

The impounded water extends approximately 3 miles upstream of the dam. The Project is operated in run-of-river mode. During low inflow conditions, Topsham Hydro operates the Project to maintain the impoundment level near 67.2 feet and to provide the required minimum downstream releases and flows necessary for operation of the fish passage structures. Under higher river flow conditions, water in excess of the hydraulic capacity of the generating units is spilled at the dam.

The Project is operated as a run-of-river facility. The main turbine generator unit (Unit 1) controls the turbine wicket gates to maintain a preset pond level which is normally at about elevation 67.2 feet or 0.3 feet below the top of the spill gates. When Unit 1 nears its maximum flow capacity of 7,550 cubic feet per second (cfs), one or more of the three small units (Units 21, 22, and 23) is manually started. The small units are mainly operated during high spring runoff and after large storm events that increase river flows. Inflows in excess of the hydraulic capacity of the units are passed at the dam spillway. Inflows to the Project exceed the maximum capacity of the units approximately 25 percent of the time, on average. When the pond level reaches 69.0 feet (1.5 feet above the spill gates), the gates begin to lower starting with the gate closest to the powerhouse. The gates operate on pond level control and as flow increases, they maintain the pond level of 69.0 feet until all five gates are open. When the flow starts decreasing and the impoundment level drops to 68.0 feet, the gates start to close in order to maintain a level above 68.0 feet. When all five gates are closed, outflow is discharged through the generating units until the pond level exceeds 69.0 feet.

The Project releases a continuous minimum flow of 1,710 cfs, as measured immediately downstream of the Project powerhouse, or inflow to the impoundment, whichever is less.

2. PROCEDURAL HISTORY

Section 401 of the Clean Water Act requires that an applicant for a federal license for an activity that may result in a discharge into navigable waters of the United States, such as Topsham Hydro's operation of the Project, obtain a certification that the activity will comply with applicable State water quality standards and any other appropriate requirement of State law. Topsham Hydro submitted a WQC application to the Department on June 9, 2021, which established a statutory one-year deadline of June 8, 2022, for the Department to complete its certification review and issue its decision. 33 U.S.C. § 1341(a)(1).

In accordance with Chapter 2, § 18, the Department issued a draft Order for comments on May 27, 2022. The following entities requested a draft WQC: Topsham Hydro, Maine Department of Marine Resources (MDMR), and Maine Department of Inland Fisheries and Wildlife. Chapter 2, § 18 requires a minimum review period of five days. To ensure that the Department acted within the one-year statutory certification deadline and provided the required five-working-day comment period, the deadline for comments was 5:00 p.m. on June 6, 2022.

After the draft WQC was issued for comments, but prior to the comment deadline, the Department received requests to review copies of the draft WQC from the Atlantic Salmon Federation (ASF) and the Natural Resources Council of Maine (NRCM). Although ASF and NRCM did not previously request to review the draft WQC, as allowed for by the Chapter 2 rules, the Department provided the draft WQC to the groups. Maine Rivers subsequently contacted Department staff and similarly made a request for a copy of the draft WQC on June 7, 2022, and the Department provided it. Additionally, FOMB obtained a copy of the draft WQC from another source.¹

Prior to the deadline to issue the final WQC Order, the Department received comments on the draft WQC from Topsham Hydro, ASF, FOMB, Maine Rivers, MDMR, and NRCM.

Comments from Topsham Hydro were generally minor corrections and were incorporated into the final WQC, as appropriate. Comments from MDMR were related to fisheries resources and were incorporated into the final WQC as appropriate. Comments from ASF, FOMB, Maine Rivers, and NRCM disputed the application of Class C standards in the WQC, and instead argued that the Department should apply the pending, but not yet effective, reclassification to Class B standards. 38 M.R.S. § 465. The Department reviewed these comments on the draft WQC and incorporated them into the final WQC, as appropriate.

On June 8, 2022, the Department issued the final WQC conditionally approving Topsham Hydro's continued operation of the Project. The WQC includes 11 conditions, four of which affect project operation. These conditions require Topsham Hydro to: (1) maintain certain water levels, (2) maintain certain minimum flows, (3) implement fisheries measures for upstream and downstream fish passage facilities, and (4) submit a Final Recreation Management Plan to the Department.

On July 8, 2022, the Appellants filed a timely appeal of the WQC Order with the Board and requested a public hearing on the issues raised in the appeal. The appeal contained evidence not included in the underlying record which was therefore proposed as supplemental evidence. By letter dated August 25, 2022, Topsham Hydro objected to the supplemental evidence offered by the Appellants. As further discussed below, on September 21, 2022, the Board Chair issued a ruling on these requests that denied admittance of the proposed supplemental evidence submitted by the Appellants and set an initial deadline of October 11, 2022, for a response to the merits of the appeal. On October 6, 2022, Topsham Hydro timely filed a response to merits of the appeal.

¹ The Appellants note that Ed Friedman of FOMB first requested a copy of the draft WQC on Friday June 3, 2022, and did not receive a response from Department staff until Monday June 6, 2022. The Appellants assert that this delay was not appropriate and that it did not allow Mr. Friedman adequate time to comment on the draft WQC. The Department record indicates that Mr. Friedman's request was submitted via email at 7:21 p.m. on Friday June 3, 2022 (after normal working hours).

3. BURDEN OF PROOF AND BOARD APPEAL REQUIREMENTS AND AUTHORITY

The Department's Chapter 2 rules provide that an applicant for a license, which includes certifications such as the one requested by Topsham Hydro in its WQC application for the Pejepscot Hydroelectric Project, has the burden of proof to affirmatively demonstrate to the Department that each of the licensing criteria in statute or rule has been met. Ch. 2, § 11(F).

Pursuant to Chapter 2, § 24(B), a written notice of appeal to the Board of a final license decision of the Commissioner must include, but need not be limited to, evidence demonstrating the appellant's standing as an aggrieved person, the findings, conclusions, or conditions objected to or believed to be in error, the basis of the objection or challenge, and the remedy sought.

When reviewing an appeal, and pursuant to 38 M.R.S. § 341-D(4), the Board is not bound by the Commissioner's findings of fact or conclusions of law but may adopt, modify or reserve findings of fact or conclusions of law established by the Commissioner. Any changes made by the Board must be based upon the Board's review of the record, any supplemental evidence admitted by the Board, and any hearing held by the Board. The Board may hold a hearing on an appeal at its discretion. 38 M.R.S. § 341-D(4); Ch.2, § 24(A).

4. SUPPLEMENTAL EVIDENCE AND OTHER RECORD-BASED FILINGS

As noted above, the Appellants proposed supplemental evidence for admittance into the record. The process and criteria governing the proposal and admission of supplemental evidence are set forth in Chapter 2, § 24(C)-(D).

A. Supplemental Evidence Proposed by the Appellants

As reflected in a letter from the Board's Executive Analyst dated September 21, 2022, Department staff determined that certain evidence included in the appeal was not included as a part of the Department's record on appeal and constituted proposed supplemental evidence. After reviewing the Appellants' proposed supplemental evidence, the Board Chair ruled not to admit the evidence because it did not meet the criteria set forth in Chapter 2, § 24(D).

B. The Department's Administrative Record

In addition to making the record available for inspection at the Department's office in Augusta, Department staff also made the Project record available on the State of Maine's file transfer protocol (FTP) website for easy access by interested parties on February 8, 2023.

5. STANDING

Department rule Chapter 2, § 24 provides that final license decisions of the Commissioner may be appealed to the Board by persons who have standing as aggrieved persons. Aggrieved persons are defined in Chapter 2, § 1(B) as “any person whom the Board determines may suffer particularized injury as a result of a licensing or other decision.” This section further states that, “[t]he Board will interpret and apply the term ‘aggrieved person’, whenever it appears in statute or rule, consistent with Maine state court decisions that address judicial standing requirements for appeals of final agency action.”

The Appellants assert that, collectively, they have a history of working to improve water quality and fish passage on many Maine rivers and specifically have worked to upgrade or supported upgrade efforts and proposals on the lower Androscoggin River, including the Project area. The Appellants further assert that they will collectively and individually suffer a negative impact from the application of Class C water quality standards in the WQC.

The Board finds that the Appellants meet the definition of aggrieved persons through its assertions that they are non-governmental organizations whose memberships include the region of the Androscoggin River on which the Project is located that may be adversely affected by the WQC. The Appellants further assert an interest in the Project meeting water quality standards as described in 38 M.R.S. § 465. Therefore, the Board finds that the Appellants have demonstrated standing to bring this appeal before the Board.

6. BASIS FOR APPEAL AND REMEDY SOUGHT

The Appellants challenge the Department’s decision to apply Class C water quality standards described in 38 M.R.S. § 465 to Topsham Hydro's WQC application. The Appellants argue that the Department should have applied Class B standards in the WQC, in part, due to the then-pending reclassification legislation that became effective on August 8, 2022 – two months after the Department’s issuance of the final WQC on June 8, 2022.

As a remedy, the Appellants request in the appeal that the Board hold a public hearing on the issues raised in the appeal and issue an Order that takes one of three suggested forms: 1) affirming that the Project meets the applicable Class B water quality standards including applicable numeric and narrative criteria for this segment of the Androscoggin River, or; 2) amending and conditioning the existing WQC with the express condition that the Project will be required to meet Class B standards upon the August 8, 2022, effective date of legal reclassification, or; 3) denying the WQC and remanding to the Department to approve or deny the WQC in accordance with Class B water quality standards. *See* Appeal at 14. This request and Appellants’ arguments are addressed in Section 8 below.

7. RESPONSE TO REQUEST FOR A PUBLIC HEARING

As part of their appeal, the Appellants request that the Board hold a public hearing regarding the issues raised on appeal. The Board's determination of whether to hold such a requested hearing on an appeal is discretionary. Ch. 2, § 24(A); 38 M.R.S. § 341-D(4).

Pursuant to Chapter 2, § 24(B)(4), if a hearing is requested, the appellant must provide an offer of proof regarding the testimony and other evidence that would be presented at the hearing. The offer of proof must consist of a statement of the substance of the evidence, its relevance to the issues on appeal, and whether any expert or technical witnesses would testify.

In their appeal, the Appellants state that they anticipate presenting evidence on the history of water classification of the Androscoggin River and technical information regarding studies conducted for assessment of water classification in the Project area and affected waters. The Appellants state that the evidence would be in the form of documents in the record and supplemental evidence, testimony of subject matter experts and witnesses, demonstrative exhibits based upon information in the record or supplemental evidence, and other relevant information.

As an initial matter, the Board notes that the WQC was pending with the Department's record open for approximately one year, during which time any person, including the Appellants, could have submitted evidence on the issues the Appellants raise in this appeal.

The Board finds that the Appellants and the public have had ample opportunity to review the WQC application, submit evidence and comments, and present other information and argument to the Department. The Board further finds that the record is adequately developed regarding all issues on appeal, and a hearing is not warranted for the Board's additional understanding of the evidence. For each of these reasons, the Board denies the Appellants' request to hold a hearing on the appeal.

8. DISCUSSION AND RESPONSE TO APPEAL

A. Water Quality Standards Applicable to the June 8, 2022, Water Quality Certification

On page 2 of their appeal, the Appellants acknowledge that Project waters were classified as Class C at the time the Department issued the WQC on June 8, 2022. Nevertheless, the Appellants assert that the Board, Legislature, and Governor intended for the reclassification to apply to the Project WQC and, therefore, the Department should have applied Class B standards to the Project.

The absence of specific language in the reclassification legislation (Public Law 2021, Chapter 552) that applies to the Project WQC is an indication that there was no such intent. There is also no discussion of the reclassification's potential effects on the Pejepscot Project WQC in the public record associated with the reclassification process.

Additionally, the Board finds that the Department complied with its Chapter 2 rules when it applied Class C standards in the WQC. Title 38, section 344(1-A) provides that "[a]n application for a permit, license or approval is processed under the substantive rules in effect on the date the application or request for approval is determined to be complete for processing." In addition, Chapter 2, § 11(F) states, in part, "[u]nless otherwise provided by law, all license applications, including renewal, amendment and transfer applications, are subject to the substantive laws and rules in effect on the date the application is accepted as complete for processing."

The Department applied Class C standards because those standards were in effect when the Department accepted the WQC application as complete for processing on June 14, 2021. The Class C standards also remained in effect when the Department issued the WQC on June 8, 2022.

For the reasons set forth in the June 8, 2022, WQC, the Board finds and determines that the proposed Project operations, as conditioned by the WQC, will meet all applicable Class C standards. As set forth below, the Board also finds and determines that the proposed Project operations, as conditioned by the WQC, will also meet Class B standards.

B. Water Quality Standards in Effect Since August 8, 2022

On March 31, 2022, the Governor signed Public Law 2021 Chapter 551 into law. This law reclassifies certain waters of the State, including changing the classification of a portion of the lower Androscoggin River that includes the Pejepscot Project from Class C to Class B. The reclassification became effective on August 8, 2022, and, therefore, Class B standards currently apply.

The applicable Class B water quality standards state the following:

- Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired. 38 M.R.S. § 465(3)(A).

- Class B waters must be of sufficient quality to support all aquatic species indigenous to those waters without detrimental changes in the resident biological community. The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the one-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas.² 38 M.R.S. § 465(3)(B).
 - For existing hydropower impoundments, such as the Pejepscot Project impoundment, 38 M.R.S. § 464(10)(A)(1) states that the habitat characteristics and aquatic life criteria of Classes A and B are deemed to be met in the existing hydropower project impoundments if the impounded waters achieve the aquatic life criteria described in 38 M.R.S. § 465(4)(C). Discharges may cause some changes to aquatic life, except that the receiving waters must 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. 38 M.R.S. § 465(4)(C).
 - Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community. 38 M.R.S. § 465(3)(C).
- C. The Record Shows that the proposed Project, as conditioned by the June 8, 2022, WQC, Meets Class B Standards.

In the following section, the Board outlines its findings that the Project operations, as proposed and as conditioned by the WQC, meet Class B water quality standards in addition to Class C standards.³ The Board bases its findings on the existing Department record for the Project.

Aquatic Habitat – Riverine Impoundment (38 M.R.S. § 465(3)(A); 38 M.R.S. § 464(10)(A)(1))

Attainment of aquatic habitat standards can be demonstrated in a variety of ways, including through evaluation of the structure and function of the biotic community, and measurement or submission of other data or evidence that demonstrates a sufficient maintenance of the impoundment's littoral zone. Absent other evidence, and based on its professional experience, expertise, and judgment, the Department generally presumes the presence and suitability of sufficient aquatic life and habitat, especially for small or young fish as well as other aquatic life that rely on that refuge and forage provided by

² The Pejepscot Project is not located in an identified fish spawning area.

³ The Appellants and Topsham Hydro appear to agree that Class B standards currently apply to the portion of the Androscoggin River where the Project is located.

nearshore aquatic vegetation, when at least 75% of an impounded area, called the littoral zone, as measured from full pond conditions, always remains wetted. Conversely, and again absent other evidence, water levels that provide wetted conditions for approximately 75% of the littoral zone of an impounded area, as measured from full pond conditions, are generally presumed necessary to meet aquatic life and habitat standards. This rebuttable presumption, as developed through the exercise of the Department's professional experience, expertise, and judgment also is reflected in the Department's Hydropower Project Flow and Water Level Policy, dated February 4, 2002 (Water Level Policy). This rebuttable presumption is not a rule, but a guideline that applies on a case-by-case basis, informed by best professional judgment, and considering site-specific circumstances.

a. Existing Habitat and Resources

The Board finds that the Pejepscot riverine impoundment extends approximately three miles upstream of the Project dam with a surface area of 225 acres at normal full pond elevation of 67.5 feet. The Project is operated as a run-of-river facility, has no significant storage capacity, and has no significant effect on the overall river flow of the Androscoggin River. Operation of the bascule gates minimizes impoundment fluctuations to approximately 1.5 feet of the normal full pond elevation (69.0 feet) when inflows exceed the hydraulic capacity of the units, and the impoundment is typically held near 67.2 feet (0.3 feet below the top of the bascule gates). High flow conditions beyond Topsham Hydro's control may result in water levels exceeding 69.0 feet.

The Board finds that the run-of-river operations provide a relatively stable head pond elevation while passing inflows. Such operations protect existing littoral habitats from changes related to water level fluctuations.

The Little River enters the Androscoggin in the furthest upstream areas of the Project impoundment and is the only major tributary in the vicinity of the Project.

b. Studies

Topsham Hydro provided historical discharge and impoundment water level data. The data indicates, and the Board finds, that Project operations generally maintain consistent water levels and attenuate high-inflow events. Project operations limit impoundment water level fluctuations to approximately two feet, typically ranging from a baseline of 67.2 feet to a maximum of 69.0 feet during periods of high inflow.

c. Discussion and Findings

The Board finds that the Project is operated as a run-of-river facility and that Topsham Hydro demonstrated this by providing discharge and impoundment water level data.

The Board further finds, based on data in the Department record described above, that Project operations do not cause the water level to fluctuate or draw down the riverine

impoundment water level for the purpose of hydropower generation. Run-of-river operations maintain relatively stable water levels with minimal impoundment fluctuation from full pond conditions, subject only to natural variations related to precipitation events. Therefore, the Project maintains 75% of the littoral zone in wetted conditions as measured from full pond, protecting habitat in the littoral zone. Except for fish passage, which is discussed separately below, based on the evidence provided by Topsham Hydro, the Board finds that the Pejepscot riverine impoundment meets the applicable aquatic life and habitat criteria in the Class B standards.

Aquatic Habitat – Outlet Stream (38 M.R.S. § 465(3)(A), (3)(C))

For this standard, Topsham Hydro must demonstrate that the Class B waters, such as those at the outlet of the Pejepscot dam, are of such quality that they are suitable for the designated use of habitat for fish and other aquatic life. Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community. The habitat must be characterized as unimpaired.

To meet Class B aquatic life standards in the riverine outlet waters, Topsham Hydro must demonstrate attainment of two criteria. First, Topsham Hydro must show that the macroinvertebrate community attains Class B aquatic life criteria according to the Department's Chapter 579 rules. The benthic macroinvertebrate community is an indicator of the general state of aquatic life for the purpose of attainment of outlet stream aquatic classification standards.

Second, Topsham Hydro must show that the flow of water in the Androscoggin River is sufficient to support the designated use of habitat for fish and other aquatic life. The Department generally presumes, absent evidence to the contrary, that flow providing wetted conditions for at least 75% of the cross-sectional area of the affected river or stream, as measured from bankfull conditions, is needed to meet aquatic life and habitat standards. Topsham Hydro can demonstrate attainment of these standards by providing evidence that 75% of the cross-section of the outlet stream is wetted at all times. This rebuttable presumption, as developed through the exercise of the Department's professional experience, expertise, and judgement is also reflected in the Department's Water Level Policy.

a. Existing Habitat and Resources

The reach of the Pejepscot River downstream of the Project dam includes backwater, pool, riffle, run, and glide mesohabitat types with a variety of substrate types including gravel, cobble, sand, mixed bedrock, small boulder, rubble, and large bolder. The most common mesohabitat types are pool (38% of total habitat area), backwater (28% of total habitat area), and run (20% of total habitat area).

b. Studies

Topsham Hydro completed a survey of aquatic habitat in the Androscoggin River downstream of the Pejepscot dam and a Benthic Macroinvertebrate study to determine if the aquatic community meets Maine's water quality standards in the waters downstream of the Project tailrace. Additionally, Topsham Hydro submitted Project water level and flow data that indicate that the Project operates in run-of-river mode.

Topsham Hydro conducted the benthic macroinvertebrate study downstream of the Project dam and tailwater in accordance with the Department's standard methods.⁴ Topsham Hydro installed rock baskets approximately 660 feet downstream of the Project at the approved sampling location on August 2, 2018, and retrieved them on August 29, 2018. The samples were sent to a laboratory for sorting and examination. The Department input the study data into its linear discriminant model and the results of the model indicate that the area below the Project dam meets Class B aquatic life criteria.

c. Discussion and Findings

Studies conducted by Topsham Hydro demonstrate, and the Board finds, that the existing Project flow regime maintains and supports habitat for aquatic species in the Androscoggin River downstream of the Project dam.

Topsham Hydro demonstrated through a benthic macroinvertebrate study and the Department determined using its linear discriminant model that the benthic community downstream of the Project meets Class B aquatic life criteria.

Topsham Hydro demonstrated through its submission of Project water level and flow data that the Project operates in run-of-river mode and that the flow of water in the area downstream of the Project dam is sufficient to support a variety of aquatic habitat types. Project operations ensure a flow providing wetted conditions for at least 75% of the cross-sectional area of the Androscoggin River below the Project dam, as measured from bankfull conditions. Except for fish passage, which is discussed separately below, based on the evidence provided by Topsham Hydro, the Board finds that the area downstream of the Project dam meets the applicable aquatic life and habitat criteria in the Class B standards.

The Board therefore finds that flows provided by current and proposed Project operations provide sufficient water quality and sufficient water quantity to support the Class B designated use of habitat for fish and other aquatic life downstream of the Project. Aquatic Habitat – Fish Passage (38 M.R.S. § 465(3)(A), (3)(C))

The Pejepscot Project is a run-of-river project with all of the water of the Androscoggin River flowing through or over the dam, discharging to the river. By influencing the flow

⁴ The Department's standard methods for conducting benthic macroinvertebrate surveys are described in *Methods for Biological Sampling and Analysis of Maine's Rivers and Streams* DEPLW0387-C2014 (updated April 2014).

of the water in the river, the dam and its discharge impacts the ability of fish to pass the section of the river where the dam is located. By influencing fish passage, the dam and its discharge affect the biological integrity of the waters in the river. As an aquatic ecosystem, the Androscoggin River is home to and supports a variety of aquatic life. Diadromous fish are part of the biological community in the river and, due to their migratory nature and life cycle needs, must be able to pass the Pejepscot Dam to spawn. Unless diadromous fish have the ability to pass the dam, the Androscoggin River cannot support these species of fish.

For Topsham Hydro to satisfy applicable State water quality standards, it must demonstrate that the water flowing through and over the Pejepscot Dam, which discharges into the Androscoggin River, supports indigenous species and does not cause adverse impact to aquatic life. This requires showing that the discharge from the dam supports safe, timely, and effective upstream and downstream fish passage. Safe, timely, and effective fish passage is necessary to avoid detrimental changes in the resident biological community.

a. Existing Habitat and Resources

In the lower reaches of the Androscoggin River, including in the Project vicinity, the fish assemblage consists of, but is not limited to, native diadromous species such as Atlantic salmon, American shad, alewife, blueback herring, sea lamprey, and American eel.

b. Studies

In 2019, Topsham Hydro conducted studies evaluating the effectiveness of the existing upstream passage facilities for adult American shad and river herring (alewife and blueback herring), as well as downstream effectiveness studies for American shad, river herring, and American eel.

The results of the upstream passage studies indicate that overall fish lift effectiveness was poor, with passage rates of 19.8% for river herring and 0% for American shad. The results of the downstream passage studies indicate that the downstream fish bypass is similarly ineffective, with most river herring, American shad, and American eel passing the Pejepscot dam via the spill gates or through the Unit 1 turbine instead of through the downstream fish bypass. Specifically, 22% of adult river herring, 31% of juvenile river herring, 9% of adult American shad, and 2% of adult American eels passed downstream of the dam via the downstream fish bypass.

c. Applicant's Proposal

Topsham Hydro proposes to improve fish passage at the Pejepscot dam. Its proposal is best reflected in the two separate Settlement Agreements that it developed with the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS), as opposed to the FERC Final License Application (FLA) and the WQC application filed with the Department. Topsham Hydro's intent to modify its Project proposal to incorporate the terms of the Settlement Agreements is evident from the Topsham Hydro's April 1, 2022, filing with FERC, responding to questions from FERC staff and confirming that the Settlement Agreements modify what Topsham Hydro had proposed in the FLA.⁵ Therefore, the Department reviewed the fish passage measures contained in the Settlement Agreements.

The Settlement Agreement that Topsham Hydro executed with NMFS includes the following measures:

1. Interim spillage for Atlantic salmon smolt passage.
2. Interim nighttime shutdowns for American eel downstream passage beginning in the first passage season after license issuance through 2032.
3. An optional study to determine the effectiveness of the interim nighttime shutdowns after three passage seasons with results reported in 2028.
4. If the nighttime shutdowns described in the Settlement Agreement with FWS are a viable long-term means of protection for American eel downstream passage, the Applicant will install a fish guidance boom to direct downstream migrating river herring and Atlantic salmon to a new bypass within bascule gate No. 1 to be operational for the 2029 downstream passage season.
5. Effectiveness testing of the fish guidance boom to be conducted over two seasons after a one-year shakedown.
6. If the nighttime shutdowns described in the Settlement Agreement with FWS are not a viable long-term means of protection for American eel downstream passage or if the Applicant chooses not to conduct the optional effectiveness study, then the Applicant will install permanent downstream protection measures consisting of seasonal trashracks with bar spacing of a maximum of 3/4-inches by the 2033 downstream passage season.

⁵ While in this case the Department learned of Topsham Hydro's modification of its proposed operation of the Pejepscot Project with respect to fish passage – a modification that directly bears on the Department's evaluation of whether the Project meets State water quality standards – through monitoring and review of documents filed with FERC, the responsibility rests with applicants to provide the Department with its water quality certification application and any modifications to the proposed activity for which a federal license and corresponding WQC is sought. Filings with FERC associated with a FERC license application are not automatically incorporated in the WQC application record before the Department.

7. Initial fish lift modifications to operate the attraction water system at full capacity unless monitoring studies indicate different operations are warranted.
8. Determination of fish lift operation schedule on an annual basis in consultation with NMFS and FWS.
9. Fish lift effectiveness monitoring beginning in the first full passage season after license issuance conducted over two passage seasons. The studies will evaluate the effectiveness of the initial modifications for adult Atlantic salmon, river herring, and American shad.
10. Identification of anticipated performance standards with establishment of final fish passage performance standards in consultation with NMFS.
11. No later than 2027, modification to the fish lift flap gate if the defined performance standards for river herring and American shad cannot be met.

The Settlement Agreement that Topsham Hydro executed with FWS includes the following measures:

1. Interim nighttime shutdowns for American eel downstream passage beginning in the first passage season after license issuance through 2032.
2. An optional study to determine the effectiveness of the interim nighttime shutdowns after three passage seasons with results reported in 2028.
3. If the nighttime shutdowns are not a viable long-term means of protection for American eel downstream passage or if Topsham Hydro chooses not to conduct the optional effectiveness study, then Topsham Hydro will install permanent downstream protection measures consisting of seasonal trashracks with bar spacing of a maximum of ¾-inches by the 2033 downstream passage season.
4. Deployment of temporary upstream eel ramps until permanent measures are implemented.
5. Final design, permitting, and construction of permanent upstream eelway during the third year of the new license. The eelway will be operational by the fourth year after license issuance.

In the June 8, 2022, WQC, the Department found that the two agreements contain similar but slightly different measures, particularly related to the proposed fish guidance boom included in the NMFS Settlement Agreement but not included in the FWS Settlement Agreement. Additionally, the FWS Settlement Agreement includes no mention of any consultation with other State or federal resource agencies, while the NMFS Settlement Agreement includes some requirements to consult with other resource agencies regarding some, but not all, conditional or adaptive management measures. Common among the two Settlement Agreements is that they are iterative in nature, involving interim measures, effectiveness testing, and permanent measures that are to be developed based on results.

The most important components of Topsham Hydro's proposal involve the following three measures: 1) establishment of performance standards for fish passage, 2) permanent

downstream fish protection measures consisting of seasonal trashracks with bar spacing of a maximum of $\frac{3}{4}$ -inches, and 3) modifications to the fish elevator to install a flap gate. These measures are described in Topsham Hydro's proposal and are contingent on the results of additional studies and future consultation. Topsham Hydro's proposal, as reflected in the NMFS Settlement Agreement, identifies "anticipated performance standards for alosines"⁶ that may be similar to those from other river systems such as the Connecticut River. The anticipated performance standards for alosines described in Topsham Hydro's proposal are upstream passage efficiency of at least 70% within 48 hours of a fish approaching the Project works and a downstream survival required to exceed 95%. Topsham Hydro proposes to install permanent downstream fish protection measures only if it either chooses not to conduct an effectiveness study, or if its proposed, optional 3-year effectiveness study fails to indicate that nighttime shutdowns are a viable long-term means of protection for American eel passing downstream of the Project. Additionally, Topsham Hydro proposes to modify the fish elevator to install a flap gate only if either it chooses not to conduct an effectiveness study or if its proposed, optional upstream passage effectiveness study indicates that the current entrance to the fish elevator does not meet performance standards.

d. Discussion and Findings

The data provided by Topsham Hydro demonstrates that the Project's existing upstream and downstream fish passage facilities do not provide safe, timely, and effective fish passage. The study results indicate that the water flowing through and over the Pejepscot Dam, which discharges into the Androscoggin River causes adverse impacts to aquatic life and detrimental changes in the resident biological community.

Topsham Hydro's proposal, which has been modified by the Settlement Agreements as indicated in Topsham Hydro's April 1, 2022, response to FERC Additional Information Request, is reflected in these two separate agreements with NMFS and FWS. Central to both is the implementation of interim measures, monitoring of outcomes, further consultation with resource agencies, and implementation of permanent passage measures. The goal of both agreements is to improve upstream and downstream passage and, as stated in Topsham Hydro's correspondence with FERC submitting the Settlement Agreements to the federal licensing agency, "to establish a comprehensive approach to safe, timely, and effective passage for all species at the Project."

⁶ Alosine refers to members of the subfamily Alosinae, which includes alewives, American shad, and blueback herring.

To obtain certification, Topsham Hydro must demonstrate that its proposed operation of the Project will meet State water quality standards. This includes demonstrating that the water flowing through and over the Pejepscot Dam, which discharges into the Androscoggin River, supports indigenous species and does not cause adverse impact to aquatic life. This requires showing that the discharge from the dam supports safe, timely, and effective upstream and downstream fish passage. Safe, timely, and effective fish passage is necessary to avoid detrimental changes in the resident biological community.

In the June 8, 2022, WQC, the Department found that Topsham Hydro's proposal for improving fish passage at the Project, as reflected in the Settlement Agreements, provides a framework for achieving safe, timely, and effective fish passage. However, the June 8, 2022, WQC notes that adherence to this framework and the decisions made within this framework ultimately will determine whether this level of passage is achieved, and the Project is operated to support indigenous species in accordance with State water quality standards.

For example, with respect to American eel passage, Topsham Hydro proposes interim nighttime shutdowns during the downstream migration season. Topsham Hydro proposes to study the effectiveness of the interim measures over three years and to determine whether the interim measures are sufficient in consultation with FWS and NMFS. If the interim measures are not effective, then Topsham Hydro proposes to install permanent downstream protection measures for American eel consisting of angled 3/4-inch trashracks. The results of any decision to continue the proposed interim measures or to implement the proposed permanent measures has the potential to significantly influence fish passage at the Project. To ensure that the State's interest with respect to achieving safe, timely, and effective fish passage consistent with the State water quality law is represented and that Topsham Hydro has the full benefit of the fisheries expertise of the State with respect to this Maine river, the June 8, 2022, WQC requires Topsham Hydro to consult with the Maine Department of Marine Resources (MDMR) as part of and prior to determining whether the proposed permanent measures must be implemented. If during this consultation and after review of the three years of effectiveness studies MDMR provides written comments to Topsham Hydro that the interim measures have not achieved safe, timely, and effective passage for American eel, within 60 days of receipt these comments the June 8, 2022, WQC requires Topsham Hydro to submit a written response the Department for review. The response must identify any points of agreement and explain the basis for any areas of disagreement.

Further, along with initial fish lift modifications Topsham Hydro proposes, through the NMFS Settlement Agreement, to adaptively manage both the lift frequency and operating hours on an annual basis, with the schedule set annually prior to each fish passage season. This schedule has the potential to significantly influence fish passage at the Project. To ensure that the State's interest with respect to achieving safe, timely, and effective fish passage consistent with State water quality law is represented and that Topsham Hydro has the full benefit of fisheries expertise of the State with respect to this Maine river, the June 8, 2022, WQC requires Topsham Hydro to consult with MDMR as part of and prior to determining lift frequency and facility operating hours before each fish passage season.

If during this consultation MDMR provides written comments to Topsham Hydro recommending lift frequency or operating hours determined by MDMR to be necessary to provide safe, timely, and effective passage for all fish species using the lift, within 60 days of receipt of these comments the June 8, 2022, WQC requires Topsham Hydro to provide a written response to the Department for review. The response must identify any points of agreement and explain the basis for any areas of disagreement.

Additionally, an important component of the NMFS Settlement Agreement is the identification of anticipated performance standards for alosines with an upstream passage efficiency of at least 70% within 48 hours of a fish approaching the Project works and a downstream survival required to exceed 95%. Achievement of appropriately set performance standards will ensure safe, timely, and effective fish passage. The anticipated standards proposed by Topsham Hydro appear, at least in part, to have been based on performance standards for a separate project located on a river in Massachusetts. To verify these standards are appropriate for translation to the Androscoggin River in Maine or to establish final, project-specific standards, consideration of the fisheries resources in this river is needed to ensure passage is adequate to support indigenous species and not cause adverse impact to aquatic life. Consistent with MDMR's comments on the draft WQC, this involves recognition that each species of alosine (American shad, blueback herring, and alewife) has different life history requirements and measures that result in effective passage of one species may not yield the same results for another species. Therefore, the final standards should be tailored to each alosine species, which may result in different performance standards for individual species or clarification that a single standard applies individually to each alosine species. This will ensure inefficient passage for one species will not be masked by successful passage of another and is consistent with Topsham Hydro's stated goal "to establish a comprehensive approach to safe, timely, and effective passage for all species at the Project."

To ensure that the State's interest with respect to achieving safe, timely, and effective fish passage consistent with the State water quality law is represented and that Topsham Hydro has the full benefit of the fisheries expertise of the State with respect to individual alosine species in the Androscoggin River, as part of the establishment of final standards, the June 8, 2022, WQC requires Topsham Hydro to consult with MDMR prior to establishment of final performance standards for alosines. The Project must then be operated to achieve these final performance standards. If during consultation MDMR provides written comments to Topsham Hydro recommending specific performance standards determined by MDMR to be necessary to provide safe, timely, and effective passage for each species of alosine, within 60 days of receipt of these comments the June 8, 2022, WQC requires Topsham Hydro to provide a written response to the Department for review. The response must identify any points of agreement and explain the basis for any areas of disagreement.

Until the establishment of final performance standards following consultation with MDMR, the June 8, 2022, WQC requires the Project to be operated to achieve the anticipated performance standards identified in the NMFS Settlement Agreement and incorporated into Topsham Hydro's proposed operation of the Project.

Topsham Hydro's proposal for passage for alosines includes a series of interim measures and related studies. For downstream passage, evaluation of the effectiveness of a fish guidance boom is proposed, but implementation of the boom depends on what measures are implemented for downstream American eel passage. Alternatively, trash racks will be installed as permanent downstream protection measures. For upstream passage, initial fish lift modifications followed by monitoring and potential flap gate modifications are proposed. If following the monitoring and study of downstream and upstream passage of alosines proposed by Topsham Hydro as reflected in the NMFS Settlement Agreement, fish passage at the Project does not achieve the final downstream and upstream performance standards, or the anticipated downstream and upstream performance standards if they remain controlling as outlined above, the June 8, 2022, WQC requires Topsham Hydro to prepare an adaptive management plan. The plan must contain improvements and a clear implementation timeline to efficiently and effectively achieve passage equal to or better than the performance standard(s) it failed to meet. Improvement measures may include, among other things, minor modifications to operation or building an additional upstream fishway. The plan must provide for testing and reporting to the Department on the success of implemented improvements. The June 8, 2022, WQC requires the adaptive management plan to be submitted to the Department for review and approval within six months of effectiveness monitoring, conducted in accordance with Topsham Hydro's proposals as reflected in the NMFS Settlement Agreement, showing the upstream or downstream performance standards are not being met.

Provided Topsham Hydro complies with the requirements of the June 8, 2022, WQC, the Board finds that the fish passage proposed by Topsham Hydro, as reflected in the Settlement Agreements, will be safe, timely, and effective and sufficient to avoid detrimental changes in the resident biological community and to ensure that the aquatic habitat is characterized as unimpaired. The water flowing through and over the Pejepscot Dam, which discharges into the Androscoggin River, will support indigenous species and will not cause adverse impact to aquatic life.

Dissolved Oxygen (38 M.R.S. § 465(3)(B))

For the Class B standard, Topsham Hydro must demonstrate that the dissolved oxygen (DO) content will not be less than 7 parts per million (ppm) or 75% saturation, whichever is higher, except as otherwise provided in 38 M.R.S. § 465(3)(B).

a. Existing Habitat and Resources

The Board finds that the Pejepscot impoundment has a surface area of approximately 225 acres at full pond, with a water surface elevation of 67.5 feet. The impoundment extends

approximately three miles upstream at full pond. The Androscoggin River below the Pejepscot Project powerhouse and dam receives flows released from the powerhouse, leakage flow from the dam, runoff, and ice melt. The Project is located approximately 14 miles upstream of the mouth of the Androscoggin River, 3.4 miles downstream of the Worumbo Hydroelectric Project and 4.7 miles upstream of the Brunswick Hydroelectric Project. The drainage area at the Pejepscot dam is 3,420 square miles.

b. Studies

Topsham Hydro submitted data collected during water quality studies in the impoundment, collected twice each month between June and October 2018. Samples were collected at the deepest location of the impoundment (approximately 23 feet deep and 2,100 feet upstream of the Project dam) to assess the effects of Project operation on impoundment water quality. Water temperatures and DO were relatively uniform through the water column within the impoundment, with no indication of summer stratification. DO profiles in the Pejepscot riverine impoundment ranged from an average of 7.2 mg/L to 9.8 mg/L,⁷ and DO saturation was above 75% throughout the monitoring period.

Topsham Hydro collected continuous water temperature and DO data in the Androscoggin River downstream of the Project dam from August 2 to October 2, 2018. Data was collected using a datasonde deployed at approximately mid-depth within the water column. Water temperature ranged from 16.8 °C to 27.3 °C, averaging 23.5 °C throughout the sampling period. Hourly DO concentrations ranged from 7.8 mg/L to 9.7 mg/L, and DO saturation was above 75% throughout the monitoring period.

c. Discussion and Findings

The Board finds that DO data collected by Topsham Hydro in the Pejepscot riverine impoundment and submitted for Department consideration demonstrates that water in the Project riverine impoundment is sufficiently oxygenated to meet Class B standards. Thus, based on existing evidence in the Department record, the Board finds that upstream of the dam the Project meets Class B water quality standards under current and proposed operating conditions.

DO data collected by Topsham Hydro indicates, and the Board finds, that water in the Androscoggin River downstream of the Project dam is sufficiently oxygenated to meet Class B standards. Based on evidence in the record, the Board finds that the Project meets Class B water quality standards under current and proposed operating conditions.

Fishing, Navigation and Recreational Access and Use (38 M.R.S. § 465(3)(A))

For the Class B standard, Topsham Hydro must demonstrate that the project waters are suitable for the designated uses of recreation in and on the water, fishing, and navigation. Based on a longstanding interpretation of the Department's applicable standards, a

⁷ One ppm is equal to 1 mg/L.

hydropower impoundment may be found suitable for recreation in and on the water if it has a stable or decreasing trophic state and is free of culturally induced algal blooms that impair its use and enjoyment.

The Department considers an impoundment to have stable or declining trophic state unless it exhibits (1) a perceivable and sustained increase in its trophic state as characterized by its Trophic State Index or other appropriate indices, or (2) the onset of algal blooms. The trophic state is the ability of water to produce algae and other aquatic plants. The trophic state of a body of water is a function of its nutrient content and may be estimated using the Maine Trophic State Index (TSI), which includes measurements of chlorophyll, phosphorus, or Secchi disk transparency. An algal bloom is defined as a planktonic growth of algae that causes Secchi disk transparency to be less than 2.0 meters.

a. Existing Facilities and Use

The Board finds that the Project includes three formal recreation sites: the Pejepscot Boat Ramp, the Pejepscot Fishing Park, and the Lisbon Falls Fishing Park.

b. Water Quality Data

Topsham Hydro conducted a Trophic State Study in accordance with the Department's Lake Trophic State Sampling Protocol for Hydropower Studies (2017). Water quality samples were collected from the deepest portion of the impoundment approximately 2,100 feet upstream of the Project dam at a depth of approximately 23 feet, once in the month of June and twice per month from July through October 2018. Sample results indicate, and the Board finds, that the Pejepscot riverine impoundment does not stratify and is mesotrophic (total phosphorus ranged from 13 μ /L to 23 μ /L with an average of 19 μ /L; chlorophyll-a ranged from 0.001 mg/L to 0.004 mg/L, averaging 0.003 mg/L; and Secchi disk transparency measurements ranged from 2.42 meters to 4.66 meters, averaging 3.98 meters). The Board further finds that both phosphorus and chlorophyll-a concentration measured in the Pejepscot riverine impoundment were below the threshold for mesotrophic waters. Secchi disk transparency measurements indicate no nuisance algal blooms were present, supporting a finding that the Pejepscot impoundment is mesotrophic.

c. Discussion and Findings

Based on the evidence in the record, including the water quality data and recreational facilities described above, the Board finds that Project impoundment has a stable or decreasing trophic state and is free of culturally induced algal blooms that impair its use and enjoyment. The Board further finds that Project operations meet the Class B designated uses of recreation in and on the water, fishing, and navigation.

Hydroelectric Power Generation (38 M.R.S. § 465(3)(A))

For the Class B standard, Topsham Hydro must demonstrate that the Project waters are suitable for the designated uses of hydroelectric power generation.

a. Existing Generation

The Board finds that the Project has a total authorized generating capacity of 13.88 MW and is capable of producing a gross average energy output of 68,516 megawatt hours of electricity annually.

b. Energy Utilization

The Board finds that Topsham Hydro sells Project power wholesale to ISO New England for the New England market. The Project interconnects with the electrical grid via a single 900-foot-long, 15-kV cable connection to both a main and a secondary substation.

c. Discussion and Findings

Topsham Hydro proposes to continue generating power under the current operational mode during the term of a new Project license, providing a dependable source of energy to the public power grid. Topsham Hydro proposes no changes or additions to the existing turbine-generator units or other redevelopment activities. Based on the evidence in the record, the Board finds and determines that Project operations meet the Class B designated use of hydroelectric power generation.

Drinking Water Supply (38 M.R.S. § 465(3)(A))

Class B standards require water to be of sufficient quality to be used as drinking water after disinfection.

a. Discussion and Findings

The Board finds as follows. Topsham Hydro did not submit information indicating that the Pejepscot Project impoundment or the Androscoggin River is used as a drinking water supply. However, water quality data collected for the Trophic State Study in the Project riverine impoundment and DO data collected downstream of the dam indicate that water quality meets State standards and there are no culturally induced algal blooms. Based on the evidence on record, the Board finds and determines that Project operations meet the Class B designated use of drinking water after disinfection.

Industrial Process or Cooling Water Supply (38 M.R.S. § 465(3)(A))

Class B standards require water to be of sufficient quality to be used as industrial process or cooling water supply.

a. Discussion and Findings

The Board finds as follows. Topsham Hydro did not submit information indicating that there are any industrial process water uses in either the Pejepscot Project impoundment or the Androscoggin River downstream of the dam besides a cooling water supply for energy generation equipment at the Project. However, water quality data indicates that it would be suitable as an industrial process water supply in addition to its present use as a cooling water supply. Based on the evidence on record, the Board finds that the Project operations meet the Class B designated use of industrial process or cooling water supply.

Based on the above findings, the Board concludes that:

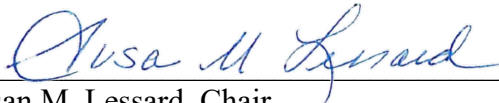
1. The Appellants filed a timely appeal.
2. The Appellants are aggrieved persons and have standing to bring this appeal.
3. The Board will not hold a public hearing on this appeal.
4. The Department's June 8, 2022, WQC correctly applied all applicable water quality standards that were in effect at the time of Topsham Hydro's application for WQC.
5. Class B water quality standards are currently in effect for the Project's segment of the Androscoggin River since Public Law 2021, Chapter 552 became effective on August 8, 2022.
6. The existing Department record demonstrates and provides sufficient evidence to conclude and to certify with this Board Order that the Project as proposed and conditioned by the WQC meets all applicable Class B water quality standards, in addition to the Class C and other standards addressed by the June 8, 2022, WQC.
7. This Board Order affirms the Department's WQC issued on June 8, 2022, and grants the relief requested by the Appellants by certifying that the Project meets Class B water quality standards.

THEREFORE, the Board AFFIRMS the Department Order approving the application of TOPSHAM HYDRO PARTNERS LIMITED PARTNERSHIP for water quality certification of the PEJEPSCOT HYDROELECTRIC PROJECT in TOPSHAM, Maine with the modified findings regarding Class B standards in addition to Class C standards.

All other findings and conclusions of Department Order #L-007867-33-S-N not addressed by this order on appeal are incorporated herein.

DONE AND DATED AT AUGUSTA, MAINE, THIS 6th DAY OF APRIL, 2023.

BOARD OF ENVIRONMENTAL PROTECTION

By: 
Susan M. Lessard, Chair