



Low Impact Hydropower Institute's (LIHI) Certification Review for American Tissue Hydroelectric Project

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Note: This report was issued internally in January 2020. At that time, the Applicant was advised that LIHI would keep the application on hold until fish passage work that was in progress at the time was completed. This report has been updated by LIHI staff in 2022 to reflect completion of that work and to update other information since the original reviewer report was completed. Specific updates are provided at the end of each applicable report section.

1. BACKGROUND

The 1.0-MW American Tissue Hydroelectric Project (ATHP or Project) is one of five dams located on the 11-mile-long Cobbosseecontee Stream in Gardiner, Kennebec County, Maine (See Figure 1). The Project is the second dam on the stream, 1.15 river miles (RM) above its confluence with the Kennebec River and is the only dam used to produce hydroelectric power.



Figure 1 – Location Map



The Project dam was constructed in 1900 and operated as a run-of-river (ROR) facility until the powerhouse was destroyed by fire in 1970. The Project was relicensed to Maine Hydroelectric Development Corporation (MHDC) on May 9, 1979 and began operation once reconstruction was completed in 1983. Today, the Project is owned by KEI (Maine) Power Management (III) LLC, (KEI or Applicant)¹. Under relicensing, a Federal Energy Regulatory Commission (FERC) Environmental Assessment (EA) was issued in June of 2018². A Section 401 Water Quality Certificate (WQC)³ was issued by the Maine Department of Environmental Protection (MDEP) on November 29, 2018. The Project was relicensed on April 30, 2019 by FERC as Project No. 2809⁴. The 40-year license will expire on May 1, 2059.

The Project operates in a ROR mode with a bypass minimum flow release of 10 cubic feet per second (CFS), from December 1 through May 31 and 29 CFS from June 1 through November 30. The Project is rated at 1.0 megawatt (MW) and is estimated to produce an Average Annual Generation (AAG) of 5,430 Megawatt-hours (MWh), which corresponds to an annual plant factor of 62.0%.

KEI submitted an initial application for LIHI certification of the Project in September of 2019. On October 29, 2019, LIHI notified KEI that the intake review for the Project was complete. The intake review found that a revised application was needed. KEI supplied a revised application package on November 8, 2019.

2022 Update:

The Applicant provided additional supplemental information periodically from 2020 to May 2022, discussed in the sections below.

2. COBBOSSEECONTEE RIVER BASIN

The Cobbosseecontee watershed includes the communities of Gardiner, West Gardiner, Litchfield, Richmond, Winthrop, Manchester, Monmouth, Readfield, and Hallowell and is approximately 217 square miles (SQMI) in area. About 10 percent of the watershed is occupied by lakes and ponds (See Figure 2).

The principal river in the watershed is Cobbosseecontee Stream, which begins at the outlet of Cobbosseecontee Lake in Manchester, flows about 20 miles, and enters the Kennebec River at Gardiner, Maine. The topography of the watershed is mostly rolling, low elevation hills and valleys, with the highest relief in the northwestern section (Readfield, Monmouth), and the lowest relief in the southeastern section (West Gardiner, Richmond). Water flow is generally from northwest to southeast, except for the southernmost portion, where water flows abruptly northeast from a topographical low near the outlet of Pleasant Pond to a short and abrupt drop in downtown Gardiner.

The Cobbossee Watershed District (CWD)⁵, Maine's first regional lake management district, was authorized by the Maine State Legislature in 1971 to protect, improve and manage 28 lakes, ponds, and streams in the Cobbosseecontee watershed.

¹ Sherri Loon – Coordinator of USA Operations – 207.203.3026 – Sherri.Loan@kruger.com

² Final EA - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20180629-3008&optimized=false

³ WQC- https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20181130-5005&optimized=false

⁴ License - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20190430-3098&optimized=false

⁵ CWD - 167 Main Street, Winthrop, Maine – 207.377.2234

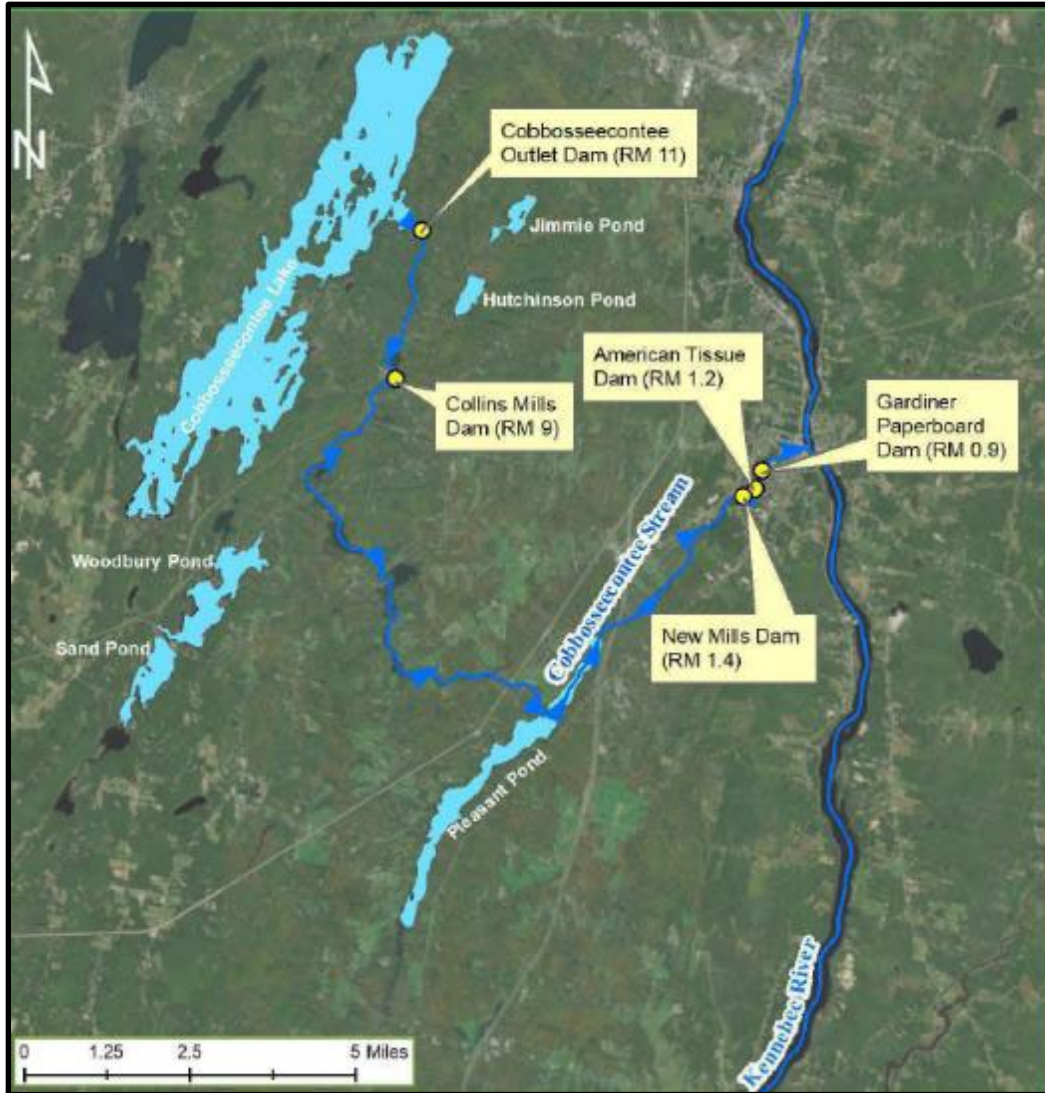


Figure 2 - Dam Locations on Cobbosseeconte Stream

There are a number of dams⁶ both upstream and downstream of the Project. A listing of the dams from upstream to downstream include:

- The Cobbosseeconte Lake Dam at RM 11, regulated by the CWD. The project has no upstream or downstream fish passage.
- The Collins Mill Dam at RM 9, regulated by the CWD. The development has no upstream or downstream fish passage.
- The New Mills Dam at RM 1.4, regulated by the CWD. This site historically operated under a FERC hydropower exemption (P-5399) until May 16, 1996, when the FERC exemption was surrendered. All powerhouse facilities are closed, and all inflow is passed over the spillway or through low-level

⁶ The Project's dam is listed italicized.



outlet gates.

- *The American Tissue Project's Dam at RM 1.2 (latitude 44°13'33.26" N, longitude 69°47'02.58" W), owned by KEI and licensed as FERC Project 2809. This is the only dam that operates for hydroelectric power. The Project has an agreement with the CWD to operate the gates at the upstream New Mills Dam to pass the CWD's recommended release. The American Tissue Project has an upstream eel ladder and spills flow over the spillway into a plunge pool in combination with opening low-level outlet gates to assist in downstream passage.*
- The Gardiner Paperboard Dam at RM 0.9, owned by the City of Gardiner and located in the towns of Litchfield, Richmond, and West Gardiner. The development has no upstream or downstream fish passage.

3. ZONES OF EFFECT (ZOE_s)

The Project has three ZOE_s defined from upstream to downstream as shown in Figure 3 below. The ZOE_s are Zone 1 (Blue Line) – Impoundment Reach (RM 1.4 to RM 1.2), Zone 2 (Yellow Line) – Bypass Reach (RM 1.2 to RM 1.15) and Zone 3 (Red Line) – Tailrace & Downstream Reach (RM 1.15 to RM 1.1).



Figure 3 - Zones of Effect



The alternative standards selected to satisfy the LIHI certification criteria in each of these ZOE's are identified in the following tables. In each table, where the Reviewer choice of the most appropriate Standard differed from that indicated in the application, that change is indicated by a **red X = Reviewer-selected Standard**.

Table 1 – Impoundment Reach - ZOE 1 Alternative Standards						
Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes	X	X			
B	Water Quality		X			
C	Upstream Fish Passage	X	X			
D	Downstream Fish Passage		X			
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X		X		

Table 2 – Bypass Reach - ZOE 2 Alternative Standards						
Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			
B	Water Quality		X			
C	Upstream Fish Passage		X			
D	Downstream Fish Passage		X			
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X		X		

Table 3 – Tailrace & Downstream Reach - ZOE 3 Alternative Standards						
Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			
B	Water Quality		X			
C	Upstream Fish Passage		X			
D	Downstream Fish Passage	X	X			
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources	X		X		



4. PROJECT HYDROLOGY

The USGS gage 01049500-Cobbosseecontee Stream at Gardiner, Maine, located immediately downstream of the Project, has a contributing drainage area of 216.7 SQMI and has recorded streamflow since January 1, 1890 with a break from 1964 to 1976. As stated in the application, based on flows from January 1985 to December 2015, the average daily flow is 392 CFS and the maximum daily flow was 3,840 CFS.

The period of record⁷ (POR) average daily flow is 368 CFS, while the minimum daily flow is 4.6 CFS occurring on August 25, 1983 and the maximum daily flow is 4,320 CFS occurring on March 20, 1936. The maximum instantaneous flow of 5,029 CFS occurred on March 21, 1936.

A daily flow of 55 CFS is exceeded about 90% of the time annually. A daily flow of 260 CFS is exceeded about 50% of the time annually. A daily flow of 840 CFS is exceeded about 10% of the time annually. The 1% exceeded annual daily flow is 2,100 CFS.

The 10-year daily flow is about 3,447 CFS, the 50-year daily flow is 4,316 CFS and the 100-year daily flow is 4,623 CFS.

Finally, I performed a 7Q10 analysis⁸ for the Project. The annual 7Q10 using POR flows from January 1 through December 31 is 19 CFS. The 7Q10 for POR flows restricted to a season from June 1 through November 30 is 20 CFS, while for a season from December 1 through May 31 is 49 CFS.

5. PROJECT DESCRIPTION

As specified in the 2018 WQC and 2019 license, KEI operates the Project in a ROR mode while providing an instantaneous minimum flow within the bypass of 10 CFS or inflow, whichever is less, from December 1 through May 31 and 29 CFS from June 1 through November 30. ROR operation or minimum flows may be temporarily modified if required by operating emergencies beyond the control of KEI, and for short periods upon mutual agreement between KEI, the U.S. Fish and Wildlife Service (USFWS) and the MDEP.

The Project's existing facilities include:

- An impoundment with a storage capacity of 108 acre-feet (ACFT) and a surface area of 5.5 acres at a normal maximum headpond elevation of 123.3 feet mean seas level (FMSL). See Figure 4;
- A gravity dam (See Figure 5) consisting of:
 - A 61-foot-long, 26-foot-high by 7-foot-wide west abutment with 2-foot-high flashboards;
 - A 100-foot-long spillway varying from 19 to 23 feet in height with 1-foot-high flashboards topping out at an elevation of 123.3 FMSL. The spillway has a discharge capacity of 8,700 CFS at an elevation of 128.7 FTMSL;
 - A 95-foot-long, 27-foot-high by 10-foot-wide east abutment;
- An intake with 2-inch clear spaced trashracks which pass water into a 280-foot-long by 7-foot-diameter underground steel penstock providing water to the powerhouse. From June 1 through

⁷ Period of record is defined from January 1, 1900 through December 31, 2019.

⁸ 7Q10 is the lowest average discharge over a period of one week with a recurrence interval of 10 years. Therefore, there is only a 10% chance that there will be a lower weekly flow in any given year.



November 15, KEI installs a full trashrack overlay to reduce the clear spacing to 7/8 inch.

- Three 4.67-foot-diameter pipes with steel slide gates located at the base of the dam;
- A downstream fishway with plunge pool;
- An upstream eel ladder;
- A powerhouse (See Figures 6 and 7) containing one 1.0-MW Kaplan turbine/generator. The turbine can operate at hydraulic flows ranging from 100 CFS to 360 CFS. Based on a flow duration analysis using POR daily flows, the powerhouse operates as a ROR facility for river flows from 129 CFS to 389 CFS or about 59 percent of the time from June 1 through November 15. Similarly, the powerhouse operates as a ROR facility for river flows from 110 CFS to 370 CFS or about 55 percent of the time from December 1 through May 31.
- A tailrace which at a powerhouse hydraulic capacity of 360 CFS, the elevation is 85 FTMSL;
- A 250-foot-long 12 kilovolt (kV) transmission line with step up transformer.



Figure 4 - Project Impoundment Looking Downstream Toward Boat Barriers



Figure 5 - Project Dam Looking Downstream



Figure 6 – Generator / Turbine

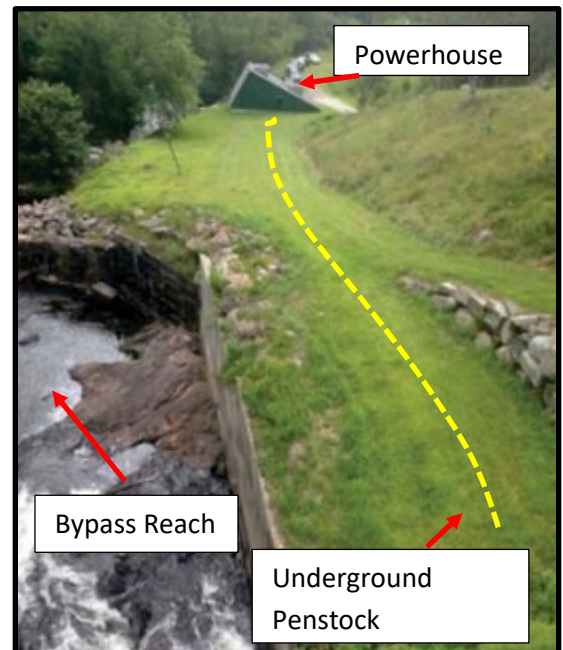


Figure 7 -Penstock & Powerhouse



The new license required:

- A permanent upstream eel passage facility;
- A permanent downstream fish passage facility, designed as a surface weir to release the 10 CFS or 29 CFS minimum flow from June 1 through November 30 from the impoundment into a modified plunge pool.

6. REGULATORY SUMMARY

On May 9, 1979, FERC issued a license to the MHDC for the Project which expired on April 30, 2019. On April 22, 1982, due to financial concerns, MHDC transferred Project ownership to Gardiner Hydro Company (GHC). On August 14, 1987, GHC transferred ownership of the Project to Consolidated Hydro Maine, Inc. (CHM). On September 25, 1996, CHM transferred Project ownership to Ridgewood Maine Hydro Partners (RMHP). On September 23, 2009, RMHP transferred the Project to KEI.

On April 28, 2017, KEI filed an application for subsequent license for the Project. The EA was issued in June of 2018⁹. The WQC was issued by the MDEP on November 29, 2018.¹⁰ On April 30, 2019, FERC issued a subsequent license for the Project with expires on April 30, 2059.¹¹

A. Post-Licensing and Agency Consultation Summary

The following important licensing correspondence occurring after license issuance includes:

- On July 16, 2019, KEI filed a revised Exhibit G drawing identifying the revised Project boundary. Additionally, the revised drawing shows the locations of the Project's step-up transformer and transmission line. On August 1, 2019, FERC approved the Exhibit G drawing.
- On October 21, 2019, FERC approved an August 26, 2019 extension of time request until February 21, 2020 for providing the upstream and downstream eel passage, and downstream anadromous fish passage designs.
- On December 20, 2019, KEI filed the 2019 Downstream Fish Passage Report.

2022 Update:

- On January 30, 2020 FERC approved a January 24, 2020 extension of time request for filing the Article 403 Operations Compliance Plan and the Article 405 Fishway Operation and Maintenance Plan.
- On June 26, 2020 FERC approved the June 1, 2020 Upstream and Downstream American Eel Passage Facility Plans and Downstream Anadromous Fish Passage Facility Plan. KEI had received resource agency concurrence on the plans and fish passage designs.
- On April 19, 2021, KEI filed the Operation Compliance Monitoring Plan and Fishway Operation and Maintenance Plan. FERC approved the plan on February 15, 2022.
- On November 1, 2021, KEI filed the final construction report for the fish passage facilities.

⁹ Final EA - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20180629-3008&optimized=false

¹⁰ WQC - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20181130-5005&optimized=false

¹¹ License - https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20190430-3098&optimized=false



- On April 4, 2022, KEI filed a revised Exhibit A and Exhibit F reflecting the new fish passage facilities. FERC approved the exhibits on February 15, 2022.

B. Compliance Issues

A review of the FERC docket found minor compliance correspondence related to the LIHI criteria since KEI acquired the Project on September 23, 2009:

- On September 20, 2015, an alleged license violation was filed with FERC by Mr. Douglas H. Watts¹². Mr. Watts stated that spillage flows released across the entire dam, particularly when the powerhouse was not operating, were not being emptied into the plunge pool, contributing to increased fish mortality due to fish directly striking the spillway's concrete apron. Mr. Watts recommended passing these flows by opening additional low-level outlet gates at the dam. A similar letter from Mr. Watts was sent on October 3, 2015 and additional information was submitted by him to FERC on October 29, 2015 and November 8, 2015.
- On September 30, 2015 FERC requested additional information from KEI which was submitted on October 9, 2015.
- On March 14, 2016¹³, FERC ruled the Project was not in violation of the license. FERC stated the 2003 FERC Order Modifying and Approving Permanent Downstream Fish Passage did not prohibit spilling water over the entire spillway; it only requires that flows be passed through the flashboard notch and into the plunge pool at all times during the specified downstream passage season.

2022 Update:

No additional compliance issues were identified in the FERC e-library.

7. LIHI CERTIFICATION PROCESS

KEI submitted an application for LIHI certification in September of 2019. On October 29, 2019, LIHI notified KEI the intake review for the Project was complete. The intake review found that a revised application was needed. KEI supplied a revised application package on November 8, 2019.

On August 29, 2019, Kleinschmidt Associates (KA), on behalf of KEI, consulted with state and federal agencies, requesting confirmation that the Project is operated in compliance with the conditions of the FERC license and WQC (See application).

On September 27, 2019 (see application), the MDEP responded that *“the Department has no evidence to suggest that the continued operation of the Project will negatively impact the designated uses, numeric or narrative criteria of its classification standards (Class B) ... the Cobbosseecontee Stream is not attaining the designated use of fishing, however, the non-attainment status due to the fish consumption advisory is not a result of the operation of the ATHP By following these Conditions outlined in the 2018 WQC, the Department has determined that KEI, through consultation with resource agencies, has made adequate provisions to accommodate fish passage for anadromous species. Additional results of WQC studies showed that the ATHP impoundment, the Cobbosseecontee Stream bypass, as well as the tailrace attain most*

¹² https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150921-5054&optimized=false

¹³ https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20160314-3009&optimized=false



designated uses and water quality standards for Class B waters. The Department has determined that standards that are not attained are not a result of Project activity. Therefore, the Department supports the Low Impact Hydropower Certification of the ATHP (FERC No. 2809)."

A. Comment Letters

On November 13, 2019, LIHI filed notice to their email list that the public comment period for the application had been opened. The notice stated, *"LIHI is seeking comment on this application. Comments that are directly tied to specific LIHI criteria (flows, water quality, fish passage, etc.) will be most helpful, but all comments will be considered. Comments may be submitted to the Institute by e-mail at comments@lowimpacthydro.org with "American Tissue Project Comments" in the subject line, or by mail addressed to the Low Impact Hydropower Institute, 329 Massachusetts Avenue, Suite 6, Lexington, MA 02420. Comments must be received at the Institute on or before 5 pm Eastern time on January 12, 2019 to be considered. All comments will be posted to the web site and the applicant will have an opportunity to respond. Any response will also be posted. The project description and complete application can be found [HERE](#)."*¹⁴

Several comment letters were received by LIHI during the 60-day public comment period which ended on January 12, 2020.

- On November 14, 2019, LIHI received a comment letter from Katahdin Energy Works pertaining to a dam upstream of the Project on the Cobbosseecontee Stream. The Project's operation has no effect on the operation of this upstream dam site that is currently regulated by the CWD.
- On November 18, 2019, LIHI received a comment letter from the MDEP (See Appendix A.) The letter states the MDEP supports LIHI certification for the Project conditioned on all WQC conditions being successfully followed.
- On December 16, 2019, LIHI received a comment letter from Upstream¹⁵ (See Appendix A.) The letter alleges that the biological and ecological significance of the Cobbosseecontee Stream is being understated in the application and that upstream and downstream passage of American eel and downstream passage for river herring is required at the Project. On December 19, 2019, KEI emailed LIHI a response to those comments stating:
 - Downstream passage has been occurring for over fifteen years. Eel and alewife mortality has been insignificant using deep flood gates and trashrack overlays for eels.
 - As required by the WQC and license, KEI is building new downstream passage facilities in 2020.
- On January 6, 2020, LIHI received a letter from the Maine Department of Marine Resources (MDMR) (See Appendix A), stating that the required installation of permanent upstream and downstream passage facilities for eel by June of 2021 and the installation of permanent downstream passage for diadromous fish by August of 2021 precludes LIHI compliance with the upstream and downstream passage criteria until the facilities become operational. I called and talked to Ms. Gail

¹⁴ Project Application on LIHI website - <https://lowimpacthydro.org/american-tissue-project-complete-application-received/>

¹⁵ Upstream is a 501c3 organization whose stated mission is to restore sea-run fish passage and ecological health to the Cobbosseecontee Stream.



Wippelhauser, a MDMR Scientist. Ms. Wippelhauser expressed concern that KEI had not been proactive in meeting reporting requirements pertaining to fishway designs and believed actions to date would prohibit meeting these fishway install dates. Until their completion, Ms. Wippelhauser's view is that any interim fish passage approaches claimed by KEI are inadequate.

- On January 7, 2020, LIHI received an email from the USFWS (See Appendix A), stating the same position as in the MDMR January 6, 2020 letter.
- On January 8, 2020 (See Appendix A), LIHI received an email from Ms. Wippelhauser of MDMR adding clarification as to why the Project was not meeting the fish passage criteria. Downstream migrants passing the spillway were striking the downstream face of the concrete spillway. This impacting with the spillway was even occurring for migrants that pass through the designated section above the plunge pool. In addition, the MDMR believed the length of the spillway notch and the size of the plunge pool were undersized. Lastly, the upstream eel passage ladder shown in KEI's LIHI application had never been consulted on, seen, or approved by MDMR or the USFWS.
- On January 9, 2020 (See Appendix A), LIHI received an email from the USFWS stating the same position as in the MDMR January 8, 2020 letter.
- On January 8, 2020, LIHI received a comment email from Maine Rivers¹⁶ (See Appendix A) which stated the lack of permanent upstream fish passage means that the KEI Project does not meet LIHI's upstream passage criterion. The letter also acknowledged that alewives are transported above the Project and that the FERC license prescribes downstream passage conditions for the outmigration of alewives. However, the commenter believes that stocking falls far short of the potential productive capacity of the watershed and therefore, KEI has an obligation to install upstream passage for the full suite of diadromous fishes that once frequented this watershed regardless of when upstream fish passage is installed at the downstream Gardiner Paperboard Dam.
- On January 10, 2020 (See Appendix A), LIHI received a letter from the National Marine Fisheries Service (NMFS) commenting on three LIHI certification criteria:
 - The agency supported the Project's ROR operation, but believed a minimum flow is needed in the bypass reach. The agency recommended that KEI address how they will operationally provide these flows to the bypass reach throughout the year.
 - The proposed upstream eel ramp is neither constructed nor operational. Although the license requires completion and operation by late spring 2021, a condition for LIHI certification should ensure that KEI completes the construction of the required fish passage facilities in a timely manner.
 - The proposed downstream passage facilities are not constructed or operational. Although the license requires completion and operation by the summer of 2021, a condition for LIHI certification should ensure that KEI completes the construction of the required fish passage facilities in a timely manner.
- On January 13, 2020, a day after the close of the comment period, LIHI received an email from Mr. Jeff Wells, PhD (See Appendix A), a local conservation biologist who commented that he does not

¹⁶ Maine Rivers is a nonprofit organization with a mission to protect, restore and enhance the ecological health of Maine's river systems.



support LIHI certification because the Project does not allow migratory fish passage although several species occur in the lower reaches of the stream. He noted that the application did not acknowledge important riparian wildlife habitats and a recreational trail that borders the Project.

8. CERTIFICATION REVIEW

This section contains my certification review of the Project with regard to the LIHI Certification criteria. As part of my review, I conducted a FERC e-library search to verify claims in the certification application. My review concentrated on the period from September 23, 2009, the date that KEI acquired the Project, through December 31, 2019, for FERC docket number P-2809.

2022 Update:

This review report was updated in 2022 by LIHI staff to reflect new information provided by the Applicant and a FERC e-library search from January 1, 2020 to May 6, 2022. Key updates are discussed in the sections below.

A. LIHI Criterion-Flows

The goal of this criterion is to support habitat and other conditions that are suitable for healthy fish and wildlife resources in riverine reaches that are affected by the facility's operation.

The application states that the Project satisfies the LIHI flows criterion in all ZOE's by meeting alternative standard A-2, agency recommendation. Generally, impoundment zones qualify for the A-1, not applicable / de minimis effect standard since the criterion is focused on riverine reaches and the Project operates in an ROR mode.

The application states that KEI maintains the Project's minimum flows as required by the terms of license Article 402, and the WQC conditions. The license requires KEI to operate the project as a ROR facility while providing an instantaneous minimum flow within the 345-foot-long bypass reach (see Figure 8) of 10 CFS or inflow, whichever is less, from December 1 through May 31, and 29 CFS from June 1 through November 30. The 2018 WQC also limits impoundment fluctuations to within one foot of the 123.3 FTMSL normal pond elevation. If flashboards fail, the headpond will drop to 122.3 FTMSL.



Figure 8 -Bypass Reach

The Project generates electricity by passing flows from 100 CFS to 360 CFS through the turbine. After releasing the minimum flow, if the remaining inflow is less than 100 CFS, the turbine is not run, and the remaining inflow is spilled over the spillway. Inflow from 100 CFS to 360 CFS is passed through the turbine while maintaining the impoundment at its normal headpond elevation. For inflow greater than 360 CFS, 360 CFS is passed through the turbine and any excess inflow is passed over the spillway.

The FERC EA summarized results of instream flow studies conducted during relicensing that found:

- A minimum flow of 10 CFS achieves MDEP's guideline that 75 percent of the river cross section is wet at all times;
- A minimum flow of 10 CFS would not constrict the zone of passage for downstream alewife and adult eel movements;
- A flow of 29 CFS during the downstream fish migration season increases wetted width to over 95 percent and provides improved cover from predation and additional macroinvertebrate habitat.
- The operation compliance monitoring plan will ensure compliance with these minimum flow requirements.

In the event of planned or unplanned deviations lasting more than 3 hours from established minimum flows or impoundment levels, KEI must consult with the resource agencies and file documentation with FERC detailing the reasons for the deviation no later than 14 days after each such incident. ROR operation or minimum flows may be temporarily modified if required by operating emergencies beyond the control of KEI, and for short periods upon mutual agreement between KEI, USFWS and MDEP. An annual report of all deviations lasting less than 3 hours must also be submitted by March 1.



On January 2, 2020, I left a voice message with Ms. Sherri Loon, KEI's LIHI Coordinator, pertaining to the status of the Operation Compliance Monitoring Plan (OCMP) that was due for FERC submittal by November 1, 2019. On January 7, 2020, Ms. Loon forwarded me correspondence documenting that KEI sent the draft OCMP to resource agencies for review (See Appendix A). The USFWS requested that the review of the OCMP be delayed until more specifics pertaining to the fishway passage designs were forthcoming. However, KEI had not yet filed an extension request with FERC to acknowledge the delay in agency consultation but indicated in a January 15, 2020 email to LIHI that they were awaiting one final reply from a resource agency on the draft extension request before filing it with FERC. KEI submitted the extension request on January 24, 2020 and FERC granted the extension request on January 30, 2020.

2022 Update:

The compliance plan was developed in consultation with the resource agencies and filed with FERC on April 19, 2021 and was approved on February 15, 2022. Impoundment levels are monitored by a pressure transducer and a Programmable Logic Controller (PLC) is used to automatically adjust the unit settings every 1 minute if needed to maintain required impoundment levels. Turbine operation is automatically stopped whenever the impoundment level drops below the 1-foot operational band. Documentation of compliance with the impoundment limits is supplied by electronic recording of the impoundment level in 15-minute increments in addition to instantaneous visual displays in the powerhouse. A staff gauge is located on the right side of the intake to provide visual confirmation of the impoundment level from public viewable areas.

The minimum flow releases are supplied through the dam crest fish bypass notch and flows pass through the fish bypass system. The required passage season flow is supplied when the bypass chute is fully opened. An approximately 12 3/8-inch-high board section is placed within the downstream bypass stop log slot to limit the chute flow to the required flow setting during the non-passage season. Minimum flow releases are maintained through gate leakage or opening of a low-level flood gate during periods when the bypass is non-operational for maintenance or cleaning activities that exceed a 24-hour duration.

This review found no deviations or violations pertaining to impoundment fluctuations or minimum flow releases since KEI's acquisition of the Project. KEI adequately complies with licensed flow conditions and impoundment fluctuations, does not adversely affect aquatic habitat, and therefore satisfies the flows criterion.

B. LIHI Criterion-Water Quality

The goal of this criterion is to ensure water quality is protected in water bodies directly affected by facility operations, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

The Applicant states that the Project satisfies the LIHI water quality criterion in all ZOE's by meeting alternative standard B-2, agency recommendation.

The MDEP issued a WQC for the Project on November 29, 2018. Additionally, the MDEP has classified the Cobbosseecontee Stream mainstem, as a Class B waterway, including both the Project's impoundment and tailrace areas. Class B water supports 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
- Unimpaired habitat for fish and other aquatic life.

During the relicensing process, KEI conducted a variety of water quality testing between June 2015 and October 2015 using methods in accordance with MDEP protocols within the impoundment, bypass, and tailrace areas.

KEI performed lake trophic sampling in the impoundment twice a month using an epilimnetic¹⁷ core. These water samples were collected for analysis of total alkalinity, color, pH, chlorophyll-a, and total phosphorous. During each sampling event, KEI also collected Secchi disk transparency measurements and water temperature and dissolved oxygen (DO) profiles at 1-meter intervals. The impoundment water quality sampling station was located approximately 230 feet upstream of the dam. On August 14, 2015, KEI collected additional water samples for analysis of conductivity, dissolved organic carbon, and dissolved metals.

The results for all sampled parameters met Class B water criteria and the impoundment was characterized as mesotrophic¹⁸. DO concentration in the impoundment ranged from a low of 7.1 milligram per liter (mg/l) in August to a high of 11.2 mg/l in late October. Average DO during the peak summer period of July through September ranged from 7.4 to 8.7 mg/l. Water quality monitoring also demonstrated that the impoundment did not thermally stratify. The impoundment exhibited a slight decrease in temperature from the surface to the bottom of the impoundment, ranging from 0.7 to 1.6 degrees C, during the months of June, July, and August. KEI monitored DO and water temperature on an hourly basis in the bypass reach, approximately 230 feet downstream from the dam. Monitoring showed that water temperatures in the bypass reach were similar to the impoundment, with an average of 25.0 degrees C. DO levels in the bypass reach exceeded the minimum standard for Class B waters, ranging from 7.2 to 8.8 mg/l, with an average of 8.3 mg/l. In a March 31, 2017 letter, MDEP confirmed that the Project meets applicable Class B DO criteria downstream of the dam.

KEI monitored benthic macroinvertebrates at sites approximately 300 feet and 800 feet downstream from the dam. Three samplers were placed at each site and were retrieved after 28 days. The monitoring results demonstrated that the benthic macroinvertebrate communities downstream of the dam were abundant, but not very rich in taxa¹⁹ and did not attain Class B aquatic life standards. In a May 4, 2016 phone call, MDEP noted that there are signs of nutrient enrichment throughout the watershed, which influences the macroinvertebrate community, and the agency believes the issue originates in or upstream of Pleasant Pond. Furthermore, MDEP stated that it is not likely that the Project is causing or contributing to the nutrient enrichment in the watershed or to changes in the benthic macroinvertebrate community structure.

¹⁷ The temperature of lake water is comprised of three layers, the layer above the thermocline or the epilimnion layer, the thermocline, and the layer below the thermocline or hypolimnion layer.

¹⁸ Mesotrophic lakes exhibit an intermediate level of productivity. These lakes have medium-level nutrients and are usually clear water with submerged aquatic plants.

¹⁹ Taxa is a group of one or more populations of an organism.



At MDEP's request, KEI collected water temperature and DO profiles from the deep spot in the New Mills Dam impoundment, located approximately 155 feet upstream of the New Mills Dam which is just upstream of the American Tissue Project. The sampling was conducted to characterize the influence, if any, of that project on water quality in Cobbosseecontee Stream. The data collected from the sampling effort showed that water temperature is consistent between the New Mills and the American Tissue Project's impoundments, and DO concentrations are lower in the New Mills impoundment than in the American Tissue Project impoundment.

A Maine Pollutant Discharge Elimination System and Maine Water Discharge License²⁰ was granted to KEI for the Project on March 27, 2019, continuing to allow discharge of non-contact cooling water from Outfall #001 in the powerhouse, which is limited to a daily maximum release of 7,200 gallons per day (GPD) and a daily maximum temperature of 95 degrees F.

2022 Update:

The Project reach is listed as impaired on the state's 2018/2020/2022 Integrated Report. The river from the outlet of Pleasant Pond upstream of the Project to the Kennebec River confluence downstream is listed for aquatic life non-attainment due to total phosphorus and algae, subject to re-review and potential de-listing by the state at a later date.

This review found no license deviations nor any issues pertaining to the Project's water quality compliance and study results. MDEP noted that the Project is not contributing to water quality issues. Based on the information provided, the Project satisfies the water quality criterion.

C. LIHI Criterion-Upstream Fish Passage

The goal of this criterion is to ensure safe, timely and effective upstream passage of migratory fish so that the migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the Project's facilities.

The Applicant states that all ZOE's satisfy the LIHI upstream fish passage criterion by meeting alternative standard C-2, agency recommendation. Typically, impoundments qualify for standard C-1, not applicable / de minimis effect since once upstream of a dam there is no further Project-related barrier to passage.

The Draft Fishery Management Plan for the Cobbosseecontee Stream issued by the Maine Department of Marine Resources (MDMR), dated December 2002²¹ states that the Cobbosseecontee Stream drainage basin has historically supported runs of at least seven species of native diadromous fish, whose populations were significantly reduced or extirpated by the introduction of dams without fishways. American eels were found throughout the drainage, but the first dam on the river, Gardiner Paperboard Dam, prevents alewife, American shad, Atlantic salmon, blueback herring, rainbow smelt, and striped bass from migrating upstream.

There were originally four stone dams below the Gardiner Paperboard Dam, called Dam No. 1, No. 2, No. 3, and No. 4. These dams were breached in the early 20th century and are now reduced to stone abutments

²⁰ <https://www.epa.gov/sites/production/files/2019-03/documents/draftme0036617permit.pdf>

²¹ <http://cybrary.fomb.org/pages/20021200-MDMRCobbossee2002.pdf>



along the river channel.²² The Gardiner Paperboard Dam (Dam No. 5) is now the lowermost dam on Cobbosseecontee Stream. That dam was constructed in 1761²³ prior to the Project dam which was constructed in 1879. Therefore, the Project dam does not appear to be the original cause of extirpation of migratory fish.

In 1997, five years prior to the issuance of the fishery management plan, MDMR began stocking alewives in Pleasant Pond upstream of the New Mills dam, in order to restore a downstream run. Alewives are an important forage fish, and MDMR anticipated that a downstream run of alewives would attract sportfish to the mouth of Cobbosseecontee Stream. This strategy has proved successful. Striped bass congregate in the lower, free-flowing section of the stream in the fall to feed on juvenile alewives. This stocking of alewives has been expanded to the upstream Horseshoe Pond located between Collins Mills Dam and New Mills Dam.

In August of 2006, KEI installed a temporary upstream eel fishway near a rock wall on the west end of the Project's dam to facilitate passage of about 1,800 American eels and it was shown to be beneficial in passing eel upstream. License article 405 required KEI to file a Fishway Operation and Maintenance Plan (FOMP) describing operation and maintenance of the upstream eel passage facility with FERC by May 1, 2020. The plan development was delayed²⁴ and KEI failed to file extension requests after that time, as FERC noted in its plan approval. That approval also amended license Article 401(b) to allow annual reports to be filed by February 15 rather than by November of each year.

KEI consulted with MDEP, MDMR, Maine Inland Fisheries and Wildlife (MDIFW), USFWS, and NMFS to finalize the design of permanent upstream passage facilities for American eel which was to be operational at the start of the second migration season after license issuance (2021). The FERC docket reveals that on October 21, 2019, FERC approved an August 26, 2019 extension of time request until February 21, 2020 for KEI to provide the upstream and downstream eel passage, and downstream anadromous fish passage designs²⁵. Draft design plans were submitted to resource agencies on January 15, 2020 with a consultation meeting scheduled shortly thereafter.

Once upstream anadromous fish passage becomes available at the downstream Gardiner Paperboard Dam²⁶, KEI is required to install, operate, and maintain an upstream anadromous fish passage facility. The facility will need to be operational for the second migration season following the installation at the Gardiner Paperboard Dam. This fish passage facility must be operated during the predefined upstream migration period from May 1 to July 31 each year. KEI must then conduct fishway passage effectiveness studies for a period of two years.

The license contains a fishway prescription for the U.S. Department of the Interior (USDOI) and the U.S. Department of Commerce (USDOC) that allows these agencies to require fishway modifications if fish passage is ultimately found to be ineffective.

²² <http://cybrary.fomb.org/pages/20120201-CobbH20shed2.pdf>

²³ See FERC EA, p. 42

²⁴ This was at the beginning of the Covid-19 pandemic which likely disrupted KEI's ability to submit the plan on time.

²⁵ https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20191021-3040&optimized=false

²⁶ The Gardiner Paperboard Dam is privately-owned and is located 0.3 miles downstream of the Project. There are no known plans for installing upstream fish passage facilities at this site.



Comments Received

The January 6, 2020 MDMR comment letter stated that the new required installation of upstream eel passage facilities by June 1, 2021, precludes compliance with LIHI's upstream passage criterion until the facilities become operational. MDMR believed that actions to date, (i.e., requesting a time extension until February 21, 2020 to provide fishway designs) would prohibit meeting these fishway install dates. Further, until their completion, the MDMR's position is that the interim fish passage approaches are inadequate. The January 7, 2020 email from USFWS stated the same position as in the MDMR letter.

The January 8, 2020 email from Ms. Wippelhauser of MDMR added clarification as to why the Project was not meeting fish passage criteria. She stated that the upstream eel passage ladder shown in KEI's LIHI application (Photos 6-6 and 6-9 in Appendix A of the application) had never been consulted on, seen, or approved by MDMR or the USFWS. The January 9, 2020 email from USFWS on January 8, 2020 stated the same position as in the MDMR letter.

The January 10, 2020 NMFS letter stated that a LIHI certification condition should be required to ensure upstream passage is operational as currently defined in the license.

A January 8, 2020 email from Maine Rivers stated that the Project should not be certified, since it along with the other dams on the river, were the cause of extirpation of native diadromous fish and continue to block upstream migration, and as a result the watershed is well below its productive capacity for alewife. A January 13, 2020 email from Jeff Wells contained similar comments.

LIHI staff held a teleconference with the Applicant and their agent on January 29, 2020 to clarify questions about the upstream eel passage photographs in the application. The Applicant stated that those were old photos from prior to their ownership that should not have been included in the application, and that MDMR's Skip Zink had requested installation of a temporary upstream eel ladder as a test to see if eels were present. The Applicant reported that Ms. Wippelhauser would have been aware of that test at the time. The temporary eel ladder is no longer in place.

2022 Update:

FERC did not approve construction of the upstream eel ladder until August 19, 2020²⁷. Additional delays were caused by Covid related contractor issues and MDEP's permitting process slowdowns. However, KEI confirmed to LIHI staff on August 4, 2021 that the ladder had been completed and became operational by June 1, 2021 with immediate use by eels. KEI conducted a one-season "shakedown" procedure in 2021.

The upstream eel passage system consists of a series of sloping aluminum ramp sections (18 inches wide by 6 inches high) with deepened turn and resting pools. The ascending portion of the ramp and pools is lined with Enkamat substrate and covered. The entrance ramp section is removable and located directly on the exposed bedrock with the substrate extending downstream approximately 12 inches past the ramp end. The exit portion of the passage is equipped with a down-sloped section without substrate and a water spray bar to promote passage. The exit deposits migrants into piping routed to the impoundment. The exit piping will initially deposit migrants into a collection tank located within the impoundment during the evaluation phase of system operation with the tank to be removed for permanent operation.

²⁷ https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20200819-3058&optimized=false



Ladder flow is supplied from a submersible pump located in the impoundment within a protective well attached to the dam abutment. The pump supplies approximately 52 gallons per minute (gpm) of water for ladder operation with the flow dispersed through adjustable valved piping. Approximately 3 gpm of the pump flow is supplied to the spray bar at the ladder apex with the bar flow providing transport flow throughout the ladder and attraction into the transport pipe. Approximately 3 gpm of the pump flow is piped to the transport pipe, which exits the ladder beyond the spray bar, and the flow deposited, with migrants, into the temporary trap or the impoundment. The remaining flow is piped separately down the ladder to the ladder entrance and discharged adjacent to the ladder entrance for attraction into the ladder. Each section of the piping is equipped with an adjustable flow control valve with the various valves adjusted based on field experience and judgement to maximize the ladder's effectiveness.

The fishway is operated from sunset to sunrise between June 1 and September 15, or as recommended by the resource agencies and based on site conditions. Monitoring is required for a two-year period and consists of counting eels deposited in the collection tank along with periodic nighttime visual and sub-surface observations to assess eel present if no eels are captured in the tank. The effectiveness monitoring reports and annual fishway operations reports are to be filed with FERC by February 15. FERC did not approve the fishway plan until February 15, 2022 so the first report is due in February of 2023.

This review (as of June 2022) found that KEI has adequately addressed upstream fish passage licensing concerns and has now completed the permanent facilities. However, since resource agencies have not yet commented on the shakedown period and since the effectiveness monitoring is ongoing, a condition is recommended to ensure monitoring is completed and the fishway is acceptable to agencies.

D. LIHI Criterion-Downstream Fish Passage

The goal of this criterion is to ensure safe, timely and effective downstream passage of migratory fish and for riverine fish such that the facility minimizes loss of fish from reservoirs and upstream river reaches affected by facility operations. Migratory species can successfully complete their life cycles and maintain healthy populations in areas affected by the facility.

The Applicant states that all ZOE's satisfy the LIHI downstream fish passage criterion by meeting alternative standard D-2, agency recommendation. Typically, downstream reaches qualify for standard D-1, not applicable / de minimis effect since once downstream of a dam and bypass reach there is no further Project-related barrier to passage.

Interim downstream fish passage for juvenile alewives and American eel had been operational at the Project since 2003. Under the FERC license and WQC, KEI was required to install permanent passage facilities by the second migration season after license issuance (2021).

KEI indicated in their request to FERC to extend submittal of fishway design plans and in an email to LIHI on January 15, 2020 that the requested extension would not delay construction of the fishways or the required shakedown period. Draft design plans were submitted to resource agencies on January 15, 2020 with a consultation meeting scheduled shortly thereafter.



Comments Received

The January 6, 2020, LIHI letter from MDMR stated that the new required installation of permanent downstream eel passage facilities by May 1, 2021 and diadromous fish passage facilities by August 1, 2021, precludes compliance with LIHI's downstream passage criterion until the facilities become operational. MDMR believed that actions to date, (i.e., requesting a time extension until February 21, 2020 to provide fishway designs), would prohibit meeting these fishway install dates. Further, until their completion, the MDMR's position is that the interim fish passage approaches are inadequate. The January 7, 2020 email from USFWS stated the same position as in the MDMR letter.

The January 8, 2020 email from Ms. Wippelhauser of MDMR added clarification as to why the Project is not meeting fish passage criteria. She stated that downstream migrants passing the spillway may strike the downstream face of the concrete spillway. This impacting with the spillway occurs even for migrants that are passed through the designated section above the plunge pool. In addition, the MDMR believed the spillway notch and plunge pool are undersized. The January 9, 2020 email from USFWS stated the same position as in the MDMR letter.

The January 10, 2020 NMFS letter stated that a LIHI certification condition should be required to ensure downstream passage is operational as currently defined in the license.

2022 Update:

Downstream passage facilities for anadromous fish were installed in 2020 and operate from June 1 to November 30, or as recommended by the resource agencies and based on site conditions. The system consists of a spillway notch located on the right abutment and utilizing the required bypass flow for attraction and transport flow. The overall system consists of an approximately 2-foot-deep by three-foot-wide surface weir at the right (east) end of the spillway; an approximately 14.5-foot-long by 10-foot-wide 10-foot-deep dam toe plunge pool with an adjustable 2-foot wide full height discharge notch; a plunge pool discharge channel formed by a rock channel with short height concrete walls leading to the river channel and pool; and a full- depth seasonally installed 7/8-inch hole diameter punch plate over the intake trashracks (Figure 9).

Effectiveness monitoring utilizes cameras and visual observations. A submersible video recording camera in the bypass stop log slot records passage of migrants through the system throughout the passage season. The video is reviewed weekly to confirm passage use and to provide enumeration of a subset of migrants. The number of migrants using the bypass is enumerated over a two-hour window for each week and compared with unit operational flows and impoundment levels. Camera recordings are supplemented by weekly visual observations.



Figure 9 - Downstream Anadromous Passage

Downstream passage for American eel was installed in August 2021 and is operated from August 15 to November 15, or as recommended by the resource agencies and based on site conditions. The downstream eel passage system consists of a siphon style passage system installed on the right (east) edge of the unit intake rack system and full depth seasonally installed 7/8-inch hole diameter punch plate over the intake trashracks. The passage intake is approximately 2 feet above the unit intake sill with a 14-inch-diameter screen inlet. An 8-inch transport pipe extends downstream from the inlet to the east abutment and passes through the abutment at a surface pipe trench. The transport pipe is connected to a downstream holding/collection tank with the final buried transport pipe section exiting the tank to the river reach about 100 feet downstream of the dam toe. Siphon flow is controlled through a pinch valve located immediately upstream of the holding/collection tank. The transport pipe is supplied with cleaning ports for backflushing and air piping is supplied at the inlet to assist with screen cleaning.

Monitoring of the downstream eel passage system during the initial year of system operation was limited to visual observations and periodic collection of migrants to observe their condition after passage into the collection tank. The first operational year included a shakedown period to adjust the system flows and features to enhance passage efficiency. Additional system adjustments may include modification of systems flow and cleaning operations if needed. Effectiveness monitoring during the second and third years of system operation, unless significant system changes are implemented, will combine visual observations, periodic collection, submerged video recording and correlation of passage use with unit operation and weather patterns. Video monitoring of the downstream eel passage system is conducted using three infrared submerged cameras. One camera is located adjacent to the eel passage entrance on the right (east) of the intake and another is located on the opposite intake side near the base of the intake. The cameras are deployed on the upstream concrete face of the intake piers. The third camera is located approximately mid-



depth near the middle of the collection tank. The intake cameras are used to generally document the migrant behavior at the unit intake and migrant entrance into the passage system. The tank camera is used to document migrant behavior, and the number and general condition of migrants passed through the initial portion of the bypass system.

As noted above, FERC did not approve the fishway plan until February 15, 2022 so the first report is due in February of 2023.

This review (as of June 2022) found that KEI has adequately addressed downstream fish passage licensing concerns. However, since resource agencies have not yet commented on the shakedown period and effectiveness monitoring is ongoing, a condition is recommended to ensure monitoring is completed and the fishway is acceptable to agencies.

E. LIHI Criterion-Shoreline and Watershed Protection

The shoreline and watershed protection criterion is designed to ensure that sufficient action has been taken to protect, mitigate or enhance environmental conditions on the shoreline and watershed lands associated with the facility.

The Applicant states the LIHI shoreline and watershed protection criterion in all ZOE's is satisfied by meeting alternative standard E-1, not applicable / de minimis effect.

The Project is located in the Acadian Plains and Hills ecological region, characterized by rolling plains and low hills. The Project area is predominantly forested upland and developed land. Wetlands are limited to deep water habitats and fringe areas within the littoral zone, however, there are no wetlands within the Project boundary. Limited areas of upland are located within the Project boundary which totals 7.1 acres including the impoundment. Along the shoreline is approximately 0.8 acre of deciduous and mixed forest, including red maple, red oak, white ash, sugar maple, American beech, paper birch, white pine, hemlock, and balsam fir.

The remaining 1.2 acres of land within the Project boundary is used for commercial and residential purposes and located primarily along the shoreline of the impoundment. The Project shoreline is currently maintained by vegetation removal techniques such as mowing and string trimming of the grass areas, access road, and parking lot.

The FERC EA states that during environmental analysis, no agencies filed recommendations or comments for botanical or wildlife resources with regard to the Project's impoundment or downstream reach. Invasive species are not currently a known problem, and no significant ground-disturbing activities are proposed in the current license term.

The 2019 FERC license does not contain any specific license articles pertaining to the development of a Shoreline Management Plan or similar management plan for the facility. Additionally, no lands in the immediate vicinity of the Project are included in the national trails system, nor are there any designated wilderness lands. The Cobbosseecontee Stream is not on the list of Wild and Scenic Rivers.



The City of Gardiner²⁸ is currently pursuing a Cobbossee Corridor Master Plan that includes plans to revitalize the Cobbosseecontee Stream shoreline by developing new trails, open space recreation opportunities, housing, and new commercial developments. Although the plan was approved in 2005, no implementation schedule has been issued. Part of this master plan includes plans to extend the city park located near the Project, such that it would encompass land from Pleasant Pond to downtown Gardiner and connect to the Kennebec River Rail. A City Comprehensive Plan was issued in 2014²⁹ that further describes planning efforts.

The Project impoundment is a narrow and shallow pond less than 24 feet deep with a total volume of approximately 108 ACFT at full pond. The shoreline immediately surrounding the impoundment is moderately forested to the north, with some commercial and developed areas to the south. The slopes along the impoundment shoreline are steep with mixed vegetation.

As stated in the EA, the Project is operated in a ROR mode, The ROR operation:

- Helps minimize fluctuations in the impoundment;
- Reduces disruptions to any nearshore spawning habitat and passage for migratory fish in the reach downstream of the Project; and
- Maintains relatively stable impoundment levels, which continue to benefit shoreline habitat, as well as fish and other aquatic organisms that rely on near shore habitat for spawning, foraging, and cover.

The Project's bypass reach is comprised of a 345-foot-long reach of riverine habitat between the dam and the powerhouse (see Figure 8 above). It is a moderate-to-low gradient channel that runs over bedrock and has boulders, cobblestone, and other rock materials along both banks. Aquatic habitat in the bypass reach is limited. The shoreline surrounding the bypass reach consists of a mowed/maintained area surrounding the powerhouse and access area on the eastern side of the river and natural woodlands on the western side of the river.

Comments Received

The December 16, 2019 letter from Upstream stated that riparian lands are by definition ecologically valuable, noted the presence of a variety of wildlife, and described an event in which 97 species of migratory birds were observed in 2019. The January 13, 2020 email from Jeff Wells also mentioned important riparian wildlife habitats without specifying what those are.

2022 Update:

No changes were identified.

This review found no license deviations nor any new or outstanding issues and no apparent lands of ecological significance, although the area is reportedly important for birds and other wildlife. Based on the small Project footprint, ROR operations and stable impoundment levels, the Project satisfies the shoreline and watershed protection criterion.

²⁸ <https://www.gardinermaine.com/economic-development/pages/cobbossee-corridor-master-plan>

²⁹ https://www.maine.gov/dacf/municipalplanning/comp_plans/Gardiner%202014.pdf



F. LIHI Criterion-Threatened and Endangered Species

The threatened and endangered species protection criterion is designed to ensure that the facility does not negatively impact state or federally-listed threatened or endangered species.

The Applicant states the LIHI threatened and endangered species criterion is satisfied in all ZOE by meeting alternative standard F-2, finding of no negative effects.

In the EA, the USFWS's Information for Planning and Consultation (IPaC) database³⁰ was referenced to determine federally listed species that could occur in the Project area. Accordingly, the federally endangered Atlantic salmon and threatened Northern long eared bat (NLEB) could occur in the Project vicinity. No critical habitat for either species is present.

Historically, Atlantic salmon migrated up Cobbosseecontee Stream. Today, no known Atlantic salmon spawning or rearing habitat occurs within the Project area, nor is there any known Atlantic salmon migration upstream or downstream of the Project. The downstream Gardiner Paperboard Dam blocks movements of Atlantic salmon further upstream.

In October 2018, NMFS³¹ filed their modified fishway prescriptions³² that require KEI to ensure that Project operations are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

Federal agencies must consult with NMFS on all actions that may adversely affect Essential Fish Habitat (EFH)³³. EFH for Atlantic salmon has been defined as, "*all waters currently or historically accessible to Atlantic salmon within the streams, rivers, lakes, ponds, wetlands, and other water bodies of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.*" The Project area constitutes EFH for Atlantic salmon because it is located in Maine and on Cobbosseecontee Stream, which was historically accessible to Atlantic salmon. FERC concluded that operating the Project in accordance with license article 402 would not adversely affect Atlantic salmon EFH. Overall, the EA suggests that the modifications KEI would make to downstream fish passage facilities will ultimately result in a net benefit to water quality in the bypass reach and would enhance the EFH for Atlantic salmon.

The northern long-eared bat (NLEB) is a federally threatened species and a species of special concern in Maine. These bats are flexible in selecting roost sites, choosing roost trees that provide cavities and crevices. Winter hibernation typically occurs in caves and areas around them and can be used for fall swarming and spring staging. No critical habitat has been designated for the NLEB. The Project is located within the white-nose syndrome buffer zone for the NLEB. Although there are no known occurrences of NLEB at the Project, the area around the Project is largely forested and could supply suitable habitat for NLEB summer roosting and foraging activities. The USFWS has issued the 4(d) ruling³⁴ for Northern long eared bat. KEI states it will abide by this document's rules in the event that tree cutting is necessary.

³⁰ IPaC - <https://ecos.fws.gov/ipac/>

³¹ NMFS has statutory authority under the Magnuson Stevens Fishery Conservation and Management Act, the Endangered Species Act of 1973, the Atlantic Coastal Fisheries Cooperative Management Act, the Fish and Wildlife Coordination Act, and the National Environmental Policy Act.

³² <https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=15066106>

³³ Essential fish habitat refers to those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity and covers a species' full life cycle.

³⁴ <https://www.fws.gov/midwest/endangered/mammals/nleeb/pdf/FRnleebFinal4dRule14Jan2016.pdf>



American eel is not a listed species under the Endangered Species Act. However, NMFS did provide prescriptions for upstream and downstream passage of the species at the Project. KEI was to construct a permanent upstream eel passage system and a new permanent downstream anadromous fish and eel passage system that is not anticipated to negatively affect American eels in the Project area.

In a letter dated September 17, 2019 (included in the application), the MDIFW stated that the tidewater mucket is a State threatened freshwater mussel species documented in the general vicinity of the Project in Cobbosseecontee Stream. Additionally, while a comprehensive statewide inventory for bats has not been completed, it is likely that several of species occur within the Project area during migration and/or the breeding season, including:

- Little brown bat (State Endangered)
- Northern long-eared bat (State Endangered)
- Eastern small-footed bat (State Threatened)
- Big brown bat (Special Concern)
- Red bat (Special Concern)
- Hoary bat (Special Concern)
- Silver-haired bat (Special Concern)
- Tri-colored bat (Special Concern)

MDIFW concluded that it is not known what effects, if any, the operations of the Project may have on any of the above species. However, given ROR operations it is unlikely that the Project would impact mussels, and like Northern long-eared bat, it is unlikely that the Project would impact other bat species which have similar habitat requirements.

2022 Update:

The only change identified is USFWS' March 23, 2022 proposal to re-list Northern long-eared bat as endangered rather than threatened.³⁵ The USFWS IPaC online tool was accessed May 5, 2022 and now includes monarch butterfly as a new candidate species potentially found at the Project.

This review found no license deviations nor any issues pertaining to threatened and endangered species. Based on the information provided the Project operations are unlikely to adversely affect listed species, and thus satisfies the threatened and endangered species protection criterion.

G. LIHI Criterion-Cultural Resource Protection

The cultural and historic resource protection criterion is designed to ensure that the facility does not unnecessarily impact cultural and historic resources associated with the facility's lands and waters, including resources important to local indigenous populations.

The application states the LIHI cultural and historic resources criterion in all ZOE is satisfied by meeting alternative standard G-1, not applicable / de minimis effect.

KEI conducted a Phase I History/Architecture Survey to evaluate the eligibility of aboveground resources

³⁵ <https://www.govinfo.gov/link/fr/87/16442>



within the Project's area of potential effect (APE) for inclusion on the National Register of Historic Places. The survey determined that none of the Project structures within the APE are eligible and, in a January 22, 2016, email, the Maine State Historic Preservation Officer (SHPO) concurred with this conclusion. In a February 21, 2017 letter to KEI, the SHPO requested that a reconnaissance level archeological survey be performed concurrent with the next scheduled impoundment drawdown. In an April 13, 2017 letter to the SHPO, KEI provided photos from the 2004 drawdown of the impoundment, as drawdowns for the Project occur infrequently and are for brief durations.

The only potential historic property within the APE is the Gardiner Mill remains that lay beneath the impoundment and are only exposed for a few days during dewatering events. KEI has not yet conducted a drawdown or performed the requested SHPO reconnaissance survey, therefore currently little is known about the remains integrity and eligibility to be included in the National Register. License article 408 requires KEI to conduct a National Register Eligibility Survey on the Gardiner Mill during the first scheduled impoundment drawdown that exposes the remains of the Mill. If the Gardiner Mill remains are deemed eligible for listing on the National Register, the SHPO requires consultation prior to future drawdowns in order to set up protective measures to help protect any historic property that could be exposed.

It is possible that unknown historic resources could be disturbed due to general maintenance activities such as landscaping and ground disturbing yard maintenance. To ensure that these potential historical resources are not adversely affected, license articles 409 and 410 require that KEI consult with the SHPO prior to implementing any Project modifications or in the event that KEI discovers any previously unidentified cultural resources during construction or maintenance activities.

Additionally, there are no federally recognized tribal lands within the Project boundary and no federal Indian reservations in the vicinity of the Project. KEI mailed a copy of a Pre-Application Document (PAD) questionnaire to the five federally recognized tribes of the state of Maine. The Penobscot Indian Nation responded on December 2, 2013, expressing interest in potential cultural resources within the Project. KEI hosted an agency consultation meeting on December 17, 2013 in which none of the five recognized tribes were in attendance.

2022 Update:

No changes were identified. The impoundment has not been drawn down to accommodate the required reconnaissance and eligibility surveys.

KEI is in compliance with all license requirements regarding cultural resource protection. This review found no license deviations nor any issues pertaining to the KEI's cultural and historical resources protection activities. Based on the information provided, the Project satisfies the cultural and historic resources protection criterion; however, a condition is recommended to confirm that consultation and related activities are completed if/when the impoundment is drawn down in the future.

H. LIHI Criterion-Recreation

The goal of this criterion is to ensure that recreation activities on lands and waters controlled by the facility are accommodated and that the facility provides recreational access to its associated land and waters without fee or charge.



The Applicant states the LIHI recreation criterion in all ZOE's is satisfied by meeting alternative standard H-1, not applicable / de minimis effect. However, informal recreational access to the tailrace and downstream reach is available over Project lands and therefore all ZOE's better satisfy the alternative standard H-3, assured accessibility.

FERC eliminated the Form No. 80 Recreation Use report, effective in March 2019 but the Project was previously exempted from filing FERC Form 80 data on April 4, 1996 because the information available indicated the Project had no potential for recreational use.

The Project is not subject to any enforceable recreation management plans and does not contain any FERC approved recreational facilities, but KEI permits public use of the Project lands and waters for recreation. Access is generally restricted due to industrial/commercial use on the south bank and steep wooded terrain on the north bank, which pose a potential safety hazard. The impoundment is open to the public and can be accessed through the city park. An informal canoe portage route is available from the impoundment to a hand-carry boat launch downstream of the Gardiner Paperboard Dam (See Figure 10).

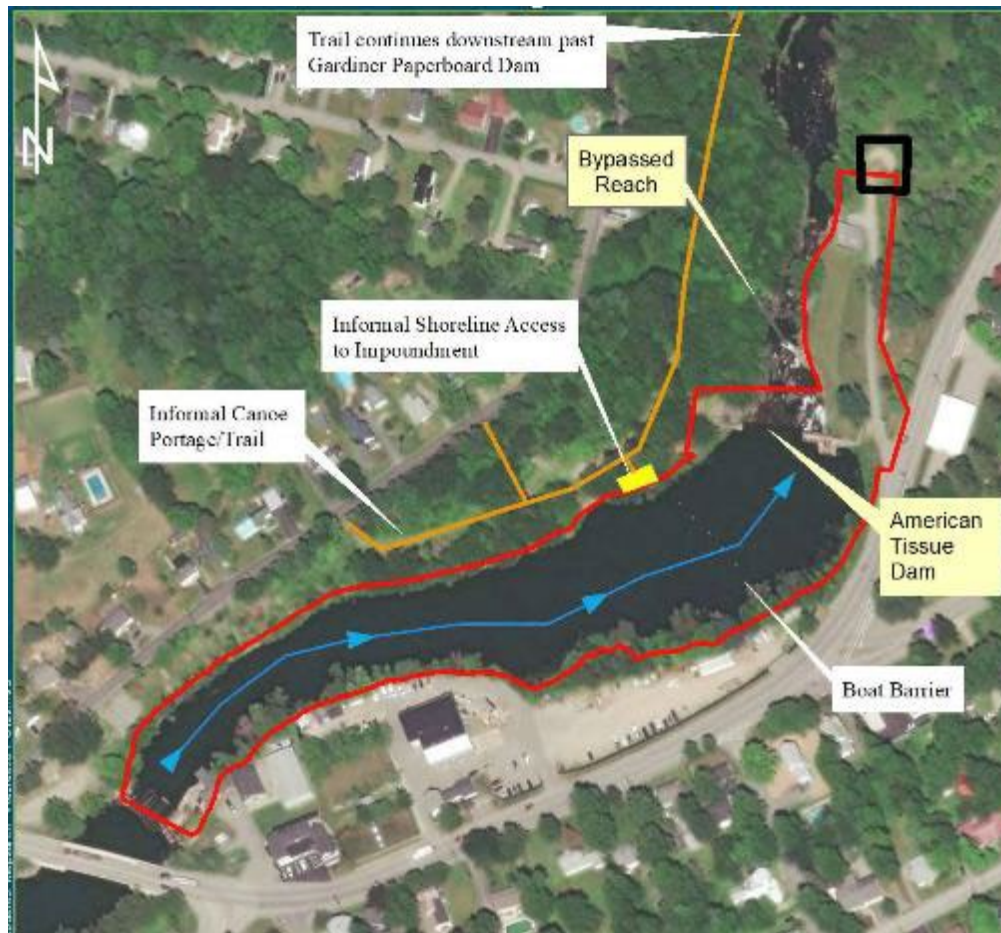


Figure 50 - Recreation Sites

The city park includes picnic tables and a five-car parking lot. Informal recreational access to the north shore of the impoundment is supplied by a dirt ramp adjacent to the city park. The ramp is located just



upstream of the seasonal boat barrier in the impoundment and is connected to a trail owned and maintained by the City of Gardiner. The trail runs along the north bank of the Project and parallels the Cobbosseecontee Stream. The trail provides an informal canoe portage route between the Project impoundment and a canoe put in area near the downstream Gardiner Board Paper Dam.

Comments Received

The December 16, 2019 letter from Upstream noted the popularity of the Harrison Avenue Nature Trail, the city park, and other recreational opportunities in the Project vicinity. The January 13, 2020 email from Jeff Wells also noted the recreational trail. These facilities are not part of the Project.

This review found no issues or concerns related to recreation and that the Project provides access without charge where safe to do so. Therefore, the Project satisfies the recreational resources criterion.

9. RECOMMENDATION

In the LIHI application, KEI was cognizant of on-going implementation of measures required by the new license that would need to be completed over the first few years. At the time of the January 2020 review, LIHI recommended that the application be put on hold until fish passage measures were completed with the reviewer recommendation that the Project be certified for a five-year term (the base certification term at that time), with conditions related to the ongoing fish passage work.

2022 Update:

KEI has completed installation of permanent upstream eel passage and downstream passage for both anadromous species and eels. Effectiveness monitoring is ongoing and annual reporting will begin in 2023. Therefore, the pre-certification requirements have been met and the Project can now be certified for the base LIHI term of ten (10) years, with the following conditions:

- **Condition 1:** In annual compliance submittals to LIHI, the facility Owner shall provide copies of all annual upstream and downstream fish passage reports and effectiveness monitoring results. A summary of any agency comments and/or recommendations for fish passage improvements along with a plan and schedule to implement such changes shall also be provided.
- **Condition 2:** Should upstream anadromous fish passage be required during the LIHI Certification term, the facility Owner shall provide LIHI notice within 60 days of initiation of agency consultation and shall summarize progress toward completion of passage facilities in annual compliance submittals to LIHI.
- **Condition 3:** In annual compliance submittals to LIHI, the facility Owner shall indicate whether any impoundment drawdowns occurred that would trigger SHPO consultation and shall confirm that appropriate consultation and reconnaissance and eligibility surveys were completed.

APPENDIX A

DOCUMENTS



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



GERALD D. REID
COMMISSIONER

November 18, 2019

RE: LOW IMPACT HYDROPOWER INSTITUTE APPLICATION FOR CERTIFICATION FOR THE AMERICAN TISSUE HYDROELECTRIC PROJECT (FERC No. 2809)

To whom it may concern:

The American Tissue Hydroelectric Project (ATHP, Project) is owned and operated by KEI (Maine) POWER MANAGEMENT (III) LLC (KEI, the applicant) and located on Cobbosseecontee Stream in the town of Gardiner, in Kennebec County, Maine. The Project is located approximately 1 river mile upstream of the confluence of Cobbosseecontee Stream and the Kennebec River. There are several dams on Cobbosseecontee Stream and the Project is the only dam that is used for hydroelectric generation. The ATHP operates as a run of river facility with a minimum flow of 52-cfs in the tailrace and 10-cfs or inflow to the bypassed reach. The Project consists of a stone masonry dam with spillway, east and west abutments, an underground steel penstock, a powerhouse with one generator unit, and a bypass reach that is approximately 345 feet long.

The Department of Environmental Protection (MDEP, the Department) has reviewed its most recent water quality data for surface waters at the ATHP. The American Tissue dam creates an impoundment with a surface area of 5.5 acres at full pond which extends upstream 1,160 feet to the toe of the New Mills Dam. The New Mills Dam is the upstream water control dam which impounds Pleasant Pond. The full impoundment surface elevation is 123.3 feet msl including 1-foot flashboards. The impoundment is relatively shallow and narrow, with a riverine character and a maximum depth of 24 feet. The Cobbosseecontee Stream surface waters associated with the impoundment and downstream of the project dam are Class B waters, the 3rd highest classification. The Department has no evidence to suggest that the continued operation of the Project will negatively impact the designated uses, numeric or narrative criteria of its classification standards (Class B).

The Department's latest Integrated Water Quality and Assessment Reports (305b/303d Reports) (2016) indicate that the waters associated with the ATHP are categorized as 2: Rivers and Streams Attaining Some Designated Uses, 4-A: Rivers and Streams with Impaired Use with an advisory for total phosphorus, and 5-A: Rivers and Stream Impaired by Pollutants with an advisory for benthic macroinvertebrates and periphyton. The 303d report shows that a Watershed Management Plan was established in 2008 and further monitoring in 2010 showed Pleasant Pond's nutrient and trophic state indicators remained high. The Department has determined that impairment of water quality in the stream is likely related to the upstream Pleasant Pond impoundment and is not a result of the operations of the ATHP. In addition to not attaining the designated use of 'habitat for fish and other aquatic life', Cobbosseecontee Stream is not attaining the designated use of fishing, since there is a statewide fish consumption advisory


for all freshwaters due to mercury. The Department has determined that the non-attainment status due to the fish consumption advisory is not a result of the operation of the AHP.

On November 29, 2018, MDEP issued its decision and order (#L-16416-33-E-N) approving KEI's water quality certification (WQC) application. The federal licensing process is integrated with MDEP's WQC process for review, pursuant to Section 401 of the federal Clean Water Act (CWA) and related state laws and rules if applicable. As discussed in the MDEP WQC issued in 2018, the Maine Department of Marine Resources (MDMR) reported and the Department found that the Cobbosseecontee Stream historically supported runs of diadromous fish including striped bass, blueback herring and alewife (known collectively as river herring), rainbow smelt, American shad, Atlantic Salmon and American eel. Migratory access to Cobbosseecontee Stream is restricted by the downstream Gardiner Paperboard (GPB) dam, which has not operated since 2000. Five native migratory fish species (blueback herring, alewife, striped bass, American shad and rainbow smelt) are reported to utilize habitat downstream of the GPB dam. Currently, American eel and sea-run alewives occur within the Project area or upstream of the AHP; alewives are stocked into the upstream Pleasant Pond and Horseshoe Pond by MDMR.

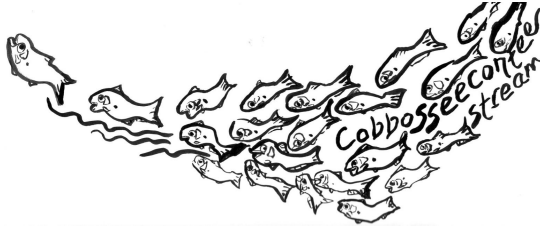
During the WQC analysis, the Department found that KEI has maintained and operated downstream fish passage facilities for alewives and American eel at the Project since 2003. Additionally, Condition 3 outlines Upstream Fish Passage requirements to be initiated at the AHP by the second migration season (2020) for American eel. Fish passage for other anadromous species must be initiated by the second migration season after upstream passage becomes operational at the downstream GPB dam. By following these Conditions outlined in the 2018 WQC, the Department has determined that KEI, through consultation with resource agencies, has made adequate provisions to accommodate fish passage for anadromous species. Additional results of WQC studies showed that the AHP impoundment, the Cobbosseecontee Stream bypass, as well as the tailrace attain most designated uses and water quality standards for Class B waters. The Department has determined that standards that are not attained are not a result of Project activity. Therefore, the Department supports the Low Impact Hydropower Certification of the AHP (FERC No. 2809)

Please feel free to contact me at (207) 446-1619 or via email at Christopher.Sferra@maine.gov if you have any questions regarding this project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Chris O. Sferra".

Christopher O. Sferra, Project Manager
Bureau of Land Resources
Maine Department of Environmental Protection



December 16, 2019

Re: Application for LIHI Certification at the
American Tissue Hydroelectric Project (FERC # P-2808)

To Whom it may concern:

Upstream, a 501c3 organization based in Gardiner, Maine, submits the following comments on the application of Kruger (Maine) (“the Applicant”) for LIHI certification for American Tissue Hydroelectric Project (“the Project”) in Gardiner, Maine.

Two inaccuracies in the application need to be corrected:

* The City of Gardiner, and the Towns of Litchfield and Richmond jointly own and manage the dam immediately upstream of the Project; the Town of West Gardiner was not a party to the purchase and has no role in managing the facility.

* Maine’s DEP 401 Certification and FERC’s 2019 license to Applicant specifies that Project will operate downstream diadromous fish passage from June 1 to November 30, rather than the November 15 date provided.

Biological Resources:

More significant, however, is the understatement of biological resources (Chapter 3-27) along Cobbosseecontee (“Cobbossee”) Stream in the immediate area of the Project, i.e., from Pleasant Pond downstream to the Cobbossee’s junction with the Kennebec River. This 1.4-mile run includes New Mills Dam, the Project, and Gardiner Paperboard Dam.

Riparian land is by definition ecologically valuable. To conserve the biological and recreational resources in the Project area, in 1997 the City of Gardiner conveyed a conservation easement to the Kennebec Land Trust, thus protecting – in perpetuity – these valuable assets from encroachment.

Anadromous Fish: Although FERC’s Environmental Assessment apparently reports that no agencies filed recommendations or comments re: botanical or wildlife resources, the license that FERC issued requires passage for important Maine anadromous fish species: Applicant must provide upstream and downstream passage for American eel and downstream passage for river herring.

River herring are not on federal or state Endangered or Threatened list, but agencies at both

levels are keenly aware that Cobbossee watershed presents an opportunity to re-establish a run that was shut down with the construction of the first dam on the stream more than 200 years ago. The watershed includes 28 lakes and ponds with more than 7,600 acres of warm, fresh water habitat that once sustained a significant run of both alewife and blueback herring. Maine Department of Marine Resources (MeDMR) estimates that the area can support an upstream run of as many as 5 million fish; FERC's renewal license includes a prescription that when river herring arrive at the base of the Project, Applicant must provide timely passage for all of these fish.

This prescription is meaningful. Efforts at the local, state and federal level to re-establish river herring in the Cobbossee watershed are bearing fruit. Wright-Pierce, a multi-disciplinary environmental engineering firm in Topsham, has provided Upstream with a concept design for fish passage on the western shore of the stream at Gardiner Paperboard. Upstream has contracted with Acadia Civil Works, Leeds, to provide a concept plan for passage at New Mills. The Maine Department of Marine Resources has commissioned fish passage engineering studies at the Paperboard site as well.

In addition, two research programs are underway in the project area:

- * MeDMR has for many years and continues to monitor American eel numbers and movement in the Cobbossee and Kennebec watersheds.

- * A citizen science project collects data on alewives that will be used at both the state (MeDMR) and federal (Atlantic States Marine Fisheries Commission) levels. In cooperation with Upstream, Gardiner Area High School students are collecting data on river herring during the spring migration, using a site next to Gardiner Paperboard Dam. Under the supervision of their teacher, students weigh, measure, sex each fish, and take scale samples in compliance with MeDMR's protocol. The project is part of the science curriculum at the high school. The teacher is raising funds to construct a building that will be used as an on-site classroom.

Birds and Mammals: In spring 2019, bird-watchers from across the state arrived at the Harrison Avenue Trail, directly across the stream from the Project, to view an extraordinary concentration of migrating birds. Birders reported 97 species in May and 64 species in June. The Applicant does not mention this exceptional event.

The Project is located within city limits, less than a mile from downtown businesses. Despite the urban setting, the project area is replete with mammals. Muskrat, fisher, mink, raccoon, otter, snowshoe hare, deer, beaver, woodchuck and red fox use the river corridor all year long. This resource is not significant on a national, state, or regional scale, but it is of immense value to the City of Gardiner.

Recreational Resources

Applicant miss-states the recreational resources along Cobbossee Stream, reporting that no action has been taken on city land across from the Project. To the contrary, the Harrison Avenue Nature Trail, which runs from immediately below New Mills Dam to Gardiner Paperboard Dam, is a popular, year-round recreational site.

A kiosk introduces new users to the area; posts with QR codes provide online information about historical use of the stream; flora, birds and mammals; and the once plentiful native sea-run fisheries of the stream; a separate hard-copy brochure provides this information to individuals without digital access; Rotary International's Gardiner chapter donated parking and trail signage as well as picnic tables; an area resident mows regularly during the summer and early fall; and the City of Gardiner (which owns the property) planted trees and maintains overall management of the site.

Anglers fish at the base of Gardiner Paperboard Dam. Picnickers take advantage of the tables and river view adjacent to the Project lands. People and pets get exercise. Others enjoy birds, animal tracks, and flowers from spring ephemerals through fall asters. History buffs figure out the sites of dams that are no longer in place. In short, the park itself has become a vital part of the city's parks and recreation program.

We appreciate the opportunity to share these comments and thank you for your attention to them. Should you desire further information on any point, please feel free to contact us.

Sincerely,

Tina Wood

Tina Wood
President

Upstream

Dedicated to restoring sea-run fish passage and ecological health to Cobbossee Stream.

"Do one small thing for fish passage a day."

PO Box 352, Gardiner, Maine 04345 207-582-0213

<https://sites.google.com/view/upstreamcobbossee/home>

<https://www.facebook.com/alewivesupstreamcobbosseecontee/>



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES
21 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0021

PATRICK C. KELIHER
COMMISSIONER

January 6, 2020

RE: American Tissue Project (FERC No. 2809)

To whom it may concern:

The new license for the American Tissue Project (FERC No. 2809), located on Cobbosseecontee Stream in Kennebec County, Maine, was issued by the Federal Energy Regulatory Commission on April 30, 2019.

In part, the license requires the installation of the following fish passage facilities by the second migratory season after license issuance: upstream eel passage by June 1, 2021, downstream eel passage by May 1, 2021, and downstream diadromous fish passage by August 15, 2021. The dates of the migration periods appear on page 11 of the License.

The American Tissue Project currently is not in compliance with LIHI Standard C-2 and D-2, and will not be until the upstream and downstream fish passages facilities listed above are operational, presumably in 2021.

Please contact me if you have any questions.

Gail Wippelhauser, Ph. D.
Marine Resources Scientist
Maine Department of Marine Resources
#172 State House Station
Augusta, ME 04333

Phone: 207-624-6349
email: gail.wippelhauser@maine.gov



Certification Comments <comments@lowimpacthydro.org>

American Tissue Project Comments

1 message

Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>

Tue, Jan 7, 2020 at 9:35 AM

To: comments@lowimpacthydro.org

To whom it may concern:

The new license for the American Tissue Project (FERC No. 2809), located on Cobbosseecontee Stream in Kennebec County, Maine, was issued by the Federal Energy Regulatory Commission on April 30, 2019.

In part, the license requires the installation of the following fish passage facilities by the second migratory season after license issuance: upstream eel passage by June 1, 2021, downstream eel passage by May 1, 2021, and downstream diadromous fish passage by August 15, 2021. The dates of the migration periods appear on page 11 of the License.

The American Tissue Project currently is not in compliance with LIHI Standard C-2 and D-2, and will not be until the upstream and downstream fish passage facilities listed above are operational, presumably in 2021. Therefore, the U.S. Fish and Wildlife Service does not support LIHI certification until the facilities are completed and operational.

Please contact me if you have any questions.

--

Antonio

Antonio Bentivoglio
US Fish and Wildlife Service
Maine Field Office
Collocated with the Gulf of Maine Coastal Program
[4 Fundy Road #R](#)
[Falmouth, Maine 04105](#)
Telephone: (207) 781-8364 x18
Fax: (207) 469-6725

Gary

From: Wippelhauser, Gail <Gail.Wippelhauser@maine.gov>
Sent: Wednesday, January 8, 2020 12:29 PM
To: Francgm@verizon.net
Cc: Bentivoglio, Antonio; William McDavitt
Subject: American Tissue passage

Importance: High

Franc:

I am writing to clarify our position regarding the current status of fish passage at the American Tissue Project.

Photo 6-6 – this existing downstream fish passage does not conform agency standards – downstream migrants hit the spillway about halfway down before going into the undersized drop box. In addition the notch is undersized.

Photo 6-9 – this is labeled as downstream eel passage, but it is not. I suspect it was meant to be labeled as upstream eel passage. However, MDMR has never consulted on, seen or approved this structure.

Gail Wippelhauser, Ph. D.
Marine Resources Scientist
Maine Department of Marine Resources
#172 State House Station
Augusta, ME 04333

Phone: 207-624-6349
email: gail.wippelhauser@maine.gov

Gary

From: Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>
Sent: Wednesday, January 8, 2020 12:48 PM
To: Wippelhauser, Gail
Cc: Francgm@verizon.net; William McDavitt
Subject: Re: [EXTERNAL] American Tissue passage

Franc,

I discussed this with Gail and agree with her points. Re: Photo 6-9, Gail is correct, this is not a downstream eelway but an upstream eelway. I have been to the site many times over the last few years and have never seen it. Let me know if you have any further questions.

On Wed, Jan 8, 2020 at 12:28 PM Wippelhauser, Gail <Gail.Wippelhauser@maine.gov> wrote:

Franc:

I am writing to clarify our position regarding the current status of fish passage at the American Tissue Project.

Photo 6-6 – this existing downstream fish passage does not conform agency standards – downstream migrants hit the spillway about halfway down before going into the undersized drop box. In addition the notch is undersized.

Photo 6-9 – this is labeled as downstream eel passage, but it is not. I suspect it was meant to be labeled as upstream eel passage. However, MDMR has never consulted on, seen or approved this structure.

Gail Wippelhauser, Ph. D.
Marine Resources Scientist
Maine Department of Marine Resources
#172 State House Station
Augusta, ME 04333

Phone: 207-624-6349

email: gail.wippelhauser@maine.gov

--
Antonio

Antonio Bentivoglio
US Fish and Wildlife Service
Maine Field Office
Collocated with the Gulf of Maine Coastal Program
4 Fundy Road #R
Falmouth, Maine 04105
Telephone: (207) 781-8364 x18
Fax: (207) 469-6725



Certification Comments <comments@lowimpacthydro.org>

American Tissue Project Comments

1 message

Landis Hudson <landis@mainerivers.org>
To: comments@lowimpacthydro.org
Cc: Chuck Verrill <Charlesverrill@gmail.com>

Wed, Jan 8, 2020 at 11:41 AM

We understand that the Low Impact Hydropower Institute ("LIHI") has received an application from KEI (Maine) Power Management (III) LLC for Low Impact Certification of the American Tissue Hydroelectric Project located on Cobbosseecontee Stream in Maine (FERC No. 2809) and is seeking comment on the application. In response, Maine Rivers comments that the KEI application must be denied since it does not demonstrate eligibility for certification under the Institute's mandatory criteria.

Maine Rivers is a nonprofit organization with a mission to protect, restore and enhance the ecological health of Maine's river systems. We are led by Directors with broad and deep knowledge of the wide range of issues which impact rivers and watersheds in Maine, including water policy and science.

We are familiar with the American Tissue Hydroelectric Project and participated in the recent FERC relicensing which demonstrated both the potential for fisheries in the watershed and the fact that KEI's project is one of the main impediments to the realization of that potential.

As noted by the Maine Department of Marine Resources in the Draft Fishery Management Plan, the "Cobbosseecontee Stream drainage historically supported runs of at least seven species of native diadromous fishes, which were reduced or extirpated by the construction of dams without fishways." (Draft Fishery Management Plan for Cobbosseecontee Stream, Kleinschmidt Submission to LIHI, at 3-15). The American Tissue Hydroelectric Project is one of those dams. Without those dams, the Maine Department of Marine Resources estimates that the watershed's productive capacity for one diadromous species, the alewife (*Alosa pseudoharengus*), could exceed three million returning adult fishes, more than enough to support a commercial fishery.

We acknowledge that alewives are transported above the American Tissue dam and that the FERC license prescribes downstream passage conditions for the outmigration of alewives.

However, this stopgap falls far short of the potential productive capacity of the watershed as estimated by the Maine Department of Marine Resources. That capacity will continue to be a distant dream because American Tissue has no obligation to install upstream passage for the full suite of diadromous fishes that once frequented this watershed until the downstream Gardiner Paperboard Dam permits upstream fish passage.

As a consequence, the lack of upstream fish passage means that the KEI project **does not meet one of the eight criteria that must be met for a facility to qualify as low impact.**

According to the certification criteria in the LIHI handbook (<https://lowimpacthydro.org/how-to-apply/>) if any of the criteria are not satisfied, the facility cannot be certified as low impact. One of those criteria is upstream fish passage. Since the KEI project does not meet this criteria, **it is not qualified for certification.** In fact, certification would be a mockery of the Low Impact certification and render it worthless. In actuality, the KEI project has a high impact because it lacks fish passage and that reality is not obfuscated or excused by the excuse that "another dam is at fault." It is the dam licensed to KEI that lacks the facilities for fish passage that are mandatory criteria for LIHI qualification and for that reason certification must be denied.

We are aware that the LIHI Handbook, Standard C-1, page 8, provides an exception where the “facility is not the cause of extirpation of species that were historically present...” However, that exception cannot be relied on here. That is because the American Tissue Dam is one of five that were responsible for the extirpation of historical runs of seven native diadromous species. This finding, cited above, by Maine DMR is not disputed or rationalized anywhere in the Kleinschmidt application for certification.

At the end of the day, these facts are undisputed: the American Tissue Dam does not have upstream fish passage (except for eels); the population of alewives in the watershed is significantly diminished from historic levels; and there are no immediate prospects for remedial action by American Tissue. And, since the construction of the American Tissue Dam was one of the reasons for the extirpation of sea-run native fisheries (as found by Maine DMR), there is no rationale for winking at the reality that this dam is definitely not “low impact.”

Maine Rivers stands firmly for the proposition that “low impact” should be determined on an objective assessment of the actual impact of a dam as it stands today, regardless of history or corporate maneuvers, and regardless of the circumstances of other dams in the neighborhood. If a dam does not have fish passage it is high impact period and should not receive the blessing and financial benefits of LIHI certification.

Respectfully Submitted,

MAINE RIVERS

Landis Hudson, Executive Director

Chuck Verrill, President

Landis Hudson

Executive Director, Maine Rivers

www.mainerivers.org

Phone: 207-847-9277

Our mission is to protect, restore and enhance the ecological health of Maine's river systems



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

January 10, 2020

Shannon Ames
Executive Director
Low Impact Hydropower Institute
329 Massachusetts Avenue, Suite 6
Lexington, MA 02420

RE: Comments on Application for Low Impact Hydro Certification for the American Tissue Project (FERC No. 2809)

Dear Ms. Ames:

On November 5, 2019, KEI (Maine) Power Management (III) LLC (hereafter KEI) submitted a Low-Impact Hydropower Power Institute Certification Application. Related to this application is the Federal Energy Regulatory Commission's April 30, 2019 Order Issuing Subsequent License for the American Tissue Project (P-2809) ([Accession # 20190430-3098](#)). This license requires implementation of mitigation actions that includes fish passage protection measures and monitoring. We offer the following comments on the application.

Criterion A: Ecological Flow Standards

The goal of the ecological flow regime standard is to support habitat suitable for healthy fish and wildlife resources. KEI cites license order Article 402 and the corresponding Maine DEP Water Quality Certification (WQC) requirement for run-of river-operations. We support run-of-river operations, and indeed, it was part of our Section 10(j) recommendation. We view run-of-river operations as an important aspect of maintaining healthy riverine habitat downstream of a hydroelectric project.

Additionally, we recommended that KEI also provide a minimum flow in the bypass reach. This recommendation is consistent with the WQC requirement 2. Minimum flow requirements are an important aspect of ecological flows supporting habitat for our trust species. We recommend to LIHI that KEI address how they will operationally provide these flows to the bypass reach throughout the year.

Criterion C: Upstream Fish Passage

Upstream migrating juvenile American eel are present at the American Tissue Project. Currently, the proposed upstream eel ramp is neither constructed nor operational. We anticipate the structure to be operational by the late spring 2021. We recommend that any LIHI certificate issued for this project include a condition to ensure that KEI completes the construction of the required fish passage facilities in a timely manner.



Criterion D: Downstream Fish Passage

Adult American eel, stocked alewife and their offspring are all present upstream of this project. Safe, timely and effective downstream passage of these species is central to the restoration of these species. Currently, the proposed downstream passage protection measures for these species is not constructed or operational. We anticipate these structures to be operational by the summer of 2021. We recommend that any LIHI certificate issued for this project include a condition to ensure that KEI completes the construction of the required fish passage facilities in a timely manner.

Please contact Sean McDermott (978-281-9113) sean.mcdermott@noaa.gov if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Chris J. Boelke".

Christopher Boelke
New England Field Office Supervisor for
Habitat Conservation



Certification Comments <comments@lowimpacthydro.org>

American Tissue Project Comments

2 messages

Jeff Wells <jwboreal@gmail.com>

Mon, Jan 13, 2020 at 4:42 PM

To: comments@lowimpacthydro.org

To whom it may concern,

As a conservation biologist with decades of experience, I do not support LIHI certification for this Project along the Cobbosseecontee Stream in Gardiner, Maine. The current project does not allow any migratory fish passage despite the fact that several anadromous fish species occur in large numbers annually within the lower reaches of the stream. This causes severe impairment of the ecological potential of the stream and its adjoining upstream and downstream system components. The project application also does not acknowledge the important riparian wildlife habitats and recreational trail that adjoin the project location.

Sincerely,

Jeff Wells, Ph.D.
Gardiner, Maine

Certification Comments <comments@lowimpacthydro.org>

Tue, Jan 14, 2020 at 8:11 AM

To: Jeff Wells <jwboreal@gmail.com>

Hello Jeff, thank you for your comments. We will include them in our consideration of the LIHI application.

Best regards,
Maryalice Fischer

[Quoted text hidden]

--

Low Impact Hydropower Institute Staff

comments@lowimpacthydro.org | 781-538-6408

329 Massachusetts Avenue, Lexington MA 02420

Gary

From: Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>
Sent: Tuesday, December 10, 2019 4:22 PM
To: Andy Qua
Cc: Kayla Easler; Loon, Sherri; Sean McDermott - NOAA Federal; Gail Wippelhauser; Clark, Casey; Kathy Howatt; Sferra, Christopher; Brett Towler; William McDavitt; Anna Harris
Subject: Re: [EXTERNAL] RE: American Tissue Operation Compliance Monitoring and Maintenance Plan

Thanks Andy.

I read over what Bill McDavitt provided and agree but would like time to read the updated and provide comments. I look forward to reviewing in 2020.

On Tue, Dec 10, 2019 at 4:16 PM Andy Qua <Andy.Qua@kleinschmidtgroup.com> wrote:
Hi Antonio

Not too late but based on your feedback you can put your time to better use. We will get you all a draft extension request letter to FERC outlining the design schedule and "improved" O&M plan to contain the details you and Bill have called out. We would then reissue the O&M plan for your review a little further out in time. We will get that letter to you this week so you can concur or comment on the schedule so we can get it filed with FERC. We should have looked more closely at sequence of the O&M plan vs. designs. Apologies for that.

Best,
Andy

From: Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>
Sent: Tuesday, December 10, 2019 3:37 PM
To: Kayla Easler <Kayla.Easler@KleinschmidtGroup.com>
Cc: Sherri.Loon@kruger.com <Sherri.Loon@kruger.com>; Andy Qua <Andy.Qua@KleinschmidtGroup.com>; Sean McDermott - NOAA Federal <sean.mcdermott@noaa.gov>; Gail Wippelhauser <gail.wippelhauser@maine.gov>; Clark, Casey <casey.clark@maine.gov>; Kathy Howatt <kathy.howatt@maine.gov>; Sferra, Christopher <Christopher.Sferra@maine.gov>; Brett Towler <brett_towler@fws.gov>; William McDavitt <william.mcdavitt@noaa.gov>; Anna Harris <anna_harris@fws.gov>
Subject: Re: [EXTERNAL] RE: American Tissue Operation Compliance Monitoring and Maintenance Plan

Thanks Kayla. So are comments still due on the O&M Plan or is it too late?

On Fri, Dec 6, 2019 at 4:06 PM Kayla Easler <Kayla.Easler@kleinschmidtgroup.com> wrote:

Hi Antonio,

I think it would make sense to delay based on the project, but it is a FERC driven timeline. Further discussion with Sherri and Chuck is needed. They have been out on vacation with the holiday. We will get back to you when we catch up with them.

Kayla A. Easler

Regulatory Coordinator

Kleinschmidt

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From: Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>

Sent: Friday, December 06, 2019 3:50 PM

To: Kayla Easler <Kayla.Easler@KleinschmidtGroup.com>

Cc: Sherri Laon <sherri.laon@kruger.com>; Andy Qua <Andy.Qua@KleinschmidtGroup.com>; Sean McDermott - NOAA Federal <sean.mcdermott@noaa.gov>; Gail Wippelhauser <gail.wippelhauser@maine.gov>; Clark, Casey <casey.clark@maine.gov>; Kathy Howatt <kathy.howatt@maine.gov>; Sferra, Christopher <Christopher.Sferra@maine.gov>; Brett Towler <brett_towler@fws.gov>; William McDavitt <william.mcdavitt@noaa.gov>; Anna Harris <anna_harris@fws.gov>

Subject: Re: [EXTERNAL] RE: American Tissue Operation Compliance Monitoring and Maintenance Plan

Kayla and Sherri,

just checking on the request for comments on the American Tissue O&M Plan. As emailed previously, without specific information regarding the new upstream and downstream facilities it will not be useful for me to review the O&M Plan at present. Can you let us know when the new facilities will be incorporated into the O&M Plan for our review? Thanks.

Antonio

On Wed, Nov 27, 2019 at 11:52 AM Bentivoglio, Antonio <antonio_bentivoglio@fws.gov> wrote:

Kayla,

in light of the lack of specificity in the current American Tissue O&M plan I was wondering if we could delay review of this document until we have decided on what the specific upstream and downstream passage facilities are going to look like. Without these specifics our comments are going to be generic in nature and we will need to review all over again once the passage facility specifics are added.

Is this review timeframe being driven by FERC?

Let us know if we can get a delay.

Sherri,

do you have a timeframe for when the passage facility specifics can be included in the O&M Plan? I believe we are all expecting completion of the new facilities in 2020. Can you give us an update on where we are? Thanks.

Happy Thanksgiving to all.

Antonio

On Wed, Nov 27, 2019 at 11:37 AM William McDavitt - NOAA Affiliate <william.mcdavitt@noaa.gov> wrote:

Dear Kayla,

Thank you for the opportunity to comment on this plan.

Per the language in FERC's April 30, 2019 Order Issuing Subsequent License for the American Tissue project, we recommend the following change to this sentence in the paragraph under the *Fish Passage Operations* section:

Downstream eel passage measures include the installation of seasonal intake trash rack overlays and opening the deep gate furthest from the intake overnight between August 15 and November 15 of each year.

In light of the discussion that occurred during our meeting on October 31, 2019, in Gardiner, the draft O&M plan *Fish Passage Operations* section should be more explicit about each of the following:

- 1) Upstream eel passage and the proposed eel ramp
- 2) Downstream passage using the notch and proposed plunge pool
- 3) Downstream passage using the deep gate and associated structures on the downstream face of the dam

The plan should include a schedule that explains when construction for the above proposed structures will occur and what K&E currently anticipates as the operational dates for each of these structures. It is our understanding that each of these structures will be operational in 2020. As such, the plan should be more explicit about these structures and their timeframes for 2020. Going forward, for 2021 and beyond, the plan should reference the dates that are specified in FERC's April 30 Order. Assuming the final plan contains this clarifying language, we anticipate that we will not need to review future versions of this plan.

Sincerely,

-Bill

Bill McDavitt

Environmental Specialist

Integrated Statistics, Inc.

Under contract to National Marine Fisheries Service

Greater Atlantic Regional Fisheries Office

55 Great Republic Drive

Gloucester, MA 01930

978-675-2156

William.mcdavitt@noaa.gov

From: Kayla Easler <Kayla.Easler@KleinschmidtGroup.com>
Sent: Monday, November 25, 2019 9:02 AM
To: William McDavitt - NOAA Affiliate <william.mcdavitt@noaa.gov>; Sean McDermott <sean.mcdermott@noaa.gov>; antonio_bentivoglio@fws.gov; gail.wippelhaner@maine.gov; casey.clark@maine.gov; kathy.howatt@maine.gov; Sfera, Christopher <Christopher.Sfera@maine.gov>
Cc: Sherri Loon <Loon@kruger.com>; Andy Qua <Andy.Qua@KleinschmidtGroup.com>
Subject: RE: American Tissue Operation Compliance Monitoring and Maintenance Plan

Good morning,

I am sending this email as a reminder that we are asking for comments on the Operation Compliance Monitoring and Maintenance Plan for American Tissue EPRC No. 2809 by December 3, 2019.

Wishing you all a happy Thanksgiving!

Best,

Kayla A. Easler

Regulatory Coordinator

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From: Kayla Easler
Sent: Friday, November 01, 2019 3:19 PM
To: William McDavitt - NOAA Affiliate <william.mcdavitt@noaa.gov>; Sean McDermott <sean.mcdermott@noaa.gov>; antonio_bentivoglio@fws.gov; gail.wippelhauser@maine.gov; casey.clark@maine.gov; kathy.howatt@maine.gov; Sferra, Christopher <Christopher.Sferra@maine.gov>
Cc: Loon, Sherri <Sherri.Loon@kruger.com>; Andy Qua <Andy.Qua@KleinschmidtGroup.com>
Subject: American Tissue Operation Compliance Monitoring and Maintenance Plan

Good afternoon,

On behalf of KEL, please see the attached Operation Compliance Monitoring and Maintenance Plan for American Tissue EERC No. 2809, as required by license Article 403. We kindly request comments to be provided by December 2, 2019.

Best,

Kayla A. Easler
Regulatory Coordinator

Kleinschmidt

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Antonio