and downstream passage issues that may be identified based on Study results and specifically noted by the Resource Agencies will be addressed through minor structural, mechanical, operational or procedural adjustments by Licensee.

(b) Licensee will implement the USFWS/NMFS Engineering Recommendations for Saco River Projects ("Improvements"), identified within the USFWS memorandum dated July 26, 2017 ("Memo") and attached hereto as Attachment D, to resolve the issues related to fish passage at Cataract East and West and Skelton ("Issues") identified therein. These Improvements are intended to be structural in nature, however, it is recognized that alternative solutions may be adopted to address the Issues, provided that: (1) the Resource Agencies agree that such solutions are more effective than the Improvements; (2) such solutions are consistent with the 2017 FWS Fish Passage Engineering Design Criteria, or are otherwise approved by the Resource Agencies; and (3) such solutions are within a similar scope and cost to the Improvements. Construction will be completed no later than May 1, 2020 (the "Construction Completion Date") except that, if there is a deviation from the Design Schedule (as defined below) resulting from the actions of any signatory to this Agreement that is not the Licensee, the Construction Completion Date shall be extended by a period equal to the Design Schedule delay. Prior to implementing the Improvements, Licensee will undergo a complete design review process (30, 60, 90% designs) according to a design schedule ("Design Schedule") to be established by the Resource Agencies in consultation with Licensee. The Resource Agencies must approve such designs before construction is commenced. The Resource Agencies will review the existing O&M plans, including the Cataract East and West stranding protocol, and will provide feedback to Licensee to ensure they are sufficient to avoid stranding-associated mortality of fish species.

(c) The completion date for the Springs Island NLF remains May 1, 2020.

(d) Section 4.3 of the SRFAA remains in effect and shall continue up to and through the Bonny Eagle Project completion date (2029) as described in Section 5.3.b.1 of the SRFAA (as amended herein).

3. Effectiveness of Amendment. This Amendment shall become effective upon execution by all of the Parties in accordance with Section 2.8 of the SRFAA (the "**Amendment Effective Date**"). Licensee shall also file with the FERC those modifications set forth in this Amendment that pertain to Section 5 of the SRFAA.

4. Reference to and Effect on the SRFAA. On or after the Amendment Effective Date, each reference to the SRFAA shall be deemed to refer to the SRFAA as amended hereby.

5. Continuing Effectiveness of SRFAA. As amended hereby, all terms of the SRFAA shall be and remain in full force and effect and shall constitute the legal, valid, binding and enforceable obligations of each of the parties thereto.

6. Effect of Amendment. The execution, delivery and effectiveness of this Amendment shall not, except as expressly provided herein, operate as a waiver of any right, power or remedy of a party to the SRFAA, nor constitute a waiver of any provision of the SRFAA.

7. Amendments and Waivers. No amendment, modification, termination, or waiver of any provision of this Amendment will be effective except in compliance with Section 2.8 of the SRFAA.

8. Severability. Whenever possible, each provision of this Amendment will be interpreted in such manner as to be effective and valid under applicable law. In the event any provision of this Amendment is or is held to be invalid, illegal, or unenforceable under applicable law, such provision will be ineffective only to the extent of such invalidity, illegality, or unenforceability, without invalidating the remainder of such provision or the remaining provisions of this Amendment.

9. Successors and Assigns. This Amendment shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

10. Governing Law. This Amendment shall be construed and governed in accordance with the Federal Power Act and Federal Law, for those portions of the Amendment within the jurisdiction of FERC. The remainder shall be construed and governed by the laws of the State of Maine, without regard to Maine's conflict of law principles.

11. Counterparts. This Amendment may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which, when so executed and delivered, will be deemed an original and all of which shall together constitute one and the same instrument. This Amendment may be executed and delivered by facsimile or e-mailed PDF transmission of a manually signed counterparty.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed as of the date first above written by their respective duly authorized officers.

BROOKFIELD WHITE PINE HYDRO LLC

By: _____
Name: Walter Di Cesare
Title: Vice President & Secretary

By: _____
Name: Thomas Uncher
Title: Vice President

U.S. FISH AND WILDLIFE SERVICE

By: _____
Name:
Title:

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name:
Title:

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: _____
Name:
Title:

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title:

SACO SALMON RESTORATION ALLIANCE

By: _____
Name:
Title:

ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

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BROOKFIELD WHITE PINE HYDRO LLC

By: _____
Name:
Title:

By: _____
Name:
Title:

U.S. FISH AND WILDLIFE SERVICE

By: _____
Name: Anna Harris
Title: Maine Ecological Services Project Leader

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name:
Title:

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

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U.S. FISH AND WILDLIFE SERVICE

By: _____
Name:
Title:

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name:
Title:

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name: GERARD T EGGERS
Title: President, Maine Council

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: _____
Name:
Title:

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title:

SACO SALMON RESTORATION ALLIANCE

By: _____
Name:
Title:

ATLANTIC SALMON FEDERATION

By: _____
Name: JOHN BURROWS
Title: Director, N.E. Programs

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed as of the date first above written by their respective duly authorized officers.

BROOKFIELD WHITE PINE HYDRO LLC

By: _____
Name:
Title:

By: _____
Name:
Title:

U.S. FISH AND WILDLIFE SERVICE

By: _____
Name:
Title:

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name:
Title:

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: _____
Name:
Title:

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title: Commissioner

SACO SALMON RESTORATION ALLIANCE

By: _____
Name:
Title:

ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

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BROOKFIELD WHITE PINE HYDRO LLC

By: _____
Name:
Title:

By: _____
Name:
Title:

U.S. FISH AND WILDLIFE SERVICE

By: _____
Name:
Title:

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name: Michael Pentony
Title: Regional Administrator

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: _____
Name:
Title:

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title:

SACO SALMON RESTORATION ALLIANCE

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BROOKFIELD WHITE PINE HYDRO LLC

By: _____
Name:
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U.S. FISH AND WILDLIFE SERVICE

By: _____
Name:
Title:

NATIONAL MARINE FISHERIES SERVICE

By: _____
Name:
Title:

MAINE COUNCIL OF THE ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: James M Connolly
Name: James M Connolly
Title: Director Bureau Resource Management

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title:

SACO SALMON RESTORATION ALLIANCE

By: _____
Name:
Title:

ATLANTIC SALMON FEDERATION

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Name:
Title:

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

By: _____
Name:
Title:

MAINE DEPARTMENT OF MARINE RESOURCES

By: _____
Name:
Title:

SACO SALMON RESTORATION ALLIANCE

By: John Blunt
Name:
Title: President 2/6/2019

ATLANTIC SALMON FEDERATION

By: _____
Name:
Title:

Exhibit B-5

Methods for Biological Sampling and Analysis of Maine's Rivers and Streams

Susan P. Davies
Leonidas Tsomides

DEP LW0387-C2014
Revised April, 2014

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

METHODS

FOR

BIOLOGICAL SAMPLING AND ANALYSIS OF

MAINE'S RIVERS AND STREAMS

Susan P. Davies

Leonidas Tsomides

Maine Department of Environmental Protection
Bureau of Land and Water Quality
Division of Environmental Assessment
Augusta, Maine 04333
January, 1987

Revised April, 2014

Printed under Account #: 010 06A 1327 102

Cover Design: Thomas J. Danielson
Photo Credit: *Paragnetina immarginata* by Eric D. Fleek, North Carolina Division of Water Quality

CONTENTS

FOREWORD

This manual describes the field, laboratory and data preparation methods required by the Maine Department of Environmental Protection to collect and analyze benthic macroinvertebrate samples for the River and Stream Biological Monitoring Program. The biological classification of Maine's inland waters was authorized by the Maine State Legislature with the passage of Public Law 1985 Chapter 698 - The Classification System for Maine Waters. This law states that it is the State's objective "to restore and maintain the chemical, physical and biological integrity" of its waters, and establishes a water quality classification system to enable the State to manage its waters so as to protect their quality. The classification system further establishes minimum standards for each class, which are based on designated uses, and related characteristics of those uses, for each class of water.

Each water quality class contains standards that, among other things, describe the minimum condition of the aquatic life necessary to attain that class. The Maine Department of Environmental Protection (the Department) has developed numeric criteria in support of the narrative aquatic life standards in the Water Quality Classification Law. The Department has collected a large, standardized database consisting of benthic macroinvertebrate samples from above and below all significant licensed discharges in the State, from areas impacted by non-point sources, as well as from relatively unperturbed areas. These sampling locations were chosen to represent the range of water quality conditions in the State. This information has been used to develop numeric criteria which are specific to the natural biotic community potential of the State of Maine (see Davies et al., 1995 and 1999 for a description of the development and application of numeric criteria) and is established in DEP regulation Chapter 579 : Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams.

Standardization of data collection and analytical methods is fundamental to the consistent, unbiased and scientifically sound evaluation of aquatic life impacts. This manual sets forth the standardized practices and procedures used by the Department to acquire or accept benthic macroinvertebrate data for use in regulation, assessment or program development.

Biological Monitoring Unit
Division of Environmental Assessment
Bureau of Land and Water Quality
Maine Department of Environmental Protection
Augusta, Maine 04333
207-287-3901

I GENERAL METHODS FOR RIVER AND STREAM AQUATIC LIFE CLASSIFICATION ATTAINMENT EVALUATION

Each water quality class is defined by standards that describe the minimum condition of the aquatic community necessary to attain that class. The benthic macroinvertebrate community is used as an indicator community of the general state of the aquatic life in flowing waters for the purpose of assessment of classification attainment. Standardized sampling techniques and sample analysis are required for assessment of biological attainment of stream water quality classification. This manual presents the standard practices and procedures that have been adopted by the Department to acquire benthic macroinvertebrate data for purposes of aquatic life classification attainment evaluation.

Purpose:

To determine the water quality class attained by a particular river or stream reach in terms of the aquatic life standards set forth in 38 MRSA Sec. 465 (The Classification System for Maine Waters).

Requirements:

All samples of aquatic life that are collected for purposes of classification attainment evaluation, whether collected by the Department or by any party required to make collections by the Department, must be collected, processed and identified in conformance with the standardized methods outlined in this manual. Selection of appropriate sampling sites and micro-habitat to sample, as well as procedures for quantitative analysis of the sample must conform to methods set forth in this manual. Data submitted by any party required to make collections by the Department must be accompanied by a Quality Assurance Plan, approved by the Commissioner.

1. Qualifications of Sampling Personnel

Biological sampling must be performed by a professional aquatic biologist or by qualified personnel under the supervision of a professional aquatic biologist. The professional aquatic biologist must have, as a minimum, a Bachelor of Science degree in biological sciences with aquatic entomology, invertebrate zoology, fisheries or closely related specialization, and greater than 6 months experience working with macroinvertebrate sampling methods and taxonomy. (See also Qualifications of Laboratory Personnel, Sec. II-1.)

2. Apparatus, Equipment, Supplies, Instruments

(1) Sampling devices

a) Rock-filled wire basket introduced substrate

Use: flowing wadeable, eroded, mineral-based bottom rivers and streams.

Description: cylindrical plastic coated or chrome wire, baskets with at least 1.5 cm spaces between wires, a hinged opening, and secure closure (Klemm, D.J. et al, 1990).

Substrate material: clean, washed, bank-run cobble, graded to uniform diameter range of 3.8 to 7.6 cm (1.5 to 3 inches) in size (#2 roofing stone).

Baskets must be filled to 7.25 +/- 0.5 kg (16 lbs +/-1 lb) of substrate material.

b) Rock-filled mesh bag introduced substrate

Use: small flowing streams, too shallow for rock baskets to be fully submerged.

Description: mesh bags of sufficient size to hold 7.25 +/- 0.5 kg of cobble substrate as described above, with at least 2.54 cm aperture mesh, and secure closures.

c) Closing introduced substrate cone

Use: deep, non-wadeable rivers having sufficient flow to have an eroded, mineral based bottom.

Description: cone shaped wire, or plastic coated wire basket filled with substrate material and closed by means of an inverted, weighted funnel (Courtemanch, 1984).

Substrate material: (see above Rock-filled wire basket substrate material).

(2) Sieves, sieve buckets, nets

Samples are concentrated on sieves having a mesh size between 500 - 600 microns (USA Standard Testing Sieve ASTM-E-11 Specification size No. 30 or No. 35).

(3) Optical equipment

a) Binocular microscope: Magnification range from 10x or less to 30x or greater.

b) Compound microscope: Magnification range from 10x to at least 400x; 100x with oil immersion lens is advisable.

3. Sampling Season, Sampler Exposure Period, Placement and Retrieval

(1) Sampling season

The standard sampling season upon which all macroinvertebrate classification criteria are based is the late summer, low flow period (July 1 to September 30). All baseline data for the biological classification program has been collected during this time period. This period often presents conditions of maximal stress to the biological community due to decreased dilution of pollutional material and increased stream water temperatures. Furthermore, because the composition of the benthic macroinvertebrate community changes with season, due to natural life history features, this period defines a standardized seasonal community.

As noted, the Department's linear discriminant models define biological classification criteria derived from a macroinvertebrate community defined by the specific sampling methods and index season under which they were collected. Samples collected at other times of year may yield valuable water quality related information, however classification attainment may not be assigned solely on the basis of results of the linear discriminant models for these non-standard samples.

(2) Exposure period

Standard methods require that substrate samplers be exposed in the water body for a period of 28 days +/- four days within the above-specified sampling season. However, extended exposure periods may be necessary to allow for adequate colonization in the case of assessments of low velocity or impounded habitats. If such conditions exist a 56 days +/- four days exposure period may be used.

(3) Sampler placement

Rock Baskets/Bags

The actual sampler location should be approached so as to avoid any disturbance in, or upstream of, the sampled site. Position baskets in locations of similar habitat characteristics. Orient baskets with the long axis parallel to stream flow. Provide for relocation of baskets by flagging trees in the vicinity and/or by drawing a diagram with appropriate landmarks indicated.

Cones

Cone samplers should be marked with individual marker buoys (milk jugs or other suitable float) leaving about 5 extra feet of line to allow for water level changes and to provide for easy retrieval. They should be placed on the substrate with a minimum of disturbance, in an apex-up position, and located in the approximate middle fifty percent of the channel. (Note however, care should be taken not to create an obstruction to boat traffic.) In areas subject to vandalism, or in rivers having extensive macrophyte beds, it may be necessary to attach the sampler lines to a common anchor and thence to one unobtrusive surface float. Retrieval funnels will not properly close when lines are fouled with drifting macrophytes.

(4) Sampler retrieval

Rock Baskets/ Bags

Baskets are approached from downstream. Excessive accumulations of macrophytes, algae or debris clinging to the outside of the basket should be carefully removed, taking care to avoid jarring the basket itself. An aquatic net or drift net (mesh size 500 - 600 microns) is positioned against the substrate immediately downstream of the basket which is then quickly lifted into the net. The contents of the basket and all net washings are emptied into a sieve bucket (500 - 600 microns); the basket wires are carefully cleaned first, then rocks are hand washed and inspected and returned to the basket. All sieve bucket contents are placed in sample jars. A small amount of stream water and 95% ethyl alcohol is added to yield an approximately 70% solution of alcohol. Especially dense samples should be re-preserved in the laboratory, with fresh 70% ethyl alcohol. Rock baskets should be thoroughly cleaned and allowed to desiccate prior to re-use.

Cones

Cone samplers should be retrieved with the boat anchored directly upstream of the samplers. Once the float is retrieved and removed, the line should be held as vertically as possible while the weighted funnel is released down the line to enclose the cone. Cone and funnel should be retrieved quickly and smoothly from the bottom, and released directly into a sieve bucket or tub. Field processing should then proceed as described above for rock baskets.

4. Site Selection Criteria

Classification criteria apply to a strictly defined sample of the benthic macroinvertebrate community. Habitat type from which the community is obtained is a significant determinant of the make-up of the target community. Benthic macroinvertebrate communities of flowing streams and rivers having a hard, eroded substrate comprise the majority of samples in the baseline data set. This habitat is characteristic of the majority of the river and stream waters of the State. Exceptions to these conditions may require special consideration and the exercise of professional judgment. (Note: See Section III-2. (3) "Classification attainment evaluation of waters subjected to flow regulation" page 13, for procedures relating to the assessment of regulated flow sites.) While it is useful to obtain both an upstream and downstream sample to evaluate the effect of a pollution source, classification attainment evaluation does not require data from a matched reference site in order to arrive at a determination of aquatic life class. Analytical methods for classification attainment evaluation are described in Section III.

(1) Site attributes

a) The area selected should be generally representative of the habitat of the stream reach as a whole;
b) Where there is alternating riffle/pool habitat, the riffle/run is the habitat of choice;
c) A location should be selected where there is a high degree of certainty that the rock basket samples will remain fully submerged even if the water level drops significantly.

(2) Precautions

a) Avoid atypical influences such as bridges, entering culverts, channelized areas such as road crossings, culverts, or obstructions to flow;
b) Avoid bank effects: samplers should be located in the middle 50% of the bank to bank width, or in an area with a flow regime typical of the overall character of the stream segment;
c) Avoid slackwater areas and eddies immediately upstream or downstream of large rocks or debris.

(3) Matching reference and effluent impacted sites

If possible both stream reaches should be viewed prior to selection of sampling sites. Efforts should be made to sample habitats which are comparable in the following characteristics:

a) Water velocity;
b) Substrate composition (i.e., size ranges and proportions of particles making up the substrate);
c) Canopy coverage;
d) Depth;
e) Other upstream influences except the pollution source in question (for example, use caution when one site is just below a lake outfall and the other is not).

(4) Factors to be considered in site selection below point sources

The area of initial dilution of an effluent should be determined by visual observation of the plume pattern; by observations of biotic effects attributable to the plume, if evident (periphyton growth, die-off patterns); and by transects of specific conductance measurements from the outfall, in a downstream direction. The site selected should be in an area where reasonable opportunity for mixing of the effluent has occurred. If a mixing zone has been defined in a license, sampling should occur immediately downstream of it. In cases where the effluent plume channels down one bank for great distances (>1 km), or where localized effluent impact is expected to be severe for a distance beyond the zone of initial dilution, it is advisable to have a sampling site upstream of the source, one or more in the plume, and at least two farther downstream. One downstream site should be located at the point of presumed bank to bank mixing and subsequent sites should be located to assess the extent of impact downstream.

5. Sample Size

The biological community is evaluated on the basis of benthic macroinvertebrates obtained from at least three samplers which yield an average of at least 50 organisms per sampler. Matched upstream and downstream sites must be sampled using identical methods and level of effort, preferably by the same personnel.

Subsampling may be performed on samples if the mean number of organisms in a sampler exceeds 500 and subsampling will yield at least 100 organisms per rock/cone sampler. All samplers in a site should be treated consistently. Subsampling methods are described in Section II-5. Note: Subsampling will

reduce sample richness by an indeterminate amount. This may affect the outcome of linear discriminant analysis. See Section III-2. (2).

6. Physical Habitat Evaluation

A field data sheet (Appendix A) is to be completed at the time of sampler placement. This form records site specific information concerning natural variables that may affect community structure. Items addressed include exact site location (latitude and longitude, narrative description of the mapped location and/or a topographic map with site indicated); substrate composition; canopy coverage; land use and terrain characteristics; water velocity, temperature, dates of exposure and investigator name. The form is to be completed by observation as well as instrument measurement of water velocity, specific conductance, dissolved oxygen, global positioning device, temperature, etc.

II LABORATORY METHODS

1. Qualifications of Laboratory Personnel

Sample processing and taxonomy in the laboratory must be performed or supervised by a professional freshwater macroinvertebrate taxonomist who is certified by the Society of Freshwater Science in the identification of eastern US taxa. Certification must include Genus level categories, such as Ephemeroptera, Plecoptera and Trichoptera (EPT), General Arthropods and Chironomidae taxa. Taxonomic data will not be accepted without verification that the supervising laboratory taxonomist has been certified in relevant categories.

2. Sample Preservation, Sorting

All sample material collected in the field, as described in Section I, is preserved in 70% ethyl alcohol. Samples are stored in airtight containers until sorted. Sorting of macroinvertebrates from detritus and debris should follow methods described in Appendix B. One out of every ten samples is evaluated by a biologist for sorting completeness.

After sorting, recommended storage for macroinvertebrates is in 70% ethyl alcohol with 5% glycerin, in vials sealed with tightly fitting rubber stoppers.

3. Sample Labeling

All samples are labeled in the field immediately upon collection. The label must include the following information:

Date of sample retrieval
Waterbody
Town or target discharge
Whether above or below the discharge (if applicable)
Replicate number

4. Sample Log Book

In the laboratory, the samples from each sampled site are to be assigned a sample log number, written on all items generated by the sample (e.g., sample vials, slides, records, count sheets, etc.). Log numbers are sequentially recorded in a master log book. The log book shall also contain site identification, date of placement and retrieval, investigator name, sampler type and any comments regarding sampler retrieval or data quality.

5. Subsampling

(1) Methods

If it is determined that a sample should be subsampled (see criteria in Section I-5 Sample Size) methods of Wrona et al, (1982) are followed. These are summarized below:

a) Fit a plastic or glass Imhoff-type settling cone with an aquarium air stone sealed in the bottom and connected to a compressed air supply.

b) Place the sorted macroinvertebrate sample in the cone and fill the apparatus with water to a total volume of one liter.

c) Agitate gently for 2 to 5 minutes with the air stone.

d) Remove 25% of the sample in 5 aliquots with a wide-mouth 50 ml dipper and combine into one sample vial. The dipper should be submerged and withdrawn over a five second interval.

e) Ascertain whether or not the required 100 organisms have been obtained in the subsample.

f) Indicate clearly on the sample label and on the data sheet the fraction of the sample that the subsample represents.

(2) Precautions

a) Especially large or dense organisms such as crayfish, molluscs or caddisflies with stone cases, which do not suspend randomly in the sample, should not be included in the subsample. They should be counted separately.

b) When removing aliquots, the subsampler should be careful to avoid biased capture of organisms in the cone. Avoid watching the cone as the dipper is withdrawn.

This method has been tested by the Department and has been found to randomly distribute the sample. The five separate counts conform to a Poisson series and thus can be combined into one sample (Elliott, 1979).

(3) Chironomidae subsampling

A subsampling plan for Chironomidae shall be approved by the Department. A Department recommended subsampling plan follows the following criteria:

a) For samples having less than 100 midges, all midges will be identified to genus/species level.

b) For samples having 100 to 199 midges, a subsample of one half (0.5) will be removed by randomly selecting the specimens to be identified and identified to genus/species level. Remaining unsampled midges will be examined for unusual or rare specimens, which will be removed and identified to genus/species level separate from the subsample of the sample.

c) For samples having 200 to 499 midges, a subsample of one quarter (0.25) will be removed by randomly selecting the specimens to be identified and identified to genus/species level. Remaining unsampled midges will be examined for unusual or rare specimens, which will be removed and identified to genus/species level separate from the subsample of the sample.

d) For samples having 500 or more midges, midges will be grouped by genus for those for which it is possible to confidently identify them to genus level without mounting. For remaining midges not grouped by genus, a subsample of 100 specimens will be randomly selected and identified to genus/species level. Remaining unsampled midges will be examined for unusual or rare specimens, which will be removed and identified to genus/species level separate from the subsample of the sample.

e) Reporting of the subsample of the sample will be as follows. Numbers reported on the Excel spreadsheet will be converted to reflect the sample total. Any round-off errors between the subsample total and the sample total will be equalized by adding or deducting the difference from the most numerous taxon. If unusual or rare specimens are removed from the sample following the subsample removal, the conversion of the subsample total to a "partial" sample total will be based on the sample total minus the number of unusual or rare specimens. Following this procedure, the number of unusual or rare specimens will be added to the "partial" sample total to bring it back to the sample total.

6. Sample Taxonomy

All taxonomic data submitted to the Department must be accompanied by the name(s) of the individual(s) actually performing the identifications. A list of taxonomic references used, and a reference collection of organisms must also be submitted (see below).

(1) Taxonomic resolution

Macroinvertebrate organisms are identified to genus in all cases where possible. If generic keys are not available or taxonomic expertise is lacking for a taxon it should be identified to the lowest level possible. Identification of organisms to species is highly recommended whenever possible. Although quantitative analysis of benthic macroinvertebrate samples by the Department is based on counts adjusted to the generic level of resolution, species designations are recorded in the Department database and can contribute to the final stage of data analysis, Professional Judgment Evaluation of the model outcome. This is especially important for Class Insecta. Taxonomists submitting data for use by the Department must use current taxonomic references.

(2) Identification of Chironomidae

Specimens of chironomid midges are identified from slide mounts of the cleared head capsule and body parts. Euparol or Berlese mounting medium is recommended for preparation of slides. CMCP-9 is recommended for the preparation of permanent slide mounts of reference material, for voucher specimens or for permanent collections. These slides should be prepared under a fume hood. Instructions for preparation and slide mounting may be found in Wiederholm, (1983). In samples in which a given taxon is represented by a large number of individuals, the identification to genus may be made from slide mounts of a sufficient proportion of the individuals to give a high degree of certainty that they are all the same (10-50% depending on

the distinctiveness of the taxon visible under binocular microscope). A subsampling plan for Chironomidae is described in Section II-5. Each permanent slide mount is to be fully labeled or coded in a manner which positively associates the slide with the sample from which it originated.

(3) Quality control

All organisms and records from any sampling event intended to serve regulatory purposes must be preserved for a period of at least ten years. In the course of identifying taxa collected as part of the Department's biological monitoring program, or in other collection activities, a special reference collection of separate taxa is established. This collection allows subsequent identifications of the same taxon to be confirmed and thus serves to standardize taxonomy for the program.

Each contracted taxonomist, working for the Department or working for anyone submitting data to the Department, will be required to submit a reference collection of taxa identified, as well as a list of the taxonomic references used in the identifications. Organism identifications will be checked against the Department's collection by a Department taxonomist.

III ANALYTICAL METHODS

In general, it is the responsibility of the Department, or its agents, to conduct sampling for the purpose of making decisions on the attainment of water quality classification. Under certain conditions, sampling may be required of applicants for waste discharge licenses, or applicants requiring Section 401 Water Quality Certification. Sampling may be performed by corporations, businesses, organizations or individuals who can demonstrate their qualifications and ability to carry out the Department's sampling and analytical protocol, described in this manual. Such monitoring will be conducted according to a quality assurance plan provided to the Department and approved by the Commissioner.

Classification attainment evaluation is established in DEP regulation Chapter 579: Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams. Davies et al, 1995 details the conceptual and technical basis for the State’s application of linear discriminant analysis to assess attainment of aquatic life standards. A synopsis of Chapter 579 follows in this section.

1. Minimum Provisions

Properly collected and analyzed samples that fail to achieve the following criteria are unsuitable for further analysis through the numeric criteria statistical models:

- Total Mean Abundance must be at least *50* individuals (average per basket/bag/cone);
- Generic Richness for three replicate basket/bag/cone samplers must be at least *15*.

Samples not attaining these criteria shall be evaluated by Professional Judgment. A determination will be made whether the affected community requires re-sampling or whether the community demonstrates non-attainment of minimum provisions of the aquatic life standards.

2. Aquatic Life Statistical Decision Models

The four statistical decision models consist of linear discriminant functions developed to use quantitative ecological attributes of the macroinvertebrate community (Appendix C-1) to determine the strength of the association of a test community to any of the water quality classes (Appendix D). The coefficients or weights are calculated using a linear optimization algorithm to minimize the distance, in multivariate space, between sites within a class, and to maximize the distance between sites between classes.

(1) Linear discriminant models

The discriminant function has the form:

$$Z = C + W_1X_1 + W_2X_2 + ...W_nX_n$$

Where: Z = discriminant score
C = constant
W_i = the coefficients or weights
X_i = the predictor variable values

Association values are computed, using variable values from a test sample, for each classification using one four-way model and three two-way models. The four-way model uses nine variables pertinent to the evaluation of all classes and provides four initial probabilities that a given site attains one of three classes (A, B, or C), or is in non-attainment (NA) of the minimum criteria for any class. These probabilities have a possible range from 0.0 to 1.0, and are used, after transformation, as variables in each of the three subsequent final decision models. The final decision models (the three, two-way models)

are designed to distinguish between a given class and any higher classes as one group and any lower classes as the other group (i.e., Classes A+B+C vs. NA; Classes A+B vs. Class C+NA; Class A vs. Classes B+C+NA). The equations for the final decision models use the predictor variables relevant to the class being tested (Appendix E). The process of determining attainment class using association values is outlined in Appendix F.

(2) Application of professional judgment

Where there is documented evidence of conditions which could result in uncharacteristic findings, allowances may be made to account for those situations by adjusting the classification attainment decision through use of professional judgment as provided in DEP regulation Chapter 579: Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams. The Department may make adjustments to the classification attainment decision based on analytical, biological, and habitat information or may require that additional monitoring of affected waters be conducted prior to issuing a classification attainment decision.

Professional Judgment may be utilized when conditions are found that are atypical to the derivation of the linear discriminant model. Factors that may allow adjustments to the model outcome include but are not limited to:

a) Habitat factors
- Lake outlets
- Impounded waters
- Substrate characteristics
- Tidal waters

b) Sampling factors
- Disturbed samples
- Unusual taxa assemblages
- Human error in sampling

c) Analytical factors
- Subsample vs. whole sample analysis
- Human error in processing

(3) Classification attainment evaluation of waters subjected to flow regulation

The Maine State Legislature, in 38 MRSA Article 4-A Sec. 464 (9)-(10), *The Water Classification Program*, acknowledges that changes to aquatic life and habitat occur as the result of the impoundment of riverine waters and has modified the standards of waters so affected. The habitat and aquatic life criteria of riverine impounded waters of Class A, Class B or Class C are

deemed to be met if the impoundment attains the standards of Class C (e.g., maintenance of structure and function of the resident biological community). Impoundments managed as Great Ponds must also attain Class C aquatic life standards. If the actual water quality attains any more stringent characteristic or criterion than the Class C standards dictate, then the waterbody must be managed so as to protect those higher characteristics. Class C standards also apply to the *downstream* waters below certain specified riverine impoundments on the Kennebec River and the Saco River (Wyman Dam, Moosehead East Outlet Dam, West Buxton Dam and Skelton Dam) that are classified as A or B. All other waters subjected to flow regulation are managed according to standards of the water quality classification assigned by the Legislature.

(4) Adjustments of a decision

It is the responsibility of the Department to decide if adjustments of a decision should occur. The following adjustments may be made to correct for these conditions:

a) Resample
The Department may require that additional monitoring of the test community be done before a determination of class attainment can be made, based on documented evidence of specific sampling factors that may have influenced the results.

b) Raise the finding
   i. The Department may raise the classification attainment outcome predicted by the model from non-attainment of any class to indeterminate or to attainment of Class C, based on documented evidence of specific conditions, as defined above.

   ii. The Department may raise the classification attainment outcome predicted by the model from attainment in one class to attainment in the next higher class, based on documented evidence of specific conditions, as defined above.

c) Lower the finding
The Department may decide to lower the classification attainment finding, on the basis of documented, substantive evidence that the narrative aquatic life criteria for the assigned class are not met.

d) Determination of non-attainment: minimum provisions not met
Samples having any of the ecological attributes not attaining the minimum provisions, and where there is no evidence of conditions which could result in uncharacteristic findings, as defined above, must be determined to be in non-attainment of the minimum provisions of the aquatic life criteria for any class.

e) Determination of attainment: minimum provisions not met
Where there is evidence of factors that could result in minimum provisions not being met, professional judgment may be used to make a professional finding of attainment of the aquatic life criteria for any class. Such decisions will be provisional until appropriate resampling is carried out.

(5) Sampling procedures do not conform

For classification attainment evaluation of test communities that do not conform to criteria provided in Section I General Methods, or Section III-1, Minimum Provisions, of this manual, and are therefore not suitable to be run through the linear discriminant models, the Department may make an assessment of classification attainment or aquatic life impact in accordance with the following procedures:

a) Approved assessment plan
A quantitative sampling and data analysis plan must be developed in accordance with methods established in the scientific literature on water pollution biology, and shall be approved by the department.

b) Determination of sampling methods
Sampling methods are determined on a site-specific basis, based on habitat conditions of the sampling site, and the season sampled:

i. Soft-bottomed substrates shall, whenever ecologically appropriate and practical, be sampled by core or dredge of known dimension or volume.

ii. The preferred method for sampling hard-bottomed substrates shall be the rock basket/cone/bag as described in Section I-2.

iii. Other methods may be used where ecologically appropriate and practical.

c) Classification attainment decisions
Classification attainment decisions may be based on a determination of the degree to which the sampled site conforms to the narrative aquatic life classification criteria provided in 38 MRSA Section 465 and found in Appendix D. The decision is based on established principles of water pollution biology and must be fully documented.

d) Site-specific impact decisions
Site-specific impact decisions may rely on established methods of analysis of comparative data between a test community and an approved reference community.

e) Determination of detrimental impact
A determination of detrimental impact to aquatic life of a test community without an approved reference community may be made if it can be documented, based on established methods of the interpretation of macroinvertebrate data, and based on established principles of water pollution biology, that the community fails to demonstrate the ecological attributes of its designated class as defined by the narrative aquatic life standards in the water quality classification law.

Maine DEP Biological Monitoring Unit
Stream Macroinvertebrate Field Data Sheet

Log Number _____
Station Number_____
Waterbody_____
River Basin_____
Municipality_____
Stream Order_____

Directions_____
_____
_____
Lat-Long Coordinates (WGS84, meters)
Latitude_____
Longitude_____

Type of Sample_____
Date Deployed_____
Number Deployed_____
Date Retrieved_____
Number Retrieved_____
Agency/Collector(s)_____

1. Land Use (500 m radius upstream)
☐ Urban ☐ Upland conifer
☐ Cultivated ☐ Swamp hardwood
☐ Pasture ☐ Swamp conifer
☐ Upland hardwood ☐ Marsh

2. Terrain (500 m radius upstream)
☐ Flat
☐ Rolling
☐ Hilly
☐ Mountains

3. Canopy Cover (upstream view)
☐ Dense (75-100% shaded)
☐ Partly open (25-75% shaded)
☐ Open (0-25% shaded)
(% daily direct sun) _____

4. Physical Characteristics of Bottom (estimate % of each component over 12 m stretch of site; total = 100%)
[ ] Bedrock [ ] Rubble (3" – 10") [ ] Sand (<1/8")
[ ] Boulders (<10") [ ] Gravel (1/8" – 3") [ ] Silt-clay-muck [ ] Detritus

5. Habitat Characteristics (immediate area)

Time _____AM PM	Time _____AM PM
Width (m) _____	Width (m) _____
Depth (cm) _____	Depth (cm) _____
Flow (cm/s) _____	Flow (cm/s) _____
Diss. O_2 (ppm)_____	Diss. O_2 (ppm)_____
Temp (°C) _____	Temp (°C) _____
pH _____	pH _____
SPC (µS/cm) _____	SPC (µS/cm) _____
TDS (ppm) _____	TDS (ppm) _____

Temperature Probe # _____
☐ deployed ☐ retrieved

6. Observations (describe)
Fish_____
Algae_____
Macrophytes_____
Habitat quality_____
Dams/impoundments_____
Discharges_____
Nonpoint stressors _____

7. Water Samples
☐ Standard
☐ Metals
☐ Pesticides

Lab Number

8. Photographs

9. Landmarks of Sampler Placement (illustrate or describe landmarks to be used for relocation)

Appendix B

Instructions for Macroinvertebrate Sorters

1. Pick the sample **in small portions** (1-2 TBS of material) at a time.

2. Pick all organisms you can see. If in doubt it's usually best to include it.

3. Some types of samples can be easily floated by adding a saturated solution of Epsom salt or sugar to the water. Maintain the saturated solution for the lab by adding enough salt or sugar to water to maintain a thick layer of crystals on the bottom of the storage jar. Use the supernatant solution for picking. Large numbers of organisms can be removed with a sieve spoon from the water surface. After the floaters have been removed, proceed to pick the rest of the sample as usual. A significant portion of the sample will not float and must be picked out with forceps.

4. The sample can be considered done when a careful 45 second search, after swirling the sample, yields no further organisms.

5. The samples are picked in water but should not remain unpreserved for more than 8 hours. Be certain that the final sample vial is preserved with 70% alcohol and 5% glycerin solution when done.

6. Return the detrital material to the original sample jar and preserve with 70% alcohol.

7. Write on the sample jar label "Picked X1 (your initials)".

8. Include in the vial of organisms a slip of index card label in hard pencil (No. 2) including **all information appearing on the original jar label**:

   Log Number — River
   Date - month/day/year — Location (Town or industry name)
   whether above or below
   Basket or Cone number
   Vial number if more than 1 vial is needed per basket

   ex. Log 621 Sandy R. 9/5/97
   Below Farmington (disturbed)
   Basket 2 vial #1 of 2

9. Complete all samples from one log number before beginning a new log number.

10. Keep a record of samples picked including log number

    Basket number — Time spent per basket
    Your name — Date

Appendix C-1

Methods for the Calculation of Indices and Measures of Community Structure Used in the Linear Discriminant Models

Variable Number

1 **Total Mean Abundance**

Count all individuals in all replicate samples from one site and divide by the number of replicates to yield mean number of individuals per sample.

2 **Generic Richness**

Count the number of different genera found in all replicates from one site.

Counting rules for Generic Richness:

a) All population counts at the species level will be aggregated to the generic level.

b) A family level identification which includes no more than one taxon identified to the generic level is counted as a separate taxon in generic richness counts.

c) A family level identification with more than one taxon identified to generic level is not counted towards generic richness. Counts are to be divided proportionately among the genera that are present.

d) Higher level taxonomic identifications (Phylum, Class, Order) are not counted toward generic richness unless they are the only representative.

e) Pupae are ignored in all calculations.

3 **Plecoptera Mean Abundance**

Count all individuals from the order Plecoptera in all replicate samplers from one site and divide by the number of replicates to yield mean number of Plecopteran individuals per sampler.

4 **Ephemeroptera Mean Abundance**

Count all individuals from the order Ephemeroptera in all replicate samplers from one site and divide by the number of replicates to yield mean number of Ephemeropteran individuals per sampler.

5 **Shannon-Wiener Generic Diversity (Shannon and Weaver, 1963)**

After adjusting all counts to genus following counting rules in Variable 2:

$$\bar{d} = \frac{c}{N}\left(N \log_{10} N - \sum n_i \log_{10} n_i\right)$$

where: $\bar{d}$ = Shannon-Wiener Diversity
c = 3.321928 (converts base 10 log to base 2)
N = Total abundance of individuals
n_i = Total abundance of individuals in the i^{th} taxon

6 **Hilsenhoff Biotic Index (Hilsenhoff, 1987)**

$$HBI = \sum \frac{n_i a_i}{N}$$

where: HBI = Hilsenhoff Biotic Index
n_i = number of individuals in the i^{th} taxon
a_i = tolerance value assigned to that taxon
N = total number of individuals in sample with tolerance values.

7 **Relative Chironomidae Abundance**

Calculate the mean number of individuals of the family Chironomidae, following counting rules in Variable 4, and divide by total mean abundance (Variable 1).

8 **Relative Diptera Richness**

Count the number of different genera from the Order Diptera, following counting rules in Variable 2, and divide by generic richness (Variable 2).

9 ***Hydropsyche* Mean Abundance**

Count all individuals from the genus *Hydropsyche* in all replicate samplers from one site, and divide by the number of replicates to yield mean number of *Hydropsyche* individuals per sampler.

10 **Probability (A + B + C) from First Stage Model**

Sum of probabilities for Classes A, B, and C from First Stage Model.

11 ***Cheumatopsyche* Mean Abundance**

Count all individuals from the genus *Cheumatopsyche* in all replicate samplers from one site and divide by the number of replicates to yield mean number of *Cheumatopsyche* individuals per sampler.

12 **EPT - Diptera Richness Ratio**

EPT Generic Richness (Variable 19) divided by the number of genera from the order Diptera, following counting rules in Variable 2. If the number of genera of Diptera in the sample is 0, a value of 1 is assigned to the denominator.

13 **Relative Oligochaeta Abundance**

Calculate the mean number of individuals from the Order Oligochaeta, following counting rules in Variable 4, and divide by total mean abundance (Variable 1).

14 **Probability (A + B) from First Stage Model**

Sum of probabilities for Classes A and B from First Stage Model.

15 **Perlidae Mean Abundance (Family Functional Group)**

Count all individuals from the family Perlidae (Appendix C-3) in all replicate samplers from one site and divide by the number of replicates to yield mean number of Perlidae per sampler.

16 **Tanypodinae Mean Abundance (Family Functional Group)**

Count all individuals from the subfamily Tanypodinae (Appendix C-3) in all replicate samplers from one site and divide by the number of replicates to yield mean number of Tanypodinae per sampler.

17 **Chironomini Mean Abundance (Family Functional Group)**

Count all individuals from the tribe Chironomini (Appendix C-3) in all replicate samplers from one site and divide by the number of replicates to yield mean number of Chironomini per sampler.

18 **Relative Ephemeroptera Abundance**

Variable 4 divided by Variable 1.

19 **EPT Generic Richness**

Count the number of different genera from the Order Ephemeroptera (E), Plecoptera (P), and Trichoptera (T) in all replicate samplers, according to counting rules in Variable 2, generic richness.

20 **Variable Reserved**

21 **Sum of Mean Abundances of**: ***Dicrotendipes, Micropsectra, Parachironomus* and *Helobdella***

Sum the abundance of the 4 genera and divide by the number of replicates (as performed in Variable 4).

22 **Probability of Class A from First Stage Model**

Probability of Class A from First Stage Model.

23 **Relative Plecoptera Richness**

Count number of genera of Order Plecoptera, following counting rules in Variable 2, and divide by generic richness (Variable 2).

24 **Variable Reserved**

25 **Sum of Mean Abundances of *Cheumatopsyche, Cricotopus, Tanytarsus* and *Ablabesmyia***

Sum the number of individuals in each genus in all replicate samplers and divide by the number of replicates (as performed in Variable 4).

26 **Sum of Mean Abundances of *Acroneuria* and *Stenonema***

Sum the number of individuals in each genus in all replicate samplers and divide by the number of replicates (as performed in Variable 4).

27 **Variable Reserved**

28 **Ratio of EP Generic Richness**

Count the number of different genera from the order Ephemeroptera (E), and Plecoptera (P) in all replicate samplers, following counting rules in Variable 2, and divide by 14 (maximum expected for Class A).

29 **Variable Reserved**

30 **Ratio of Class A Indicator Taxa**

Count the number of Class A indicator taxa as listed in Appendix C-2 that are present in the community and divide by 7 (total possible number).

Appendix C-2

Indicator Taxa: Class A

Brachycentrus (Trichoptera: Brachycentridae)
Serratella (Ephemeroptera: Ephemerellidae)
Leucrocuta (Ephemeroptera: Heptageniidae)
Glossosoma (Trichoptera: Glossosomatidae)
Paragnetina (Plecoptera: Perlidae)
Eurylophella (Ephemeroptera: Ephemerellidae)
Psilotreta (Trichoptera: Odontoceridae)

Appendix C-3

Family Functional Groups

PLECOPTERA

Perlidae
Acroneuria
Attaneuria
Beloneuria
Eccoptura
Perlesta
Perlinella
Neoperla
Paragnetina
Agnetina

CHIRONOMIDAE

Tanypodinae
Ablabesmyia
Clinotanypus
Coelotanypus
Conchapelopia
Djalmabatista
Guttipelopia
Hudsonimyia
Labrundinia
Larsia
Meropelopia
Natarsia
Nilotanypus
Paramerina
Pentaneura
Procladius
Psectrotanypus
Rheopelopia
Tanypus
Telopelopia
Thienemannimyia
Trissopelopia
Zavrelimyia

Appendix C-3

Family Functional Group (continued)

Chironomini
Pseudochironomus
Axarus
Chironomus
Cladopelma
Cryptochironomus
Cryptotendipes
Demicryptochironomus
Dicrotendipes
Einfeldia
Endochironomus
Glyptotendipes
Goeldichironomus
Harnischia
Kiefferulus
Lauterborniella
Microchironomus
Microtendipes
Nilothauma
Pagastiella
Parachironomus
Paracladopelma
Paralauterborniella
Paratendipes
Phaenopsectra
Polypedilum
Robackia
Stelechomyia
Stenochironomus
Stictochironomus
Tribelos
Xenochironomus

Appendix D

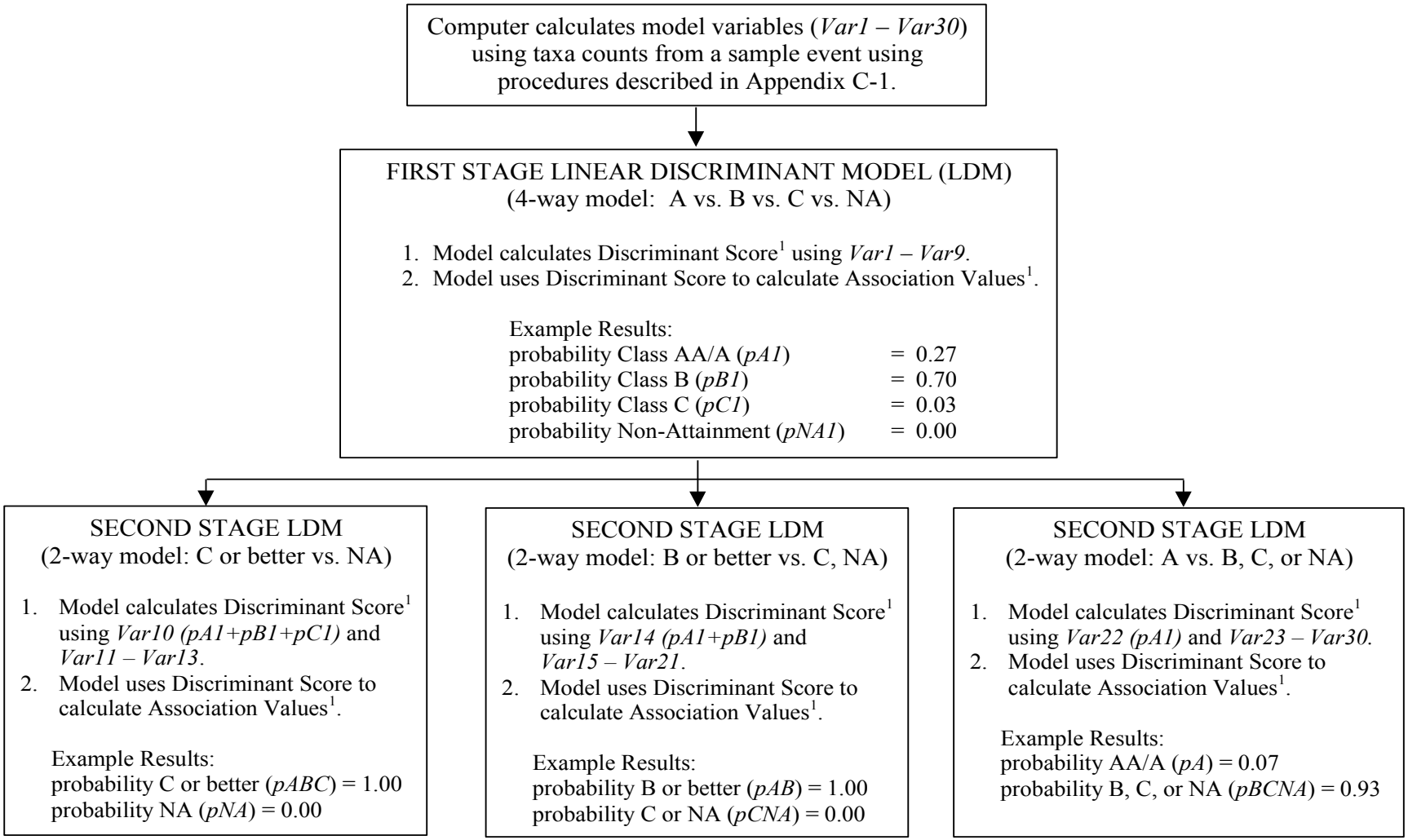
MRSA 38, 4-A Sec 464-465

Aquatic Life Standards for the State of Maine

Classification	Biological Standards
AA	No direct discharge of pollutants; aquatic life shall be as naturally occurs.
A	Natural habitat for aquatic life; aquatic life shall be as naturally occurs.
B	Unimpaired habitat for aquatic life; discharges shall not cause adverse impact to aquatic life in that the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.
C	Habitat for aquatic life; discharges may cause some changes to aquatic life, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community.

Appendix E

Process of Calculating Model Variables and Association Values Using Linear Discriminant Models

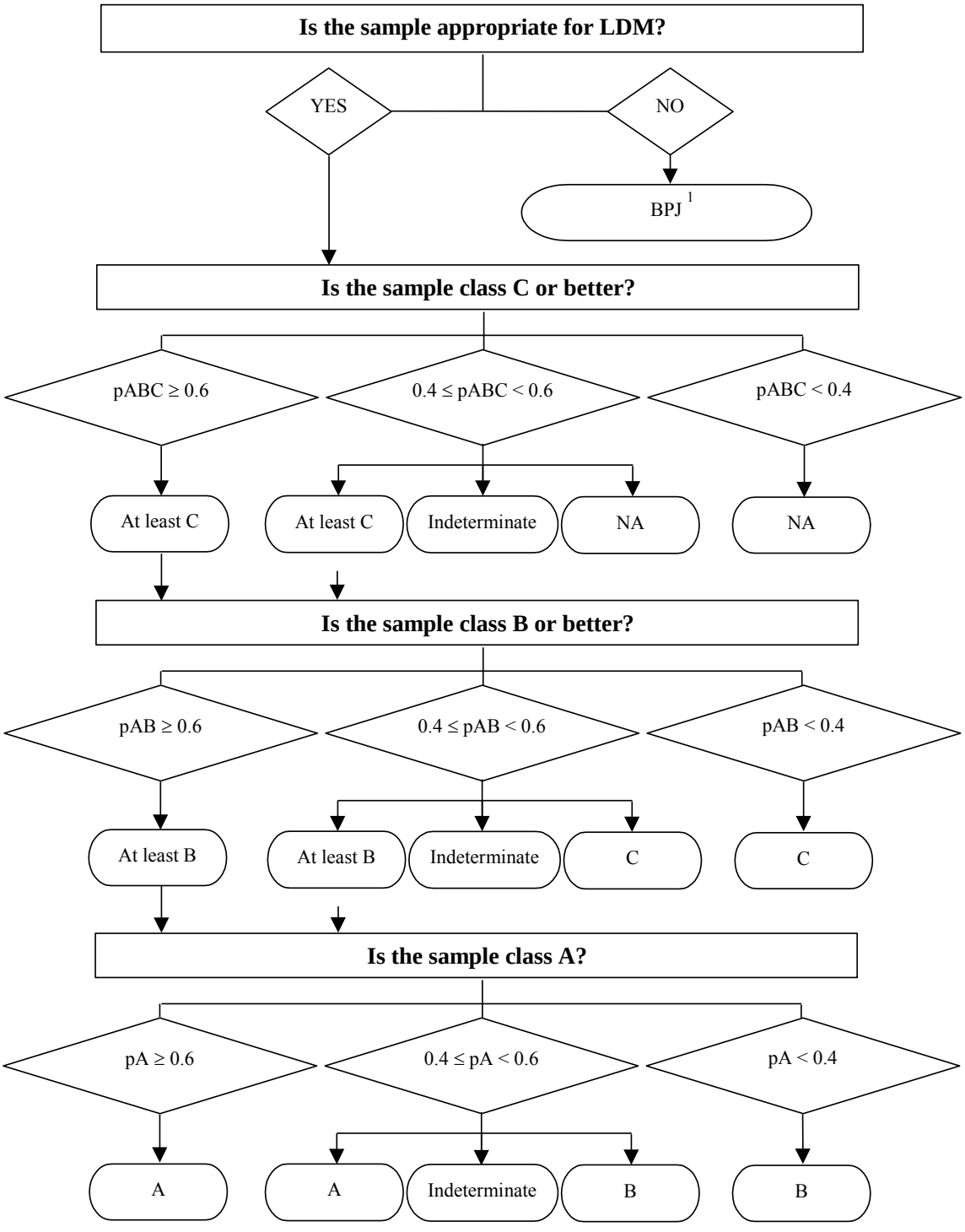


[1] Discriminant Score and Association Values are defined in Section III-2.(1).

Chart by Thomas J. Danielson

Appendix F

Process for Determining Attainment Class Using Association Values



[1] Best Professional Judgment (BPJ) is defined in Section III-2. (2), (4), and (5)

Chart by Thomas J. Danielson

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