Brookfield
Renewable

November 30, 2020 **Medway Project (FERC No. 2666)**

Ms. Shannon Ames, Executive Director
Low Impact Hydropower Institute
329 Massachusetts Avenue, Suite 2
Lexington, MA 02420

Subject: Low Impact Hydropower Institute Application for the Medway Project (FERC No. 2666)

Dear Ms. Ames:

On behalf of Black Bear Hydro Partners, LLC (Black Bear), owner and licensee for the Medway Project (FERC No. 2666) located on the West Branch of the Penobscot River in Maine and an affiliate of Brookfield Renewable (Brookfield), please find attached a revised application requesting recertification of this facility (which is currently certified through November 30, 2020 per LIHI correspondence dated June 1, 2020). Black Bear submitted an initial certification application to the Low Impact Hydropower Institute (LIHI) on June 30, 2020. LIHI completed the initial Intake Review on August 5, 2020.

The current application includes the following required submittals as revised in response to the LIHI Intake Review:

- Introduction
- Project Description and LIHI Table B-1
- Zones of Effect descriptions and overview maps and images
- Matrix of Alternative Standards for each Zone of Effect identified evaluating the LIHI certification standards for each requisite criterion including water quality, fish passage and recreation
- Sworn Statement and Waiver Form
- Facility Contacts Form including pertinent NGOs, as appropriate
- List of hyperlinks and supplemental documentation for pertinent FERC and regulatory documents for the Project

Please call me at (207) 755-5606 or email me at Kelly.Maloney@brookfieldrenewable.com if you have any questions or need additional information regarding this submittal.

Sincerely,

Kelly Maloney
Manager, Compliance - Northeast

Cc: J. Cole, N. Stevens, S. Michaud, B. Brochu, A. Frechette, K. Bernier, E. DeLuca

Black Bear File: HSSE 4b/6/Penobscot

Black Bear Hydro Partners, LLC
1024 Central Street
Millinocket, ME 04462
www.brookfieldrenewable.com
Tel: 207.723.4341
Fax: 207.723.4597

LOW IMPACT HYDROPOWER INSTITUTE

CERTIFICATION APPLICATION FOR THE

MEDWAY PROJECT (FERC NO. 2666)

November2020

Brookfield

LOW IMPACT HYDROPOWER INSTITUTE

CERTIFICATION APPLICATION FOR THE

MEDWAY PROJECT (FERC NO. 2666)

Table of Contents

Index of Tables

Index of Figures

LOW IMPACT HYDROPOWER INSTITUTE

CERTIFICATION APPLICATION FOR THE

MEDWAY PROJECT (FERC NO. 2666)

1.0 PROJECT DESCRIPTION

1.1 PROJECT FACILITIES

The Medway Project (or "Project") is located on the West Branch of the Penobscot River in the town of Medway in Penobscot County, Maine. The West Branch is 93 miles (mi) long from its confluence with the East Branch of the Penobscot River (to form the mainstem of the Penobscot River) upstream to its headwater source at Seboomook Lake. The Medway Project consists of a dam and integral powerhouse.

Black Bear Hydro Partners, LLC's (Black Bear's) Medway Hydroelectric Project is a run-of-river hydroelectric generating facility. The Project consists of a 343-foot-long concrete gravity dam topped with 5.75-foot-high flashboards, creating an impoundment with a normal full pond elevation of 260.3 feet USGS. The Project has a powerhouse containing five generating units with a total installed capacity of 3.44 MW and a maximum hydraulic capacity of 3,450 cfs. The Project also includes an approximate 144-foot-long underground transmission line and appurtenant facilities and provides access to Project lands and waters and recreation opportunities. The Project is operated in run-of-river mode for the enhancement of downstream fisheries, including Atlantic salmon. The Project has upstream and downstream eel passage measures (see Figure 2). The Medway Project commenced initial commercial operations in 1923.

The Medway Project is part of the Lower Penobscot River Multiparty Settlement Agreement (Settlement Agreement), the goal of which is to restore self-sustaining populations of 11 native species of sea-run fish along the Penobscot River in Maine. The Settlement Agreement involved the purchase and removal of the lower-most dams on the Penobscot River, Veazie (FERC No. 2403) and Great Works (FERC No. 2312), and the decommissioning of the Howland dam (FERC No. 2721) on the Piscataquis River, a tributary of the Penobscot River. As part of the Settlement Agreement, the signatories agreed to amend the license for the Medway Hydroelectric Project to increase the authorized maximum elevation of the Project reservoir by one foot. In June 2004, an application was filed with the Federal Energy Regulatory Commission (FERC) for the amendment; FERC then issued the amendment on April 18, 2005 (111 FERC 62,063). The Medway Project license was transferred to Black Bear by FERC order dated September 17, 2009 (128 FERC ¶62,212).

The Medway Project generates clean, renewable electricity while providing recreational opportunities (portage trail and boat launch), fish passage measures, consistent water levels that enhance habitats for waterfowl, etc., and substantial support of the local community through stable property tax payments, reliable voltage support of the electrical distribution system, etc.

FIGURE 1. PROJECT FACILITIES – MEDWAY PROJECT (AERIAL)

FIGURE 2. PROJECT FACILITIES – MEDWAY PROJECT (DRAWINGS)

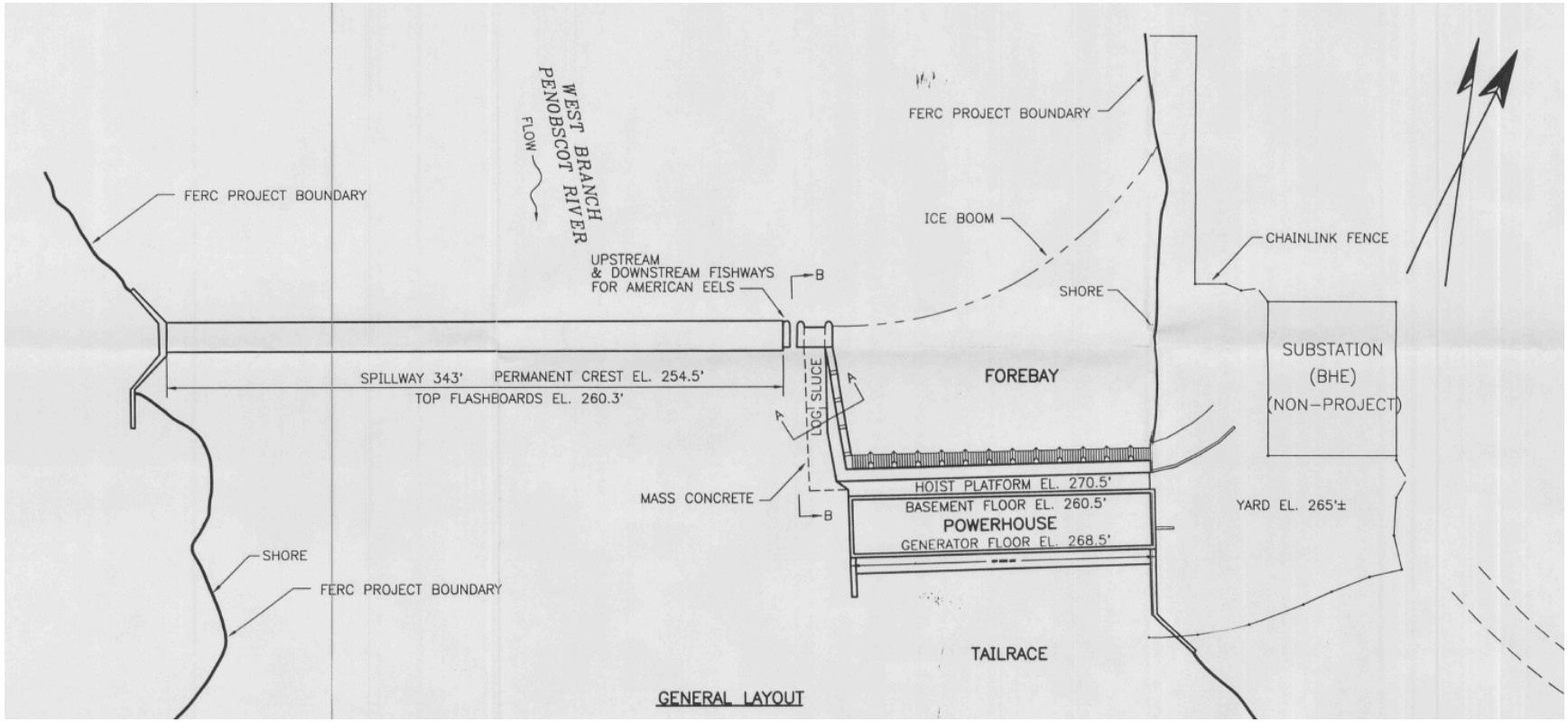


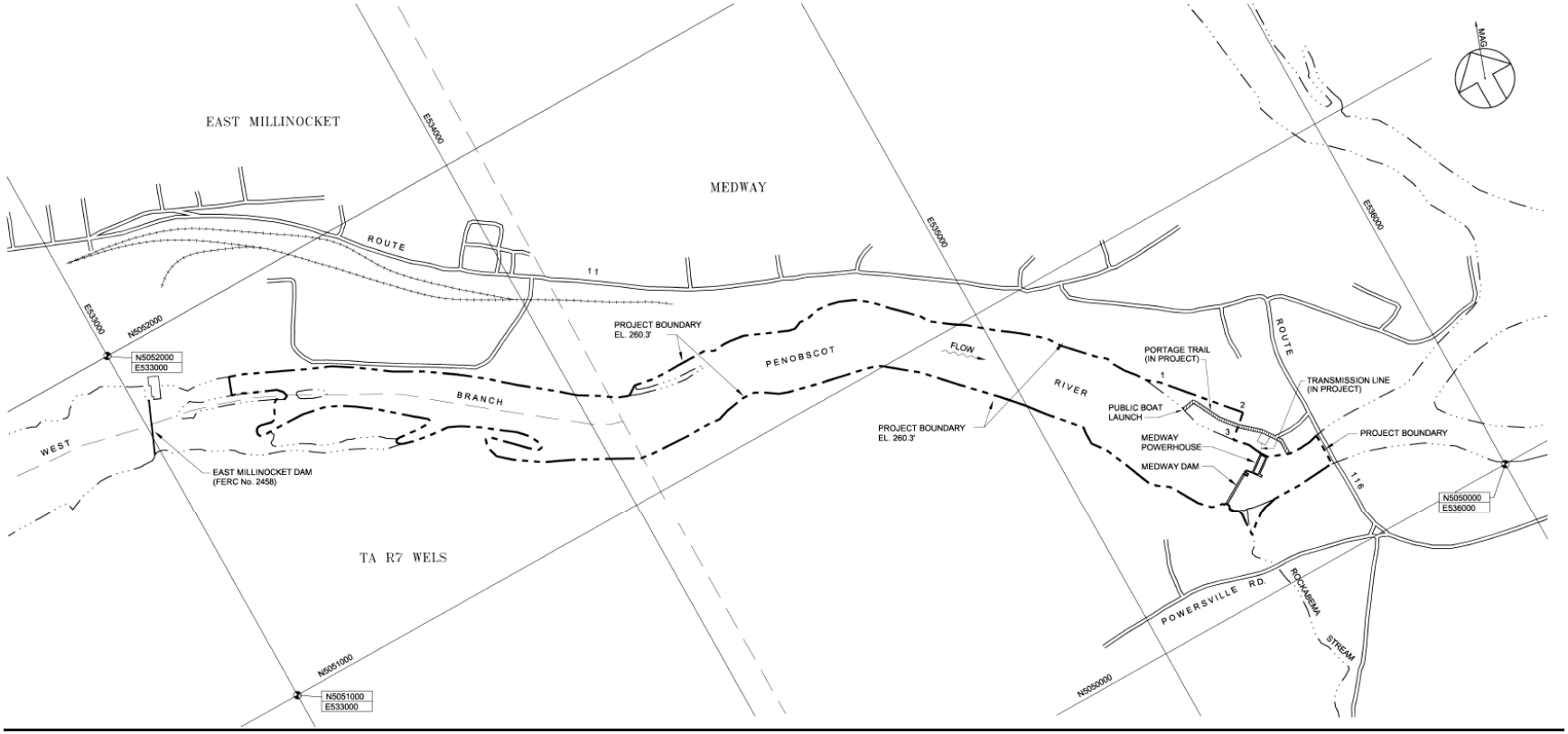
FIGURE 3. PROJECT FACILITIES – MEDWAY PROJECT (SPILLWAY AND EEL LADDER)

FIGURE 4. PROJECT FACILITIES – MEDWAY PROJECT (POWERHOUSE AND FOREBAY)

FIGURE 5. PROJECT FACILITIES – MEDWAY PROJECT (IMPOUNDMENT)

FIGURE 6. PROJECT FACILITIES – MEDWAY PROJECT (POWERHOUSE AND TAILRACE)

FIGURE 7. PROJECT BOUNDARY – MEDWAY PROJECT



1.2 PROJECT OPERATIONS

Black Bear operates the Project in run-of-river mode. Because the powerhouse is integral with the dam and there is no true bypass reach, there are no minimum flow requirements at the Project, as described below.

The existing impoundment is approximately 1.8 miles long, with a surface area of about 101.5 acres at a normal headwater surface elevation of 260.3 ft NGVD. The Project has a gross storage capacity of an estimated 2,400 ac-ft, and the usable storage capacity is negligible, being a run-of-river project. The normal headwater surface elevation is maintained when river flows are at or below the hydraulic capacity of the turbines.

Water levels and flows are dictated by the March 29, 1999 Order Issuing License and the April 18, 2005 Order Amending License authorizing the impoundment elevation increase. The 2005 Amendment revised Article 402 of the Project license as follows:

Article 402. The licensee shall operate the project in a run-of-river mode to protect aquatic life and water quality in the West Branch Penobscot River. The licensee shall at all times act to minimize reservoir surface elevation fluctuation by maintaining project discharge so that, at any point in time, flows immediately downstream from the project dam approximate flows into the project reservoir. The licensee shall maintain an impoundment surface elevation within six inches (in) of 260.3 feet above mean sea level (msl) except during emergency, maintenance, and high or low flow events beyond the licensee's control, following flashboard failures. Following flashboard failures, the licensee shall maintain impoundment level within six inches of the spillway crest, and shall replace the flashboards as soon as safely possible. Run-of-river operations may also be modified for short periods upon mutual agreement between the licensee and the Maine Department of Environmental Protection (DEP). The licensee shall notify the Commission as soon as possible, but no later than 10 days, after each incident resulting in a change in run-of-river conditions as specified above.

The Maine Department of Environmental Protection's Section 401 Water Quality Certification (WQC) Order #L-18893-35-B-N dated December 23, 1998, was modified on December 17, 2004 (Order #L-18893-33-H-M) to reflect the headpond proposal. Specifically, Condition 1.A. was modified and reads as follows:

CONDITION 1. WATER LEVELS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, and (4) agreement between the applicant, appropriate state and/or federal agencies, and the Penobscot Indian Nation, water levels in the project impoundment shall be maintained within 6 inches of full pond elevation (260.3 feet msl) when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.

Conditions 1.B of the Project's December 23, 1998 WQC states:

CONDITION 1. WATER LEVELS

B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.

There are no minimum flows required at the Project, pursuant to the March 29, 1999 Order Issuing License and the 2005 Amendment. Conditions 2.A, 2.B, and 2.C of the Project's December 23, 1998 WQC state:

CONDITION 2. MINIMUM FLOWS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, (4) impoundment refilling after flashboard failure and replacement, and (5) agreement between the applicant and appropriate state and/or federal agencies, outflows from the project shall be approximately equal to inflows at all times.

B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.

C. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit plans for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

1.3 PROJECT LOCATION

The Medway Project is located on the West Branch of the Penobscot River just above the confluence with the East Branch of the Penobscot River, which together form the mainstem of the Penobscot River below the Project. The next upstream dam from the Project is the East Millinocket Dam (which is part of the Penobscot Mills Project, FERC No. 2458), located approximately 1.8 miles upstream. The Mattaceunk Project (FERC No. 2520), downstream of the Medway Project and below the confluence of the West and East Branches, is located approximately 7.5 miles downstream on the mainstem of the Penobscot River.

FIGURE 3. PROJECT LOCATION – MEDWAY PROJECT

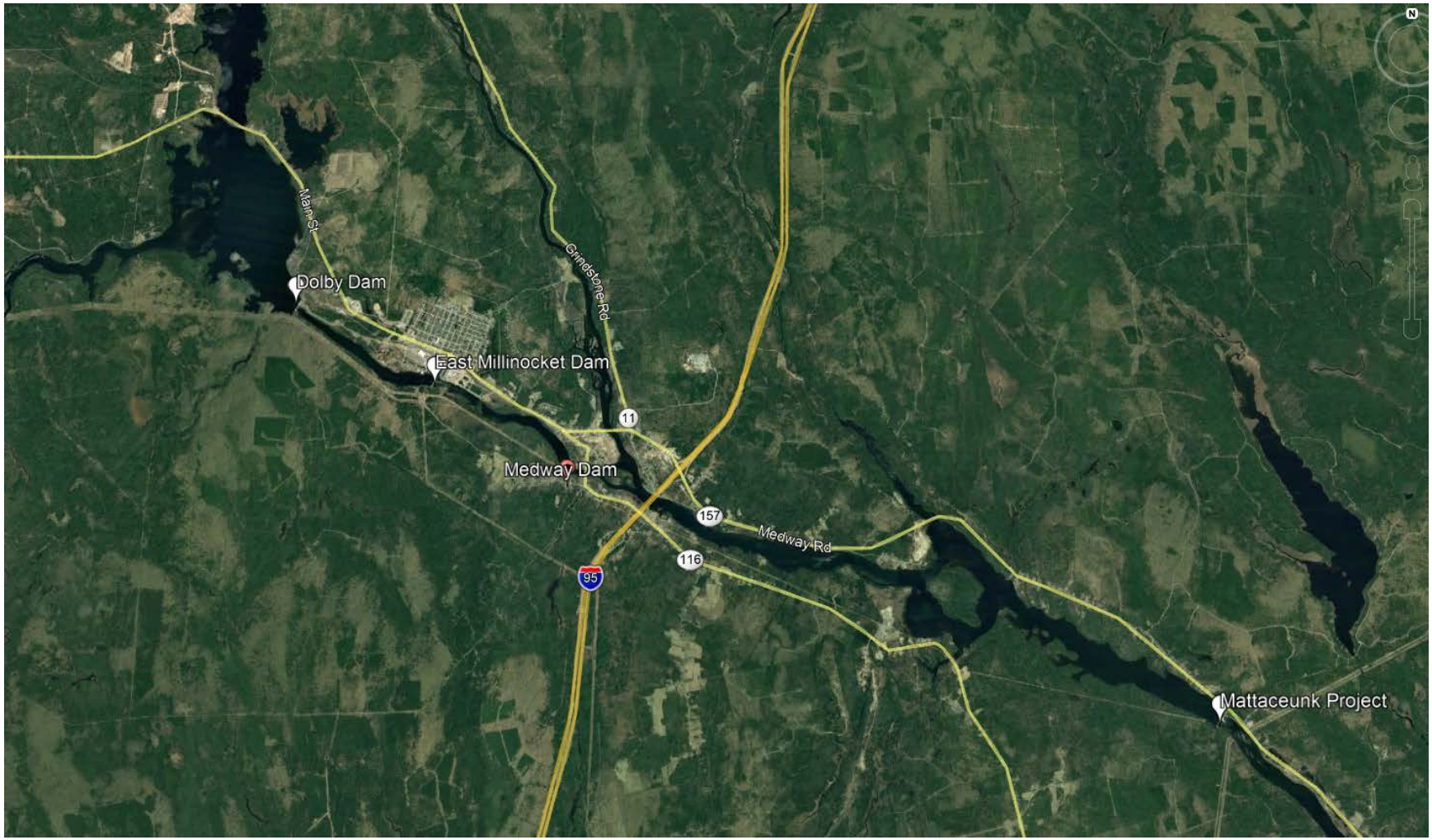
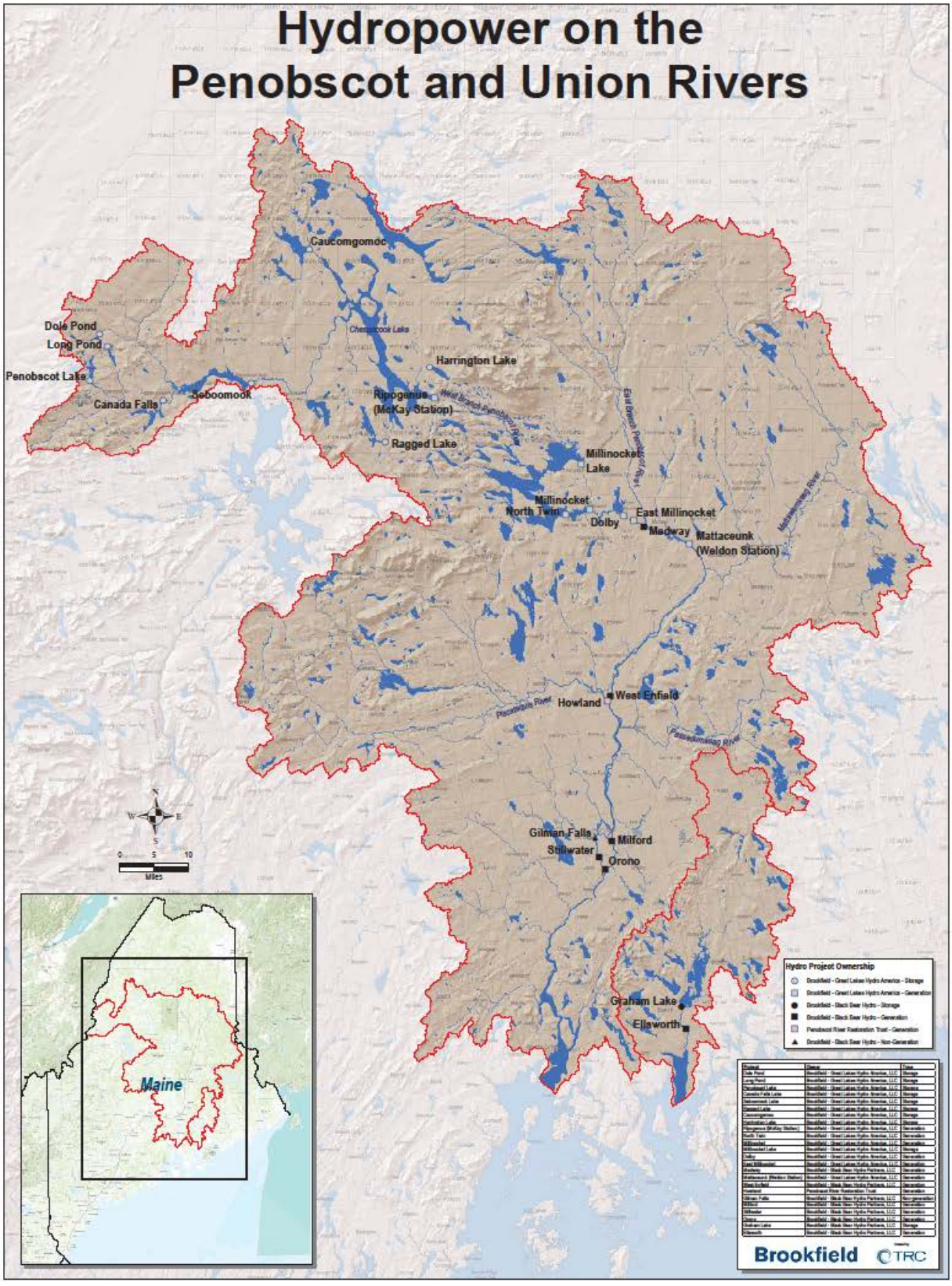


FIGURE 4. OVERVIEW MAP OF THE PENOBSCOT WATERSHED



1.4 REGULATORY AND OTHER REQUIREMENTS AND COMPLIANCE STATUS

1.4.1 FERC LICENSE AND WATER QUALITY CERTIFICATION REQUIREMENTS AND COMPLIANCE STATUS

The Medway Project received a new license from the FERC on March 29, 1999 and an amended license on April 18, 2005 for the headpond increase of 1 ft. A WQC was issued for the Project, associated with the new license, on December 23, 1998. The WQC was amended pursuant to the Settlement Agreement on December 17, 2004 and incorporated into the 2005 amended license.

Operational Requirements

The Medway Project is operated in a run-of-river mode, pursuant to Article 402 of the new and amended Project licenses and various conditions of the Project WQCs (see Section 1.1). Article 403 also required the filing of a plan to monitor flows and reservoir water levels for the Project, as did Condition 1.C. of the Project's 1998 WQC. The March 29, 1999 Order Issuing License for the Project includes Article 403 as follows:

Article 403. Within six months of the issuance date of this license, the licensee shall file with the Commission, for approval, a plan to monitor flow and reservoir water level at the project. The monitoring plan shall include a schedule for: (i) program implementation; (2) consulting with appropriate federal and state agencies concerning monitoring results; and (3) filing monitoring results, agency comments, and licensee's responses to agency comments with the Commission. The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, the U.S. Geological Survey, Maine Department of Environmental Protection, the Maine Department of Inland Fisheries and Wildlife and the Penobscot Indian Nation (PIN). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and PIN, and specific descriptions of how agency and PIN comments are accommodated by the plan. The licensee shall allow at least 30 days for the agencies to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the plan. The gaging plan shall not be implemented until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including changes required by the Commission.

Condition 1.C of the December 23, 1998 WQC states:

CONDITION 1: WATER LEVELS

C. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit plans for providing and monitoring the impoundment water levels required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

A Flow and Reservoir Level Monitoring Plan was filed on November 19, 1999 for the Project and was approved by FERC on March 23, 2000 (see Section 6.0).

Modifications to run-of-river and minimum flows that have occurred at the Medway Project over the past 5 years have been permitted by the FERC license, i.e., they were either operating emergencies beyond the control of Black Bear, or they were planned in consultation with resource agencies (see Section 6.0).

On September 3, 2020, Black Bear notified the FERC about a planned temporary modification in run-of-river operation and impoundment elevation requirements. From August 25 to 26, 2020, in order for divers to safely perform a dam safety inspection in the tailrace, Black Bear lowered the impoundment below the full pond elevation and took the powerhouse offline and passed all river flows through the sluice gate at the dam. After the dive inspection was completed, Black Bear refilled the impoundment and normal run-of-river operations resumed on August 26, 2020. FERC determined that this water level modification was not a violation of license by letter dated September 17, 2020.

On July 29, 2020, Black Bear notified the FERC about two planned temporary modifications in the run-of-river operation and impoundment elevation requirements. On July 17, 2020, Black Bear lowered the impoundment below full pond elevation of 260.3 ft to replace a safety cable across the Medway Dam. On July 24, 2020, Black Bear lowered the impoundment below the full pond elevation to replace the wooden sluice gate extension at the Medway Dam. After completing the work, the impoundment was refilled and normal run-of-river operations resumed on the same day in both instances. FERC determined that these water level modifications were not a violation of license by letter dated September 17, 2020.

From January 28 to June 6, 2019, ice and spring runoff damaged the flashboards at Medway Dam, resulting in the lowering of the Medway impoundment 1-2 feet, within allowable license limits, until the flashboards could be repaired. To accommodate flashboard repairs, Black Bear drew down the impoundment a targeted 5.5 feet to a low of 254.61 feet U.S. Geologic Survey (USGS), just above crest elevation, on June 6, 2019, and then refilled the impoundment close to its normal full pond elevation of 260.3 feet USGS and resumed run-of-river operations by 9:03 p.m. on the same day. Because it was necessary to draw down the impoundment and deviate from run of river conditions for the flashboard repairs outside of license limits, FERC was notified of this deviation on June 21, 2019. FERC determined that this water level modification to repair the flashboards was not a violation of license by letter dated July 31, 2019.

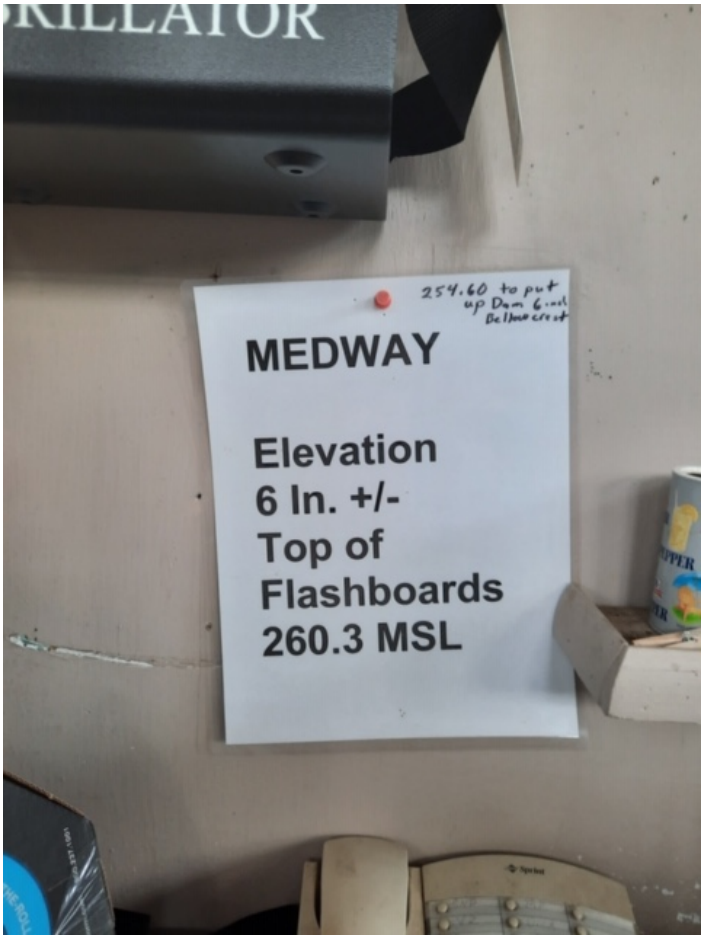
Likewise, from May 12 to June 13, 2019, ice and spring runoff damaged the flashboards, resulting in the lowering of the impoundment by 1 ft, within allowable license limits, until the flashboards could be repaired. To accommodate flashboard repairs, Black Bear drew down the impoundment on three separate occasions – to 255.06 ft on June 5, to 255.34 ft on June 8, and 258.8 ft on June 13. The impoundment was refilled close to its normal full pond elevation of 260.3 feet USGS and returned to run-of-river operations the next day on all three occasions. Because it was necessary to

draw down the impoundment and deviate from run of river conditions for the flashboard repairs outside of license limits, FERC was notified of this deviation on June 19, 2018. FERC determined that this water level modification was not a violation of license by letter dated July 12, 2018.

On September 15, 2017, a request was made to resource agencies and PIN to draw the impoundment down to facilitate dam safety inspections. The Medway impoundment was drawn on September 18, 2017 to elevation 259.3 feet, or one foot below full pond, to perform these inspections. On September 19, 2017, the generating units were taken offline to allow diver inspections of the powerhouse piers. The drawdown continued until September 20, 2017; at that time, the impoundment was returned to the required pond elevation of 260.3 feet. FERC was notified of the deviation on September 28, 2017, and they determined that this water level modification was conducted in compliance with Article 402 of the Project license by letter dated January 22, 2018.

On March 2, 2017, Black Bear deviated from the minimum required impoundment surface elevation from approximately 8:48 am to 9:19 am when Medway Station was taken offline to perform lock out/tag out, breaker racking, and testing activities for unit #4, which had been down for several months for rewinding and rebuilding. Black Bear opened sluice gates to maintain river flows; however, the flow released from the gates was greater than the flow necessary to maintain the impoundment surface level. This resulted in the reservoir surface level falling approximately 7.5 inches below full pond, or approximately 1.5 inches below the minimum impoundment surface level. Black Bear's National System Control Center (NSCC) received a low level alarm, and local operators adjusted the gates to increase the impoundment surface elevation. Black Bear committed to the installation of a low-level alarm at the Project and the retraining of the local operators. To that end, information regarding the required license elevations is posted at the station (see photo below), and the low-level alarm was entered into the NSCC's SCADA system (see figure below). FERC, who was notified of this deviation on March 10, 2017, determined that this excursion was not a violation of license by letter dated March 17, 2017.

All deviations are reported to the agencies, generally within 24 hours, and to the FERC within 10 days in compliance with the provisions of Article 402. Reports submitted to the FERC for the above-referenced deviations are provided in Section 6.0, which include copies of all agency consultation and correspondence.


254.60 to put up Dam & incl Bellmouth crest
MEDWAY
Elevation
6 In. +/-
Top of
Flashboards
260.3 MSL

Water Quality

As discussed elsewhere, the Medway Project operates under the terms of a FERC license and WQC, both as issued and amended. The West Branch of the Penobscot River, from the confluence with Millinocket Stream to the confluence with the East Branch of the Penobscot River, including the Medway Project waters, was upgraded to Class B by the Maine Department of Environmental Protection (MDEP) in 2019 (38 MRSA Section 467). Downstream of the Medway Project, the Penobscot River, from the confluence of the East and West Branches to its confluence with the Mattawamkeag River, was also upgraded to Class B at the same time.

Class B waters must be of such quality that they are "suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired." 38 MRSA Title 465. Also, the "dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the one-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between April 15th and October 31st, the number of Escherichia coli bacteria in these waters may not exceed a

geometric mean of 64 CFU (Colony Forming Units) per 100 milliliters over a 90-day interval, or 236 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval." 38 MRSA Title 465.

Water quality monitoring data collected by the Penobscot Indian Nation (PIN) in support of the 2019 reclassification shows that Class B criteria are attained in these reaches, including waters discharged by the Project, and that closure of two upstream paper mills has significantly improved the water quality of these segments.

Fish Passage

There are anadromous fish species in the lower mainstem of the Penobscot River, and fish passage facilities for migratory species are required and have been installed at the four lower Projects on the mainstem and the Stillwater Branch of the Penobscot River, as dictated by the 2004 Settlement Agreement. Except for American eel passage facilities, the Medway Project does not have upstream and downstream fish passage facilities for diadromous fish species, as these migratory species do not inhabit the West Branch of the Penobscot River. However, Articles 401, 404, and 405 of the Project FERC license contain requirements regarding fish passage.

Article 401 reserves authority to the Commission to require the licensee to install fish passage facilities as may be directed by the Secretary of the Interior under Section 18 of the Federal Power Act.

Article 401(A), as amended on February 21, 2013, requires Black Bear to consult with the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), PIN, Maine Department of Inland Fisheries and Wildlife (MDIFW), and Maine Department of Marine Resources (MDMR) once every five years regarding the status of Atlantic salmon and other Endangered Species Act-listed fishes in the Penobscot River to ensure that operation of the Medway Project is consistent with the listing determinations for such species and with the then-current recovery objectives for such species. These reports are provided in Section 6.0.

Article 401(B), as amended on February 21, 2013, incorporates the terms and conditions of the incidental take permit included with the NMFS's Biological Opinion (BiOp), filed on August 31, 2012, as they pertain to the Medway Project (see Section 6.0). In addition, Article 401(C) also amended on February 21, 2013, required Black Bear to file, for Commission approval, a revised Species Protection Plan (SPP) and corresponding Atlantic Salmon Passage Study Plan. These documents were filed with the FERC on September 13, 2013 (see Section 6.0). Three reasonable and prudent measures from the NMFS BiOp pertinent to the Medway Project are included in the Project license, pursuant to Article 401(b), as follows:

> *1. FERC must ensure, through enforceable conditions of the project license, that the licensee minimize incidental take from all in-water and near-water activities by applying best management practices to the proposed action that avoid or minimize adverse effects to water quality and aquatic resources.*

2. To minimize incidental take from project operations, FERC must require that the licensee measure and monitor the performance standards contained in the June 7, 2012 Species Protection Plan (SPP) in a way that is adequately protective of listed Atlantic salmon. To implement this reasonable and prudent measure, the licensee (among other things) must contact NMFS within 24 hours of any interactions with Atlantic salmon, including non-lethal and lethal takes

3. FERC must ensure, through enforceable conditions of the project license, that the licensee complete an annual monitoring and reporting program to confirm that the licensee is minimizing incidental take and reporting all project-related observations of dead or injured salmon to NMFS.

SPP reports are filed for the Project annually (see Section 6.0).

Article 404 required Black Bear to file design drawings for upstream and downstream American eel passage at the Project. These documents were filed on September 19 and November 2, 1999, and they were approved by FERC on April 24, 2000. Article 405 requires Black Bear to file a plan to monitor effectiveness of the eel passage facilities. The study plan was filed on September 29, 1999, revised on November 2, 1999, and approved by FERC on April 24, 2000. The Plan included up to three years of siting studies for upstream eel passage location and installation of a bellmouth weir for downstream passage, as well as annual meetings and reports. Installation of the bellmouth weir was completed in 2000. The permanent upstream eel fishway was completed in June 2004, and Black Bear filed an Upstream Eel Fishway Monitoring Plan that was approved by FERC on June 23, 2004. An assessment report was filed on February 26, 2007 indicating that insufficient numbers of eels were being collected for study purposes; FERC approved suspending studies at the Project for five years on March 27, 2007. Subsequently, a request to modify the monitoring plan was filed on May 23, 2016 (and approved by the FERC on June 20, 2016), which suspended Black Bear's upstream eel monitoring and annual reporting requirement after 12 years of monitoring. On September 26, 2019, FERC requested that Black Bear resume downstream eel studies for the fall 2020 season using radio telemetry methods and out of basin eels as study fish, as this approach had been successful at other Brookfield Projects in Maine. Black Bear submitted a study plan to FERC on June 15, 2020 that details downstream eel passage studies to be conducted at the Project in the fall of 2020.

Land Management

Lands within the Medway FERC project boundary are generally limited to those necessary for operation and maintenance of the Project and for other Project purposes. The Project does not have an abundance of shoreline lands, with the project boundary generally following the normal full pond elevation of the impoundment and only including the project structures and immediate adjacent lands. The Project does not have a requirement for a Shoreline Management Plan (SMP), but the FERC license does contain a Standard Land Use Article that provides direction for conveying new land uses within the project boundary.

Recreational Resources

Article 407 of the Medway Project license requires the licensee to implement its recreation plan for Project recreation facilities, including a boat launch and canoe portage and associated signage. The specific language of Article 407 is:

Article 407. The revised recreation plan approved in Bangor Hydro-Electric Company, 72 FERC ¶ 62,093 (1995), which provides for a hand-carried boat launch on the north shore of the West Branch of the Penobscot River, a canoe portage and appurtenant facilities, and warning/informational signs, is made part of this license.

The only Project recreational facilities at the Medway Project are the canoe portage trail and the boat launch on the north shore of the impoundment. The canoe portage trail was completed in 1995, and documentation of completion was filed with FERC. There are no specific recreation monitoring requirements at the Medway Project, as the Form 80 recreation reports, referenced in Article 407 of the Project license, are no longer required.

Cultural Resources

Article 406 requires the Licensee to consult with the State Historic Preservation Officer and file a Cultural Resource Management Plan, prior to any construction other than approved in the license. Article 406 reads as follows:

The licensee, before starting any land clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in this license, including recreation developments at the project, shall consult with the State Historic Preservation Officer (SHPO). If the licensee discovers previously unidentified archeological or historic properties during the course of constructing or developing project works or other facilities at the project, the Licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the properties and consult with the SHPO. In either instance, the licensee shall file for Commission approval a cultural resource management plan (plan) prepared by a qualified cultural resource specialist after having consulted with the SHPO, or a letter from SHPO stating a CRMP is not needed. The plan shall include the following items: (1) a description of each discovered property indicating whether it is listed on or eligible to be listed on the National Register of Historic Places; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan. The licensee shall not begin land-clearing or land disturbing activities, other than those specifically authorized in this license, or resume such activities in the vicinity of a property discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

No historic or archaeological properties, either listed or eligible for listing on the National Register of Historic Places, are located in the Project area. As part of the original license and impoundment raising amendment, the Maine Historic Preservation

Commission (MHPC) determined that there are no properties in the Medway Project area of prehistoric, historic, architectural, or archaeological significance that would be impacted by the Project.

1.4.2 LIHI Certification Requirements and Compliance Status

The following provides a summary of compliance activities for the current LIHI Certification terms for the Medway Project:

Condition 1. The Owner shall be proactive in contacting the MDIFW a minimum of 30 days prior to any planned drawdown of the impoundment that would expose a significant portion of the river bottom, to determine if any special measures are needed to avoid or minimize adverse impacts to state-threatened mussels that may be in the impoundment. The Owner shall work with the MDIFW to implement appropriate mitigation measures should they be needed. The Owner shall advise LIHI of any such events, including the results of any activities conducted to minimize such impacts. Such notification shall be provided as part of the annual compliance statement to LIHI.

Black Bear has not undertaken any planned drawdown of the Medway impoundment that has exposed a significant portion of the river bottom. Minor, routine drawdowns are undertaken most years for the purpose of flashboard repairs. Resource agencies are notified of planned maintenance activities, and a report is submitted to the FERC.

TABLE 1. FACILITY INFORMATION

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Medway Project (FERC No. 2666)
Reason for applying for LIHI certification	1. To participate in state RPS program (specify the state and the total MW/MWh associated with that participation (value and % of facility total MW/MWh) 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6.Other (describe)River name (USGS proper name)	1. Yes. MA Class II RPS program. 100% of the Medway facility output is qualified, estimated to be 29,732 MHh in 2020. 2. Possibly as a secondary channel for participating in REC markets. 3. Possibly if a better price can be secured 4. Possibly, but participating in the MA RPS program is the primary driver. 5. Yes, but participating in the MA RPS program is currently the primary reason.
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	100% of Medway's generation (estimated at 29,732 MWh in 2020) is qualified for the MA Class II RPS program
Location	River name (USGS proper name)	West Branch of the Penobscot River
	Watershed name (select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html)	01020001 - Upper Penobscot River
	Nearest town(s), county(ies), and state(s) to dam	Town of Medway, Penobscot County, Maine
	River mile of dam above mouth	RM 0.30 (*as measured from the confluence of the West and East Branches of the Penobscot River downstream of the Project)*
	Geographic latitude of dam	Medway Dam: 45°36'26.53"N
	Geographic longitude of dam	Medway Dam: 68°32'43.89"W
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Kelly Maloney, Compliance Manager, Northeast Region

Item	*Information Requested*	*Response (include references to further details)*
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the date of the change.**	Brookfield Renewable Partners L.P. Kelly Maloney, Compliance Manager, Northeast Region; Ownership has not changed since last certification
	FERC licensee company name (if different from owner)	Black Bear Hydro Partners, LLC
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	Medway Project FERC No. 2666 Issued March 29, 1999 Expires March 31, 2029
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", “non-jurisdictional”)	Hydropower license for Major Project; Federal Power Act
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments. Include links or copies.	#L-18893-35-B-N - December 23, 1998 #L-18893-33-H-M - December 17, 2004
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories	See Sections 6.0 and 7.0 for hyperlinks to, or documentation of, relevant records, including FERC License and Amendment Orders; Section 401 Water Quality Certification; FERC and regulatory filings; and other key documents.
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Medway: 1923
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	3.44 MW The installed capacity has not changed since the last certification
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	29,944 MWh (Period of Record: 2014 to 2019) There have been no changes to annual generation
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Run-of-river The mode of operation has not changed since the last certification

<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (include references to further details)</th></tr>
<tr><td></td><td>Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit</td><td>5 Turbine-Generators – Francis
<table>
<tr><th>Unit</th><th>Max Hydraulic Capacity (cfs)</th><th>Unit Authorized Installed Capacity (MW)</th></tr>
<tr><td>1</td><td>690</td><td>0.68</td></tr>
<tr><td>2</td><td>690</td><td>0.68</td></tr>
<tr><td>3</td><td>690</td><td>0.68</td></tr>
<tr><td>4</td><td>690</td><td>0.70</td></tr>
<tr><td>5</td><td>690</td><td>0.70</td></tr>
<tr><td>TOTAL</td><td>3,450</td><td>3.44</td></tr>
</table></td></tr>
<tr><td></td><td>Trashrack clear spacing (inches), for each trashrack</td><td>2 ¾</td></tr>
<tr><td></td><td>Dates and types of major equipment upgrades
For recertifications: Indicate only those since last certification</td><td>No major equipment upgrades for the Project since last certification</td></tr>
<tr><td></td><td>Dates, purpose, and type of any recent operational changes
For recertifications: Indicate only those since last certification</td><td>No operational changes since the last certification</td></tr>
<tr><td></td><td>Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments</td><td>No facility upgrades or license amendments are planned or anticipated for the recertification period, outside of current regulatory compliance requirements</td></tr>
<tr><td>Dam or Diversion</td><td>Date of original construction and description and dates of subsequent dam or diversion structure modifications</td><td>The Medway Dam and powerhouse were originally constructed in 1922 by the Penobscot Power Company. The apron of the dam was reconstructed in 1931, and the spillway was reinforced and strengthened in 1954-1955. In 1987, the lower portion of the powerhouse substructure was rehabilitated with new steel draft tube liners installed in concrete encasements.</td></tr>
<tr><td></td><td>Dam or diversion structure height including separately, the height of any flashboards, inflatable dams, etc.</td><td>The main, or spillway portion of this dam, is approximately 343 feet long and has an average height of approximately 20 feet, exclusive of flashboards. The dam, which is fitted with 5-foot 10-inch high flashboards (creating a full pond elevation of 260.3 feet USGS), is of concrete gravity design and has a crest elevation of 254.5</td></tr>
</table>

Item	*Information Requested*	*Response (include references to further details)*
		feet USGS. The forebay wall portion of this dam is also of concrete gravity design and is approximately 64 feet long.
	Spillway elevation and hydraulic capacity	The spillway is 343 ft long, topped with 5.0 ft, 10 inch flashboards. The spillway has a discharge capacity of approximately 18,700 cfs at an elevation of 260.5 feet USGS.
	Tailwater elevation (provide normal range if available)	Tailwater elevation of 240.45 ft at maximum powerhouse hydraulic capacity of 3,450 cfs
	Length and type of all penstocks and water conveyance structures between the impoundment and powerhouse	The powerhouse intake is integral to the dam.
	Dates and types of major infrastructure changes	See "Date of original construction and description and dates of subsequent dam or diversion structure modifications" section above.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power
	Source water	West Branch of the Penobscot River
	Receiving water and location of discharge	West Branch just above the mainstem of the Penobscot River at its confluence with the East Branch of the Penobscot River
Conduit	Date of conduit construction and primary purpose of conduit	N/A
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	260.3 ft normal full pond elevation; run of river operations allows 6 inches for operational flexibility; flashboard failure at 1 ft of overtopping No changes in authorized maximum and minimum water surface elevations since last certification.
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	See above. No changes in normal operating elevations and normal fluctuation range since last certification.

Item	*Information Requested*	*Response (include references to further details)*
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	Gross Storage Volume: Estimated 2,400 acre-ft Surface Area: 101.5 acres at normal full pond No changes in gross storage volume or surface area at full pond since last certification.
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	Negligible; run-of-river No changes in usable storage volume or surface area since last certification.
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g. fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	Operated in a run-of-river mode where inflow equals outflow. Flows in excess of station hydraulic capacity are spilled over the spillway. No ramping or refill rate restrictions.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	East Millinocket and Dolby Developments, both part of the Penobscot Mills Project (FERC No. 2458), respectively located at miles 2.3 and 4.2 as measured from the confluence of the East and West Branches of the Penobscot River; owned and licensed to Great Lakes Hydro America, LLC (GLHA); these Developments do not have anadromous fish and do not have downstream fish passage.
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	Mattaceunk Project FERC No. 2520 – owned and licensed by GLHA; river mile 67 (as measured to head-of-tide in Bangor, Maine) West Enfield Project FERC No. 2600 – owned and licensed by Bangor-Pacific Hydro Associates; river mile 38 (as measured to head-of-tide in Bangor, Maine) Milford Project FERC No. 2534 – owned and licensed by Black Bear; river mile 12 (as measured to head-of-tide in Bangor, Maine) Each of these projects has upstream fish passage facilities

<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (include references to further details)</th></tr>
<tr><td></td><td>Operating agreements with upstream or downstream facilities that affect water availability and facility operation</td><td>Brookfield operates all facilities both in the West Branch of the Penobscot River upstream of the Medway Project and on the mainstem of the Penobscot River downstream of the Project. West Branch flows are dictated by GLHA's Storage, Ripogenus, and Penobscot Mills FERC licenses; operations of the Penobscot River mainstem facilities downstream of the Medway Project are dictated by the project FERC licenses and the 2004 Settlement Agreement (which determine flows below Milford Dam to the mainstem and Stillwater Branch of the Penobscot River).</td></tr>
<tr><td></td><td>Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.</td><td>Water: 101.5 acres
Land: 3.7 acres</td></tr>
<tr><td>Hydrologic Setting</td><td>Average annual flow at the dam, and period of record used</td><td><u>Medway</u>
Period of Record 2010-2018
<table><tr><th>Year</th><th>Average Flow (cfs)</th></tr><tr><td>2010</td><td>3,895</td></tr><tr><td>2011</td><td>5,175</td></tr><tr><td>2012</td><td>3,576</td></tr><tr><td>2013</td><td>3,619</td></tr><tr><td>2014</td><td>3,662</td></tr><tr><td>2015</td><td>3,649</td></tr><tr><td>2016</td><td>3,604</td></tr><tr><td>2017</td><td>3,972</td></tr><tr><td>2018</td><td>3,568</td></tr><tr><td>Average</td><td>3,858</td></tr></table></td></tr>
</table>

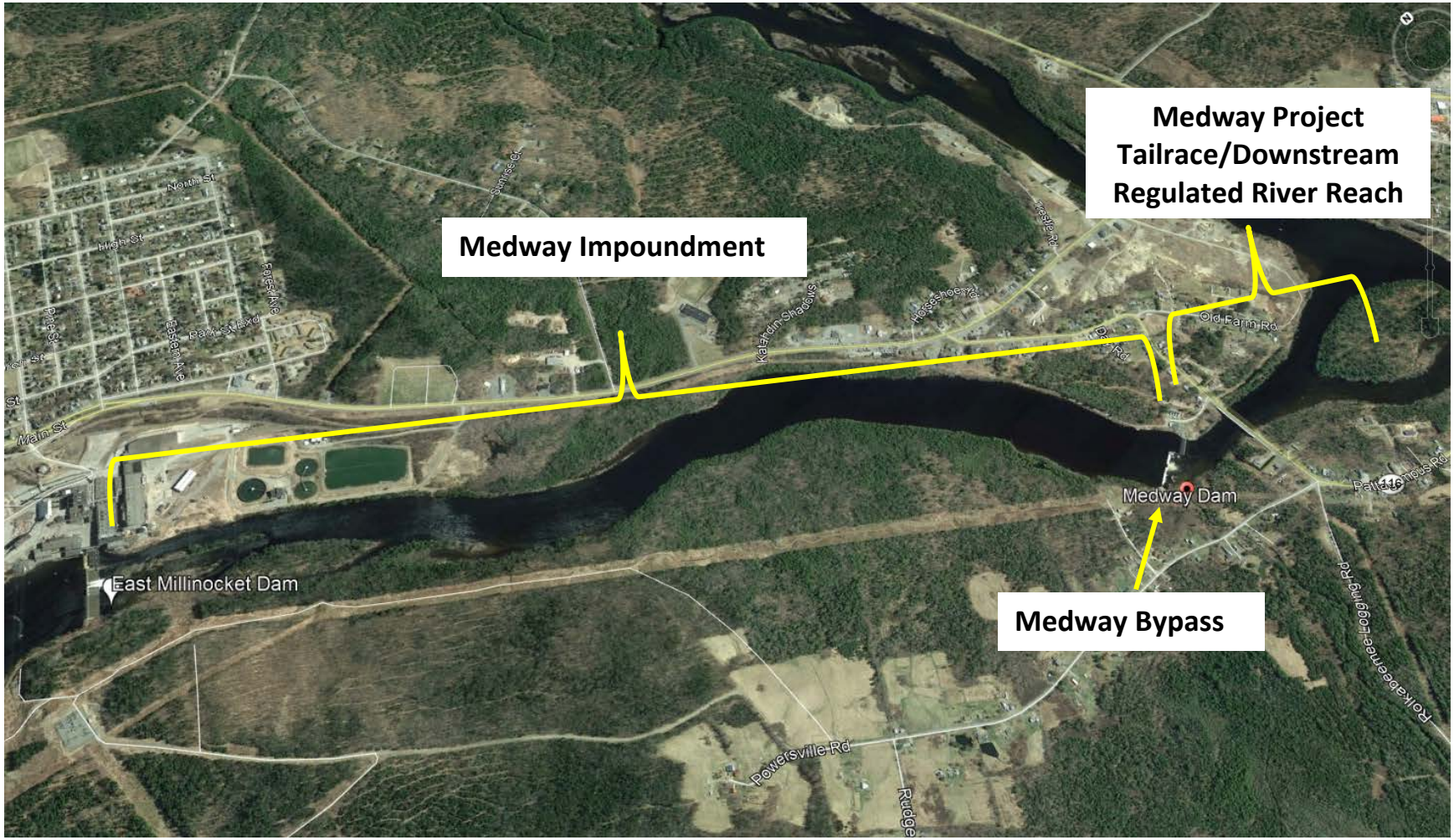
<table>
<tr><th>Item</th><th>Information Requested</th><th>Response (include references to further details)</th></tr>
<tr><td></td><td>Average monthly flows and period of record used</td><td><u>Medway</u>
Period of Record 2010-2018
<table><tr><th>Month</th><th>Average Flow (cfs)</th></tr><tr><td>January</td><td>3,960</td></tr><tr><td>February</td><td>4,067</td></tr><tr><td>March</td><td>3,906</td></tr><tr><td>April</td><td>4,133</td></tr><tr><td>May</td><td>5,387</td></tr><tr><td>June</td><td>4,103</td></tr><tr><td>July</td><td>3,595</td></tr><tr><td>August</td><td>3,168</td></tr><tr><td>September</td><td>3,710</td></tr><tr><td>October</td><td>3,274</td></tr><tr><td>November</td><td>3,106</td></tr><tr><td>December</td><td>3,915</td></tr></table></td></tr>
<tr><td></td><td>Location and name of closest stream gauging stations above and below the facility</td><td>Upstream: USGS 01027200, North Branch of the Penobscot River near Pittston Farm; USGS 01027240, South Branch of the Penobscot River near Canada Falls Lake
Downstream: USGS 01034500, Penobscot River at West Enfield, Maine</td></tr>
<tr><td></td><td>Watershed area at the dam (in square miles). Identify if this value is prorated and provide the basis for proration.</td><td><u>Medway</u>
2,113.5 sq. miles (not prorated)</td></tr>
<tr><td>Designated Zones of Effect</td><td>Number of zones of effect</td><td>3</td></tr>
<tr><td></td><td>Upstream and downstream locations by river miles</td><td>Zone 1: Medway Impoundment; RM 2.0 to 0.5 (measured from the confluence of the East and West Branches of the Penobscot River)
Zone 2: Medway Bypass Reach; RM 0.50 to 0.45 (measured from the confluence of the East and West Branches of the Penobscot River)
Zone 3: Medway Project Tailrace/Downstream Regulated River Reach; RM 0.5 to 0.0 (measured from the confluence of the East and West Branches of the Penobscot River)</td></tr>
</table>

Pre-Operational Facilities		
Expected operational date	Date generation is expected to begin	N/A
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	N/A
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	N/A

2.0 ZONES OF EFFECT

The Medway Project Impoundment Zone of Effect backwaters from Medway Dam upstream to the East Millinocket Dam, which is part of the Penobscot Mills Project (FERC No. 2458). The Medway Project also includes a Bypass Zone of Effect. The bypass reach discharges into the West Branch of the Penobscot River merging with the Project's turbine discharge flows just downstream of Medway Dam. The short reach of the West Branch of the Penobscot River from the Project tailrace downstream to the confluence with the East Branch of the Penobscot River, together with a portion of the downstream mainstem of the Penobscot River, constitute the Tailrace/Downstream Regulated River Reach.

FIGURE 5. ZONES OF EFFECT – MEDWAY PROJECT



2.1 ZONE 1 – MEDWAY IMPOUNDMENT

The Medway Dam backwaters the West Branch of the Penobscot River to the base of the East Millinocket Dam. The Zone of Effect for this reach extends from RM 2.0 to RM 0.5 of the West Branch of the Penobscot River, as measured from the confluence of the West and East Branches of the Penobscot River. This Zone of Effect comprises the reach of the West Branch of the Penobscot River from the tailrace of the East Millinocket Dam to Medway Dam.

FIGURE 8. ZONE 1 – MEDWAY IMPOUNDMENT

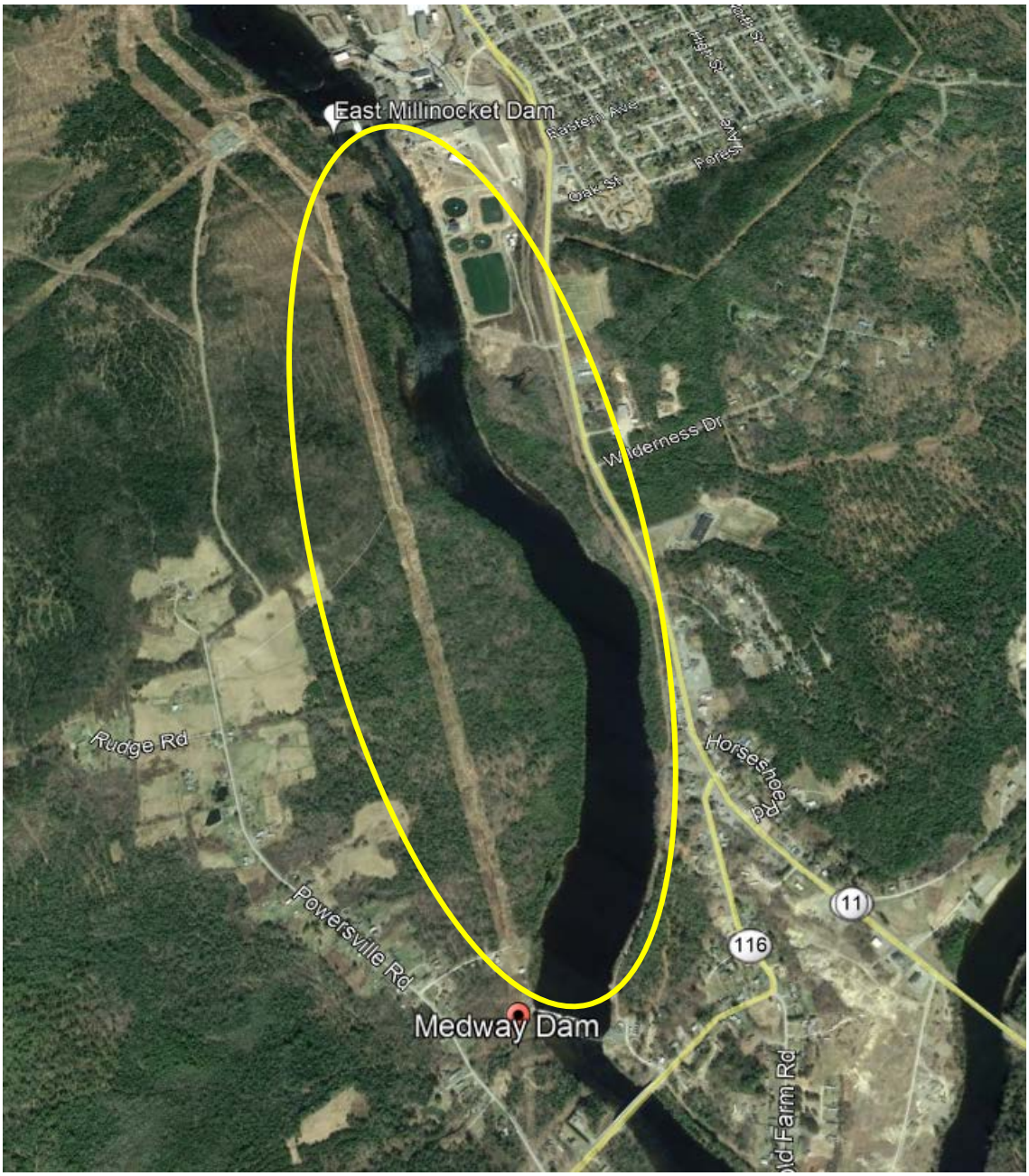


TABLE 2. ZONE 1 – MEDWAY IMPOUNDMENT MATRIX OF ALTERNATIVE STANDARDS

Facility Name: Medway Project **Zone of Effect: 1– Impoundment**

	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*	*X*		
G	**Cultural and Historic Resources Protection**		*X*			
H	**Recreational Resources**		*X*			

As discussed above, the reach of the West Branch of the Penobscot River upstream of the Medway Project receives run-of-river flows from the East Millinocket Development, part of the Penobscot Mills Project. The Medway impoundment is backwatered by the Medway Dam to the base of the East Millinocket Dam. The Medway Project is operated in a run of river mode with minimum fluctuations of 6 inches of normal full pond (when the flashboards are in) and 6 inches of the crest elevation of the dam (when the flashboards have failed). Occasional drawdowns for maintenance, inspections, or to replace the flashboards have been undertaken, as discussed above. This reach is designated as Class B, and water quality monitoring indicates that this reach meets water quality standards.

There are no anadromous fish species in this section of the West Branch of the Penobscot River, as the West Branch is managed for resident fish species such as landlocked salmon, brook trout, and smallmouth bass; in addition, the West Branch of the Penobscot River is not designated as critical habitat for endangered Atlantic salmon, which instead utilize designated critical habitat in the mainstem and East Branch of the Penobscot River. As a result, there are no upstream fish passage facilities at the Medway Dam for anadromous fish; upstream and downstream passage is provided at Medway Dam for catadromous American eels, although they are documented in low numbers in the West Branch of the Penobscot upstream of the Medway Dam.

Other than the dam parcel, impoundment shoreline lands are not located within the project boundary. The shoreline lands at the Medway Project are unaffected by Project operations, as the Project is managed for a stable headpond and only Project structures occupy lands within the project boundary. As with the other Zones of Effect, three species are listed as federally Endangered/Threatened in the Project area, Canada lynx, Atlantic salmon and Northern Long-Eared Bat (NLEB). Threatened, endangered and state-listed special concern bats, including NLEB, which are also listed as state endangered, along with the Little brown bat, and eastern small footed bat, are not affected by routine project operations, as there are minimal lands within the project boundary and limited vegetation management activities conducted by Black Bear. Atlantic salmon are not present in the Medway impoundment, as upstream passage is intentionally not provided for anadromous fish at Medway Dam. Brook floater is listed as state-threatened and documented in the general vicinity though not speciwithin the project

area but run of river operations ensures limited effects. There are no prehistoric archaeological sites at the Project, and there is no CRMP (Cultural Resource Management Plan). Recreation facilities in this Zone of Effect include the impoundment boat launch on the north shore and the canoe portage trail.

2.2 ZONE 2 – MEDWAY BYPASS REACH

Medway Dam consists of a concrete structure with an integral powerhouse. The dam spillway is approximately 343 feet long. The bypass reach of the Project extends from RM 0.5 to RM 0.45 of the West Branch of the Penobscot River, as measured from its confluence with the East Branch of the Penobscot River. The Project is operated in a run-of-river mode. Flows in excess of the station's hydraulic capacity are discharged over the spillway.

FIGURE 9. ZONE 2 – MEDWAY BYPASS REACH

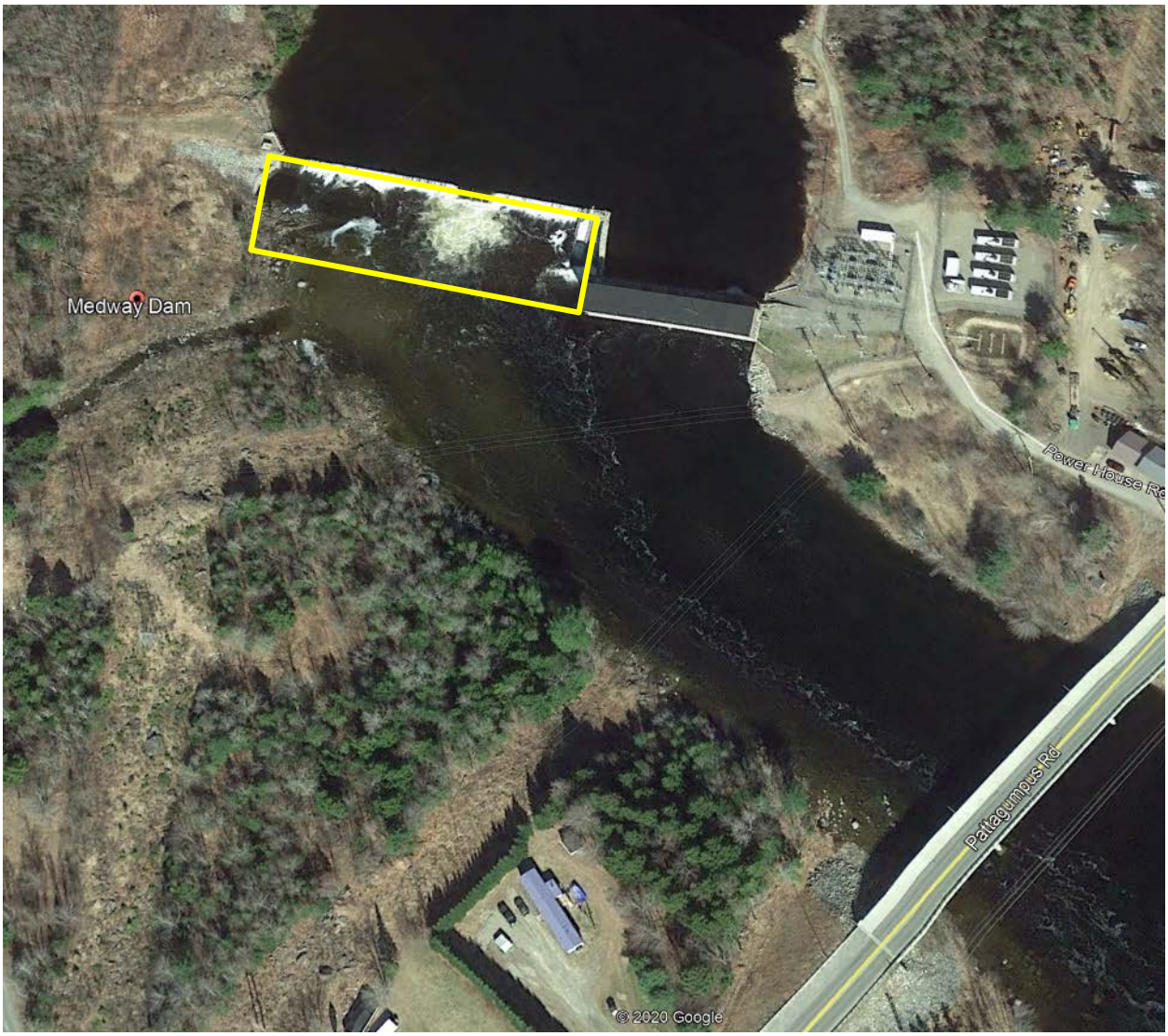


TABLE 3. ZONE 2 – MEDWAY BYPASS REACH

Facility Name: Medway Project **Zone of Effect: 2– Medway Bypass Reach**

	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	X		
G	Cultural and Historic Resources Protection		X			
H	Recreational Resources	X				

As discussed above, the Medway Project is managed as a run-of-river facility with stable headpond management and inflows passed as outflows via the powerhouse and the spillway (spillage flows are discharged to the bypass reach). The water quality of this reach is classified as Class B. There are anadromous fish species in this section of the West Branch of the Penobscot River downstream of Medway Dam, as there are both upstream and downstream fish passage facilities for migratory species at the downstream Weldon Dam (part of the Mattaceunk Project) along with other hydro projects further downstream on the main stem of the Penobscot River. However, they are intentionally not allowed to pass upstream at Medway, as the West Branch of the Penobscot River is managed for resident fish species such as landlocked salmon, brook trout, and smallmouth bass, and the West Branch is not designated as critical habitat for Atlantic salmon. Medway Dam does have upstream and downstream eel passage facilities.

Other than a small area within the dam parcel, there are no shoreline lands within the Medway project boundary, nor in this Zone of Effect. Medway Dam operates to pass inflows in a run-of-river fashion, so lands adjacent to this Zone of Effect are generally unaffected by Project operations. Three species are listed as federally Endangered/Threatened in the Project area, Canada lynx, Atlantic salmon and NLEB, which is also state listed as endangered along with Little brown bat and Eastern small footed bat plus five bat species identified as state Special Concern. None are affected by routine Project operations, as there are no lands within this Zone of Effect, and the Project operates under a SPP and BiOp that provide protection measures for Atlantic salmon (the restoration focus of which is on the main stem of the Penobscot River and its tributaries, including the unimpeded East Branch of the Penobscot River). While brook floater has been identified in the vicinity of the Project, this species would not be expected in the high velocity area of the bypass reach. There are no prehistoric archaeological sites at the Project, nor in this Zone of Effect. There are no recreation sites within this Zone of Effect.

2.3 ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Medway Dam is comprised of a single powerhouse integral with the dam. The tailrace begins at RM 0.5 of the West Branch of the Penobscot River (as measured from its confluence with the East Branch of the Penobscot River), and this reach (Zone 3) extends downstream to the confluence of the East and West Branches of the Penobscot River. The tailrace flows converge with the bypass reach flows to travel a short distance down the West Branch of the

Penobscot River to the confluence. The two branches merge there to form the mainstem of the Penobscot River. The Medway FERC project boundary ends just above the Route 116 highway bridge downstream of Medway Dam.

FIGURE 10. ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

TABLE 4. ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH MATRIX OF ALTERNATIVE STANDARDS

Facility Name: Medway Project **Zone of Effect: 3– Medway Project Tailrace**

	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*	*X*		
G	Cultural and Historic Resources Protection		*X*			
H	Recreational Resources		*X*			

The Medway Project Tailrace/Downstream Regulated River Reach receives water from the powerhouse, which converges with flow from the bypass reach and flows a short distance down the West Branch of the Penobscot River to its confluence with the East Branch of the Penobscot River. These branches merge to form the mainstem of the Penobscot River.

The portions of the West Branch and the mainstem of the Penobscot River in this reach are Class B. There are anadromous fish species in this reach, as there are upstream and downstream fish passage facilities for migratory species at the mainstem projects downstream (Mattaceunk, West Enfield and Milford Projects). In addition, while there are intentionally no upstream or downstream fish passage facilities at the Medway Project for anadromous fish species, the Project provides upstream and downstream passage for catadromous American eels. The West Branch of the Penobscot River is designated as critical habitat for Atlantic salmon upstream to the base of Medway Dam. Atlantic salmon are listed as an endangered species under the Endangered Species Act (ESA), and the Project operates under an SPP and BiOp that provide protection measures for the species. In addition to Atlantic salmon, Canada lynx and several species of bat are listed under the federal and/or state ESA, but they are unaffected by project operations. Brook floater, identified in the vicinity, would not be expected in the high velocity reach of the project tailrace.

There are no lands within the project boundary in this Zone of Effect, save for small areas of shoreline adjacent to the powerhouse. There are no prehistoric archaeological sites at the Project, nor in this Zone of Effect. The only project recreation site located within this Zone of Effect is the canoe portage trail.

3.0 LIHI CERTIFICATION CRITERION

3.1 ECOLOGICAL FLOWS

The stated Low Impact Hydropower Institute goal for Criterion A – Ecological Flow Regimes is, "The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources." A discussion of the applicable standards by Zone of Effect is provided in the Sections below.

3.1.1 ZONE 1 - MEDWAY IMPOUNDMENT

Criterion	Standard	Supporting Information
A	**1** The facility operates in a true run-of-river operational mode and there are no bypassed reaches or water diversions associated with the facility	Not Applicable / De Minimis Effect: • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. • For impoundment zones only, explain water management (e.g., fluctuations, ramping, refill rates) and how fish and wildlife habitat within the zone is evaluated and managed.

The Medway impoundment is operated in accordance with the FERC license and Section 401 WQC to target a stable headpond by limiting impoundment fluctuations to 6 inches from the full pond elevation.

Brookfield's NSCC continuously monitors Medway Project operations, including impoundment elevations and flows through Medway Station and as discharged via the spillway, to maintain compliance with requirements for run-of-river operations and headpond elevations. Maintenance of stable headpond elevations assures compliance with run-of-river obligations. To maintain a stable headpond, inflows into the Medway Project to be passed downstream into the West Branch of the Penobscot River are monitored by the NSCC.

The Project operates under a FERC-approved Flow and Reservoir Level Monitoring Plan. Any deviations from run-of-river operations or minimum flow requirements at the Medway Project are reported to FERC as described above in Section 1.2. Because this Zone of Effect is operated in run-of-river mode with stable headpond elevations and inflows equal to outflows, Standard 1 applies.

3.1.2 ZONE 2 - MEDWAY BYPASS REACH

Criterion	Standard	Supporting Information
A	**2** The flow regime at the facility was developed in accordance with science-based resource agency recommendation	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to formal agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations). • Explain how flows are monitored for compliance.

There is no prescribed minimum flow into the bypass reach at the Project, because the powerhouse is integral with the dam, the bypass is very short, and it is backwatered by the tailrace. As such, all flows at the Project are passed such that inflows approximate outflows and a stable headpond is maintained, as discussed above and as required by the license. The Project operates under a Flow and Reservoir Level Monitoring Plan, as required by License Article 403 and Condition 1 of the Project WQC. As a result, Standard 2 applies for the Project's Bypass Reach Zone of Effect.

3.1.3 ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Criterion	Standard	Supporting Information
A	**2** The flow regime at the facility was developed in accordance with science-based resource agency recommendation	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required

Criterion	Standard	Supporting Information
		regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to formal agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations). • Explain how flows are monitored for compliance.

As discussed above, flows are discharged from Medway Station to the West Branch of the Penobscot River, which then converges with the East Branch of the Penobscot River a short distance downstream to form the mainstem of the Penobscot River. Flows are conveyed downstream of the Medway Project via the spillway or the Project's powerhouse or both. The NSCC monitors all discharges from the Project powerhouse and via spill at Medway Dam, pursuant to the FERC and agency-approved Flow and Reservoir Level Monitoring Plan. Any deviations from run-of-river operations at the Medway Project are reported to FERC as described above in Section 1.2. Due to these operations, Standard 2 applies for Zone 3.

3.2 WATER QUALITY

The stated Low Impact Hydropower Institute goal for Criterion B – Water Quality is, "Water quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions." A discussion of the applicable standards by Zone of Effect is provided in the Sections below.

The West Branch of the Penobscot River inclusive of Medway Project waters is Class B. According to Maine statute, Class B waters must be suitable for the following designated uses: drinking water supply after treatment, fishing, agriculture, recreation in and on the water, industrial process and cooling water supply, hydroelectric power generation, navigation, and as habitat for fish and other aquatic life.

The water quality standards for Class B waters require that dissolved oxygen (DO) be maintained at not less than 7 parts per million (ppm) or 75 percent saturation, whichever is higher, except that for the period from October 1 to May 14, when the 7-day mean DO concentration must not be less than 9.5 ppm and the 1-day minimum DO concentration must not be less than 8.0 ppm in identified spawning areas in order to ensure spawning and egg incubation of indigenous fish species. MDEP historically conducted ambient water quality sampling in the West Branch with all DO readings in attainment. Water quality monitoring conducted by the PIN as part of the 2019 water quality classification upgrade indicated that Project waters are in compliance.

Class B water quality standards also include numeric criteria for Escherichia coli. The standard requires that waters "maintain the level of Escherichia coli bacteria of human and domestic animal origin below a geometric mean of 64 CFU per 100 milliliters or an instantaneous level of 236 CFU per 100 milliliters."

According to MDEP's 2016 Integrated Water Quality and Assessment Report (305(b) report) and 303(d) list to the U.S. Environmental Protection Agency, the West Branch of the Penobscot River from Millinocket Stream to the confluence downstream of Medway is classified by MDEP as a Category 4B water— Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment—as a result of Nutrient/Eutrophication Biological Indicators and DO, which are not influenced or caused by Project operations. Both impairments are attributed to discharges from the former paper mills in Millinocket and East Millinocket. The closure of the mills has resulted in attainment of Class B water quality standards, resulting in an upgrade in this river reach in 2019.

A letter from the MDEP documenting that the certification terms and conditions remain valid and in effect for the facility is provided in Section 7.0.

3.2.1 ZONE 1 - MEDWAY IMPOUNDMENT

Criterion	Standard	Supporting Information
B	**2** The facility is in compliance with all water quality conditions contained in a recent Water Quality Certification or science-based resource agency recommendation providing reasonable assurance that water quality standards will be met for all waterbodies that are directly affected by the facility. Such recommendations, whether based on a generally applicable water quality standard or one that was developed on a site-specific basis, must include consideration of all water quality components necessary to preserve healthy fish and wildlife populations, human uses and recreation.	Agency Recommendation: • Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

Water quality studies conducted as part of Project relicensing and subsequent water quality reclassification activities indicate that the water quality in the Medway impoundment meets Class B criteria. All designated uses, which are consistent between Class B and Class C, were deemed to have been met as outlined in the 1998 WQC and 2004 amendment to the WQC. Specific to aquatic habitat, this designated use was deemed to be met though run-of-river operations (stable impoundment elevations).

This section of the West Branch of the Penobscot River is not likely impaired as pollution control requirements likely result in attainment according to MDEP's 2016 305(b) report and 303(d) list.

3.2.2 ZONE 2 - MEDWAY BYPASS REACH

Criterion	Standard	Supporting Information
B	**2** The facility is in compliance with all water quality conditions contained in a recent Water Quality Certification or science-based resource agency recommendation providing reasonable assurance that water quality standards will be met for all waterbodies that are directly affected by the facility. Such recommendations, whether based on a generally applicable water quality standard or one that was developed on a site-specific basis, must include consideration of all water quality components necessary to preserve healthy fish and wildlife populations, human uses and recreation.	Agency Recommendation: • Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

As discussed in Section 3.1.3, any excess flows are passed into the bypass reach downstream of Medway Dam, and this channel is backwatered by the tailrace. DO monitoring as part of the 2019 water quality reclassification upgrade shows attainment of water quality standards (see Section 6.0).

This section of the West Branch of the Penobscot River is not likely impaired as a result of pollution controls according to MDEP's 2016 305(b) report and 303(d) list.

3.2.3 ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Criterion	Standard	Supporting Information
B	**2** The facility is in compliance with all water quality conditions contained in a recent Water Quality Certification or science-based resource agency recommendation providing reasonable assurance that water quality standards will be met for all waterbodies that are directly affected by the facility. Such recommendations, whether based on a generally applicable water quality standard or one that was developed on a site-specific basis, must include consideration of all water quality components necessary to preserve healthy fish and wildlife populations, human uses and recreation.	Agency Recommendation: • Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency). • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

As discussed above, the reach of the West Branch of the Penobscot River below Medway Dam is designated as Class B as the result of water quality reclassification efforts in 2019. All designated uses were deemed to have been met as outlined in the 1998 WQC and subsequent 2004 amendment (Class B and Class C have the same designated uses). Impairments were identified for this reach of the West Branch of the Penobscot River in the 2016 303(b) Report, as discussed above, but were related to E. coli and DO issues unrelated to Project operations that are now assumed to be resolved.

Any deviations from run-of-river operations at the Project are reported to FERC as described above in Section 1.2.

3.3 UPSTREAM FISH PASSAGE

The stated Low Impact Hydropower Institute goal for Criterion C – Upstream Fish Passage is "The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy, sustainable fish and wildlife resources in areas affected by the facility."

The West Branch of the Penobscot River is critical habitat for Atlantic salmon only upstream to the base of Medway Dam (see NMFS' 2012 Biological Opinion for the Lower Penobscot River, page 130). The river upstream of the dam is managed by the State of Maine for resident fish species, such as landlocked salmon, brook trout, and smallmouth bass, and no anadromous fish are present (see NMFS' 2012 Biological Opinion for the Lower Penobscot River, page 130). There is fish passage available at the downstream Penobscot River projects for diadromous fish, including American shad, river herring, American eel, and Atlantic salmon, though alosines are not yet known to pass Weldon Dam. There are upstream and downstream

eel passage facilities at the Medway Project, providing eels with access to areas above the dam on the West Branch, but documented eel numbers have been low at the Project.

Every 5 years, Black Bear is required by the Medway Project BiOp and FERC license to consult with NMFS, USFWS, PIN, MDIFW, and MDMR regarding the status of Atlantic salmon and other ESA-listed fishes in the Penobscot River to ensure that operation of the Medway Project is consistent with the listing determinations for such species and with the then-current recovery objectives for such species. In reply to the most recent 5-year consultation in 2018, NMFS stated that they were gathering information to further understand the potential significance of the West Branch in supporting Atlantic salmon recovery in advance of the potential relicensing of the Medway Project in 2029. NMFS also stated its confirmation that Black Bear had satisfied its license obligations regarding the 5-year consultation for ESA-listed species (see Section 7.0). No other comments were received.

3.3.1 ZONE 1 – MEDWAY IMPOUNDMENT

Criterion	Standard	Supporting Information
C	**1** The facility does not create a barrier to upstream passage, or there are no migratory fish in the vicinity of the facility. If migratory fish were present historically, the facility did not contribute to the extirpation of such species	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Currently, the only anadromous species present in the West Branch of the Penobscot River below Medway Dam is Atlantic salmon, based on fish passage observations at the downstream Mattaceunk Project. There are no anadromous fish species, including Atlantic salmon, upstream of Medway Dam nor in the Medway impoundment. The Medway impoundment, however, does not present an impediment to passage upstream of the dam.

An upstream eel passage facility was installed at Milford Dam in June 2004, providing upstream migratory connectivity for American eels. The eel ladder is located in the sluice and is constructed of steel with substrate (see Figure 2 and Figure 3). There are no other upstream migrating anadromous fish species in this reach, as there are intentionally no upstream fish passage facilities at the Project. The lower West Branch of the Penobscot River is within historical habitat for Atlantic salmon and is designated as critical habitat downstream of Medway Dam, but not within this impoundment Zone of Effect.

As required by the Medway Project BiOp and FERC license, Black Bear consults with resource agencies and PIN every 5 years to ensure that operation of the Medway Project is consistent with recovery objectives for ESA-listed species on the Penobscot River. To date, these consultations and restoration plans for Atlantic salmon and other species have not required passage of these species above Medway Dam, and the West Branch of the Penobscot River continues to be managed for resident fish species. As discussed in the Medway Project BiOP, "The West Branch above the Medway Project is managed by the State of Maine for resident fishes and catadromous eels". Thus, requirements to pass anadromous fish species at the Medway Dam are not anticipated in the near future.

Fish passage facilities, studies, and fish protection provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Fish passage information, plans and studies are likewise provided in Section 6.0.

3.3.2 ZONE 2 – MEDWAY BYPASS REACH

Criterion	Standard	Supporting Information
C	**2** The facility is in compliance with science-based fish passage recommendations issued by appropriate resource agency(ies) for the facility and which may include provisions for appropriate monitoring and effectiveness determinations.	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

Currently, the only anadromous species present in the West Branch of the Penobscot River below Medway Dam is Atlantic salmon, based on fish passage observations at the downstream Mattaceunk Project. As outlined in the BiOP, the West Branch of the Penobscot River is within historical habitat for Atlantic salmon and is designated as critical habitat to the base of Medway Dam, including within this Zone of Effect.

An upstream eel passage facility was completed at the Medway Project in 2004; this structure is located between the spillway and the downstream eel bypass slot within the Medway Bypass Reach Zone of Effect, and it is seasonally installed. The entrance of the eel passage starts at the base of the downstream eel bypass slightly below the tailrace elevation,

then traverses up the dam and exits into the head pond at an elevation above the full pond elevation (so as not to be influenced by headwater fluctuations). The eel passage structure is approximately 1.5 feet wide and 30 feet long, and follows the slope of the downstream fishway from the entrance to the exit. The eel passage floor contains an ABS vacuum molded pegged substrate that provides a climbing substrate for the eels and refuge from high velocity flows.

Other than the eel passage, upstream fish passage is not provided at the Medway Project. As required by the Medway Project BiOp and FERC license, Black Bear consults with resource agencies and PIN every 5 years to ensure that operation of the Medway Project is consistent with recovery objectives for ESA-listed species on the Penobscot River. To date, these consultations and restoration plans for Atlantic salmon and other species have not required passage of these species above Medway Dam, and the West Branch of the Penobscot River continues to be managed for resident fish species. Thus, requirements to pass anadromous fish species at the Medway Dam are not anticipated in the near future.

Fish passage facilities, studies, and fish protection provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Fish passage information, plans and studies are likewise provided in Section 6.0.

3.3.3 ZONE 3 – MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Criterion	Standard	Supporting Information
C	**2** The facility is in compliance with science-based fish passage recommendations issued by appropriate resource agency(ies) for the facility and which may include provisions for appropriate monitoring and effectiveness determinations.	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

As with the Zone 2, the only anadromous species currently present in the West Branch of the Penobscot River below Medway Dam is Atlantic salmon, based on fish passage observations at the downstream Mattaceunk Project. The West Branch of the Penobscot River is within historical habitat for Atlantic salmon and is designated as critical habitat to the base of Medway Dam, including within this Zone of Effect.

Other than the eel passage, upstream fish passage is not provided at the Medway Project. As required by the Medway Project BiOp and FERC license, Black Bear consults with resource agencies and PIN every 5 years to ensure that operation of the Medway Project is consistent with recovery objectives for ESA-listed species on the Penobscot River. To date, these consultations and restoration plans for Atlantic salmon and other species have not required passage of these species above Medway Dam, and the West Branch of the Penobscot River continues to be managed for resident fish species. Thus, requirements to pass anadromous fish species at the Medway Dam are not anticipated in the near future.

Fish passage facilities, studies, and fish protection provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Fish passage information, plans, and studies are likewise provided in Section 6.0.

3.4 DOWNSTREAM FISH PASSAGE

The stated Low Impact Hydropower Institute goal for Criterion D – Downstream Fish Passage is "The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, 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 the areas affected by the facility."

As discussed elsewhere, the West Branch of the Penobscot River below Medway Dam is critical habitat for Atlantic salmon, but they are the only anadromous species currently present in the West Branch of the Penobscot River below Medway Dam (based on fish passage observations at the downstream Mattaceunk Project). There is a downstream eel passage facility at the Medway Project (see Figure 2), but there are no upstream or downstream fish passage facilities for anadromous fish. As shown in Table 1, the clear rack spacing at the Medway Project is 2 ¾ inches.

While eel passage effectiveness testing of the downstream passage facility is required by the license, these studies had not been conducted to date, because an insufficient number of eels had historically been caught which would not provide a statistically significant assessment of downstream passage routes. A request to postpone evaluation for 5 years was approved by the Commission on March 27, 2007. A survey was conducted in 2012 to confirm whether an adequate number of migrating eels could be collected to conduct the downstream study, but only 6 were caught. Black Bear proposed to conduct empirical studies on the lower Penobscot River assets for downstream migrating eel that could be applied to the anticipated performance of the Medway Project. These studies were conducted in 2016 and 2017 using out of basin eels, and it was determined by the Commission that this would be an appropriate approach for the Medway Project, by letter dated September 26, 2019. The agency-approved Study Plan for Evaluating American Eel Downstream Passage at the Medway Project was filed with the Commission on June 15, 2020 (see Section 6.5.3).

3.4.1 ZONE 1 – MEDWAY IMPOUNDMENT

Criterion	Standard	Supporting Information
D	**2** The facility is in compliance with science-based resource agency recommendation for downstream fish passage or fish protection, which may include provisions for appropriate monitoring and effectiveness determinations.	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

There are currently no diadromous fish species present in the West Branch of the Penobscot River and in the Medway impoundment, save for the catadromous American eel. Upstream fish passage facilities are not required at the Medway Project for anadromous species, so these species (Atlantic salmon, American shad, blueback herring, and alewife) do not traverse into the Medway impoundment, nor move downstream from upstream reaches. While this reach of the West Branch of the Penobscot River is within historical habitat for Atlantic salmon, it is not designated as critical habitat.

As required by the Medway Project BiOp and FERC license, Black Bear consults with resource agencies and PIN every 5 years to ensure that operation of the Medway Project is consistent with recovery objectives for ESA-listed species on the Penobscot River. To date, these consultations and restoration plans for Atlantic salmon and other species have not required passage of these species above Medway Dam, and the West Branch of the Penobscot River continues to be managed for resident fish species. Thus, requirements to pass anadromous fish species at the Medway Dam are not anticipated in the near future.

Fish passage facilities, studies, and fish passage provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Extensive fish passage information, plans and studies are likewise provided in Section 6.0.

3.4.2 ZONE 2 – MEDWAY BYPASS REACH

Criterion	Standard	Supporting Information
D	**2** The facility is in compliance with science-based resource agency recommendation for downstream fish passage or fish protection, which may include provisions for appropriate monitoring and effectiveness determinations.	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented. • Provide evidence that required passage facilities are being operated and maintained as mandated (e.g. meets season, coordination with agencies)

Currently, the only anadromous species present in the West Branch of the Penobscot River below Medway Dam is Atlantic salmon, based on fish passage observations at the downstream Mattaceunk Project. Upstream fish passage facilities are not required at the Medway Project for anadromous species, so these species (Atlantic salmon, American shad, blueback herring, and alewife) do not migrate upstream of Medway Dam for subsequent downstream migration, nor move downstream from upstream reaches. The West Branch of the Penobscot River is within historical habitat for Atlantic salmon and is designated as critical habitat downstream of Medway Dam.

The Medway Project has a downstream eel passage facility located between the spillway and log sluice sections of Medway Dam (see Figure 2). The downstream eel passage consists of a sluice gate, which was retrofitted with a 3-foot wide by 6-foot tall bellmouth weir and flume that were initially installed in 2000. The bypass entrance is located at the end of the spillway adjacent to the forebay. The weir constricts down to a 5-inch opening, can pass approximately 15 cfs of flow, and sits in the top portion of the water column. The bypass reach receives flows from the downstream eel passage facility, and the powerhouse backwaters to the very short reach downstream of the dam. Flows in excess of station and gate capacity are likewise spilled into the bypass reach.

As required by the Medway Project BiOp and FERC license, Black Bear consults with agencies and PIN every 5 years to ensure that Project operations are consistent with recovery objectives for ESA-listed species on the Penobscot River. To date, these consultations and restoration plans for Atlantic salmon and other species have not required their passage above Medway Dam, and the West Branch of the Penobscot River continues to be managed for

resident fish species. Thus, requirements to pass anadromous fish species at the Medway Dam are not anticipated in the near future.

Fish passage facilities, studies, and fish protection provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Fish passage information, plans and studies are likewise provided in Section 6.0.

3.4.3 ZONE 3 – MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Criterion	Standard	Supporting Information
D	**1** The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility;. If migratory fish were present historically, the facility did not contribute to the extirpation of such species; the facility does not contribute adversely to riverine fish populations or to their access to habitat necessary for the completion of their life cycles .	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the species populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of fish species requiring passage in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Fish passage conditions in the Project tailrace are the same as in the bypass reach Zone 2, discussed above, except the tailrace flows into the downstream river reach which provides unimpeded access for downstream migrants until they encounter Weldon Dam. Fish passage facilities, studies, and adaptive management provisions are included in the Project's Settlement Agreement, BiOp, and FERC License (see Section 6.0). Fish passage information, plans and studies are likewise provided in Section 6.0.

3.5 SHORELINE AND WATERSHED PROTECTION

The stated Low Impact Hydropower Institute goal for Criterion E – Shoreline and Watershed Protection is "The facility has demonstrated that sufficient action has been taken to protect, mitigate or enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility."

Criterion	Standard	Supporting Information
E	**1** There are no lands associated with the facility under the direct or indirect ownership or control of the facility owner that have been identified as having significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and the facility is not subject to any Shoreline Management Plan (SMP) or similar protection plan.	Not Applicable/De Minimis Effect • If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for protected species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility

The current project boundary encloses the dam and powerhouse and follows the reservoir up to the 260.3 ft NGVD (normal full pond) elevation (see Exhibit G in Figure 6 and Section 6.0). There are no shoreline lands along the impoundment, save for a small parcel upstream of the powerhouse that includes the egress of the canoe portage trail. Immediately adjacent to the powerhouse, the canoe portage ingress and the trail are located on lands outside of the project boundary.

Black Bear's ownership is limited to those lands within the project boundary which generally house the project structures. Therefore, Black Bear only has the ability to manage the limited shoreline and submerged lands below the corresponding full pond elevation for the Project. Several state laws and local regulations are designed to manage land development in the vicinity of the project area in accordance with certain objectives. Any development or ground disturbance on private lands adjacent to the Project requires the appropriate permits and must adhere to the design and development standards of the appropriate town zoning regulations. The Project is not required to have a Shoreline Management Plan, pursuant to its FERC license and amendments (see Section 6.0). As shown below in Figure 11, lands to the north of the project boundary are largely the developed areas of downtown Medway, road networks, and industrial sites, such as the municipal waste water treatment plant. Some forested areas exist to the south of the project boundary, but they are actively managed for timber harvesting and are bifurcated by roads and transmission lines. As discussed above, critical habitat for Atlantic salmon is not present in the West Branch of the Penobscot River.

FIGURE 11 AERIAL VIEW OF ADJACENT LANDS

3.6 THREATENED AND ENDANGERED SPECIES

The Low Impact Hydropower Institute goal for Criterion F – Threatened and Endangered Species Protection is, "The facility does not negatively impact federal or state listed species".

An Information for Planning and Consultation (IPaC) report and USFWS Official Species List were developed for the Project, and they are provided in Section 7.0. The following federally-listed Endangered or Threatened species may be present in the Project vicinity: Canada Lynx (which are not affected by the Project, as there are no habitats or significant lands within the project boundary); Northern Long- Eared Bat (NLEB) (Threatened; for which a Final Section 4(d) rule has been published for activities that may affect the species for streamlined consultation); and Atlantic salmon (Endangered; which are documented as historically occupying the West Branch of the Penobscot River and for which critical habitat has been designated in the Project vicinity downstream of the dam). In 2012, NMFS' issued a Biological Opinion for the Atlantic salmon at the Medway Project (see Section 6.5.4).A Maine Natural Areas Program (MNAP) Project Review was provided on October 19, 2020. MNAP identified no rare botanical features within the Project area. In accordance with information received from the MDIFW, the following state-listed species potentially occur within the project boundary.

- 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)

In addition, the state threatened brook floater has been identified in the Project vicinity though not specifically in the Project boundary.

The discussion of the effects of the Project on listed species, and the applicable standards, vary by each species, but they are consistent within the Zones of Effect. As such, this Criterion is discussed by species collectively for all Zones of Effect.

3.6.1 TERRESTRIAL SPECIES

Criterion	Standard	Supporting Information
F	**2** There are or may be listed species in the facility area, but the facility has been found by an appropriate resource management agency to have no negative effect on them, or habitat for the species does not exist within the facility's affected area or is not impacted by facility operations.	Finding of No Negative Effects: • Identify all federal and state listed species that are or may be in the immediate facility area based on current data from the appropriate state and federal natural resource management agencies. • Provide documentation that there is no demonstrable negative effect of the facility on any listed species in the area from an appropriate natural resource management agency or provide documentation that habitat for the species does not exist within the ZoE or is not impacted by facility operations.

Routine project operations are not anticipated to affect terrestrial species such as bats and Canada lynx. There may be periodic vegetation clearing for dam safety, access, and other purposes, but these would be conducted in accordance with the Section 4(d) rule for NLEB using the USFWS's streamlined consultation process. These activities would also be extremely limited, given how little land is located within the project boundary. As such, no negative effects are anticipated by this periodic activity.

3.6.2 AQUATIC SPECIES

Criterion	Standard	Supporting Information
F	**3** The facility is in compliance with relevant conditions in a species recovery plan, with relevant conditions in an incidental take permit or statement, biological opinion, habitat conservation plan, or similar government document and the incidental take document and/or biological opinion issued relevant to the facility was designed to be a long-term solution for protection of the listed species.	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

On June 19, 2009, the USFWS and NMFS issued their final rule designating both naturally spawned and conservation hatchery populations of anadromous Atlantic salmon as endangered in the state of Maine. A final rule issued by NMFS on August 10, 2009 designates critical habitat for the DPS (Distinct Population Segment) of Atlantic salmon inhabiting portions

of the Penobscot River watershed, including the lowermost portion of the West Branch of the Penobscot River upstream to Medway Dam.

The Lower Penobscot River Multi-party Settlement Agreement (Settlement Agreement or MPA) was filed with the FERC on June 25, 2004 as part of the Penobscot River Restoration Project (Restoration Project). The wide-ranging Settlement Agreement was intended to restore native sea-run fish and their habitat, while also providing the opportunity to maintain comparable hydropower production from the river. The purpose of the Restoration Project was to provide improved access for all species of migratory fish that are present now or may have historically occurred in the Penobscot River, including Atlantic salmon, American shad, alewife, blueback herring, striped bass, Atlantic sturgeon, shortnose sturgeon, rainbow smelt, sea lamprey, Atlantic tomcod, and American eel.

FERC issued an order on February 21, 2013 for the Medway Project that incorporated the portions of the Atlantic salmon SPP and BiOp associated with the Project (including an Atlantic Salmon Passage Study Plan) into the Project's FERC license. The SPP was developed as part of the consultation process for the energy enhancements and fish passage measures that were incorporated into the respective licenses, pursuant to the Settlement Agreement discussed above.

While brook floater have been identified as within the vicinity of the Project, they have not been specifically identified within the project impoundment. Run of river operations ensures stable headpond elevation for the support of mussel species.

3.7 CULTURAL AND HISTORIC RESOURCES

The stated Low Impact Hydropower Institute goal for Criterion G – Cultural and Historic Resource Protection is "The facility does not unnecessarily impact cultural or historic resources that are associated with the facility's lands and waters, including resources important to local indigenous populations, such as Native Americans."

Criterion	Standard	Supporting Information
G	**2** The facility is in compliance with approved state, federal, and recognized tribal plans for protection, enhancement, or mitigation of impacts to cultural or historic resources affected by the facility.	Approved Plan: • Provide documentation of all approved state, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility. • Document that the facility is in compliance with all such plans.

The MHPC, as part of the Project relicensing and 2005 amendment, reported that there are no properties in the Medway Project area of prehistoric, historic, architectural, or archaeological significance that would be adversely affected by Project operations. There is no requirement in the Medway Project license for a Programmatic Agreement, and a CRMP is not expressly required as no culturally significant properties have been identified.

Article 406 of the Project license requires Black Bear to consult with the SHPO if any archaeological or cultural sites are discovered during ground-disturbing or land clearing activities to determine if a CRMP is required. Black Bear will take appropriate measures as defined in the Article 406 of the Medway License should new properties be discovered as discussed in Section 1.4. No ground-disturbing or land clearing activities have been conducted at the Project since the Project was last certified by LIHI in 2015.

3.8 RECREATIONAL RESOURCES

The stated Low Impact Hydropower Institute goal for Criterion H – Recreation Resources is "The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge."

Article 407 of the Medway Project license requires the licensee to implement its recreation plan. The only Project recreational facilities at the Medway Project are the impoundment boat launch and the canoe portage trail. The canoe portage trail was completed in 1995, and documentation of completion was filed with FERC on June 28, 1996. There are no specific recreation monitoring requirements at the Medway Project, other than those associated with the discontinued FERC Form 80 process.

The Medway Project is also subject to the requirements of Part 8, including safety signage. Inspections of Part 8 signs are scheduled annually at the start of the recreation season, and signs are replaced, as necessary.

3.8.1 ZONE 1 - MEDWAY IMPOUNDMENT

Criterion	Standard	Supporting Information
H	**2** The facility demonstrates compliance with resource agency recommendations for recreational access or accommodation (including recreational flow releases), or any enforceable recreation plan in place for the facility.	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

A boat launch is located on the north shore of the Project impoundment approximately 200 feet upstream of the Project boater barrier. A gravel roadway provides access to the launch, and several parking spaces are provided.

Black Bear also maintains a portage trail around Medway Dam with take-out at the impoundment boat launch and a put-in immediately downstream of the Medway powerhouse. The canoe portage trail is accessible from the water or from the gravel roadway that access the boat launch.

A boater barrier is deployed annually upstream of Medway Dam for public safety purposes.

3.8.2 ZONE 2 - MEDWAY BYPASS REACH

Criterion	Standard	Supporting Information
H	**1** The facility does not occupy lands or waters to which the public can be granted safe access and does not otherwise impact recreational opportunities in the vicinity of the facility.	Not Applicable / De Minimis Effect: Document that the facility does not occupy lands or waters to which public access can be granted and that the facility does not otherwise impact recreational opportunities in the facility area

There are no formal recreation facilities within this bypass reach Zone of Effect, and public access is prohibited for safety reasons.

3.8.3 ZONE 3 - MEDWAY PROJECT TAILRACE/DOWNSTREAM REGULATED RIVER REACH

Criterion	Standard	Supporting Information
H	**2** The facility demonstrates compliance with resource agency recommendations for recreational access or accommodation (including recreational flow releases), or any enforceable recreation plan in place for the facility.	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

This Zone of Effect can be accessed via the ingress of the Medway Project canoe portage trail or by water from access points downstream on the mainstem and East Branch of the Penobscot River.

4.0 SWORN STATEMENT AND WAIVER FORM

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of Black Bear Hydro Partners, LLC, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

Company Name: Black Bear Hydro Partners, LLC

Authorized Representative:

Name: Thomas Uncher

Title: VP, Operations

Authorized Signature: TU

Date: 11/23/20

5.0 CONTACTS FORM

5.1 APPLICANT RELATED CONTACTS

Facility Owner: Black Bear Hydro Partners, LLC	
Name and Title	Tom Uncher, Vice President
Company	Brookfield Renewable
Phone	518-743-2018
Email Address	Tom.Uncher@brookfieldrenewable.com
Mailing Address	150 Main St. Lewiston Maine 04240
Facility Operator (if different from Owner):	
Name and Title	James Cole, Senior Operations Manager
Company	Brookfield Renewable
Phone	207-723-4341 Ext, 127
Email Address	James.Cole@brookfieldrenewable.com
Mailing Address	1024 Central Street, Millinocket, Maine 04462
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Kelly Maloney; Manager, Compliance - Northeast
Company	Brookfield Renewable
Phone	(207) 755-5606
Email Address	Kelly.Maloney@brookfieldrenewable.com
Mailing Address	150 Main Street, Lewiston, Maine 04240
Party responsible for accounts payable:	
Name and Title	Judith Charette Manager, Accounts Payable, Finance & Accounting
Company	Brookfield Renewable
Phone	819-561-8099
Email Address	Judith.charette@brookfieldrenewable.com
Mailing Address	41 Victoria, Gatineau, QC, Canada J8X2A1

5.2 CURRENT AND RELEVANT STATE, FEDERAL, AND TRIBAL RESOURCE AGENCY CONTACTS WITH KNOWLEDGE OF THE FACILITY

Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources _x_, Recreation __):	
Agency Name	Advisory Council on Historic Preservation
Name and Title	John M Fowler, Executive Director
Phone	202-517-0200
Email address	jfowler@achp.gov
Mailing Address	401 F Street N.W. Suite 308 Washington, DISTRICT OF COLUMBIA 20001-2637
Agency Contact (Check areas of responsibility: Flows__, Water Quality _x_, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Maine Department of Environmental Protection
Name and Title	Nick Livesay, Director
Phone	207-530-0965
Email address	Nick.Livesay@maine.gov
Mailing Address	Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _x_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	National Marine Fisheries Service
Name and Title	Jeff Murphy; Penobscot SHRU
Phone	(207) 866-7379
Email address	Jeff.Murphy@noaa.gov
Mailing Address	Maine Field Station, 17 Godfrey Drive, Medway, Maine 04473
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Maine Department of Environmental Protection
Name and Title	Kathy Davis Howatt, Hydropower Coordinator
Phone	207-446-2642
Email address	kathy.howatt@maine.gov
Mailing Address	Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _x_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Maine Department of Inland Fisheries and Wildlife
Name and Title	Kevin Dunham, Regional Fisheries Biologist
Phone	207-732-4131
Email address	Kevin.Dunham@maine.gov
Mailing Address	16 Cobb Road, Enfield, Maine 04493
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Maine Dept. of Agriculture, Conservation & Forestry
Name and Title	Kathleen Leyden, Director
Phone	207-287-5254
Email address	Kathleen.Leyden@maine.gov
Mailing Address	93 State House Station, Augusta, Maine 04333-0038

Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources _x_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Maine Department of Marine Resources
Name and Title	Gail Wippelhauser, Marine Resources Scientist
Phone	207-624-6349
Email address	gail.wippelhauser@maine.gov
Mailing Address	21 State House Station, Augusta, Maine 04333
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources _x_, Recreation __):	
Agency Name	Maine Historic Preservation Commission
Name and Title	Kirk Mohney; Director
Phone	(207) 287-3811
Email address	Kirk.Mohney@maine.gov
Mailing Address	55 Capitol Street, 65 State House Station, Augusta, Maine 04333
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds _x_, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	U.S. National Park Service
Name and Title	Kevin Mendik, ESQ. NPS Hydro Program Coordinator
Phone	617-223-5299
Email address	kevin_mendik@NPS.gov
Mailing Address	15 State Street 10th floor, Boston, Massachusetts 02109
Agency Contact (Check areas of responsibility: Flows_x_, Water Quality __, Fish/Wildlife Resources _x_, Watersheds _x_, T/E Spp. _x_, Cultural/Historic Resources __, Recreation __):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Anna Harris, Project Leader
Phone	(207) 902-1567
Email address	Anna_harris@fws.gov
Mailing Address	306 Hatchery Road, East Orland, Maine 04431
Agency Contact (Check areas of responsibility: Flows_x_, Water Quality __, Fish/Wildlife Resources _x_, Watersheds _x_, T/E Spp. _x_, Cultural/Historic Resources X__, Recreation __):	
Agency Name	U.S. Bureau of Indian Affairs
Name and Title	Harold Peterson
Phone	(615) 564-6838
Email address	Harold.peterson@bia.gov
Mailing Address	Eastern Regional Office, 545 Marriott Dr, Suite 700, Nashville, TN 37214

5.3 CURRENT STAKEHOLDER CONTACTS THAT ARE ACTIVELY ENGAGED WITH THE FACILITY

Stakeholder Contact (Check areas of interest: Flows__, Water Quality __, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources _, Recreation __):	
Stakeholder Organization	Penobscot Indian Nation
Name and Title	Dan McCaw, Fisheries Biologist
Phone	207-817-7377
Email address	Dan.McCaw@penobscotnation.org
Mailing Address	12 Wabanaki Way, Indian Island, ME 04468
Stakeholder Contact (Check areas of responsibility: Flows_X_, Water Quality __, Fish/Wildlife Resources __, Watersheds _X_, T/E Spp. __, Cultural/Historic Resources __, Recreation _X_):	
Stakeholder Organization	Penobscot Indian Nation
Name and Title	John Banks, Director, Department of Natural Resources
Email address	John.Banks@penobscotnation.org
Phone	207-817-7330
Mailing Address	12 Wabanaki Way, Indian Island, ME 04468
Stakeholder Contact (Check areas of interest: Flows_X_, Water Quality _X_, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Stakeholder Organization	Penobscot Indian Nation
Name and Title	Dan Kusnierz; Water Resources Program Manager
Phone	207-817-7361
Email address	Dan.Kusnierz@penobscotnation.org
Mailing Address	12 Wabanaki Way, Indian Island, ME 04468

6.0 FERC AND REGULATORY INFORMATION

Major license and compliance documents are provided in hyperlinks below. Compliance and resource relevant filings for the current certification period (2015 – 2020) are also hyperlinked below.

6.1 FERC LICENSE AND AMENDMENT ORDERS

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13187259 - Order amending license to incorporate terms and conditions under the Endangered Species Act and requiring periodic consultation re Black Bear Hydro Partners, LLC under P-2666.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10498863 - Order modifying and approving amendment of license re PPL Maine, LLC's Medway Project under P-2666.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=3154357 - Order issuing new license re Bangor Hydroelectric Co's Medway Hydroelectric Proj-2666.

6.2 WATER QUALITY CERTIFICATION, AMENDMENTS, AND REPORTS

- https://www.maine.gov/dep/water/monitoring/classification/reclassification.html - Water Quality Re-classification Initiative (including water quality monitoring reports)
- https://www.maine.gov/dep/water/monitoring/classification/reclass/BEP_2018_ReclassProposals_ForBEP_Dec_final.pdf - 2016 Water Quality Monitoring Report for the State of Maine
- Water Quality Certifications are inherent to the respective licenses and amendments; Section 401 Water Quality Certifications for the Project are also provided in Section 7.0.

6.3 SETTLEMENT AND OTHER AGREEMENTS

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10188480 - PPL Maine , LLC's et al submittal of the Lower Penobscot River Basin Comprehensive Settlement Accord with Explanatory Statement under P-2403 et al.

6.4 PERMITS

- None.

6.5 COMPLIANCE PLANS AND MONITORING REPORTS

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15090380 - Environmental Inspection Report by the FERC New York Regional Office for the Medway Project conducted on September 26, 2018 under P-2666.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12439893 - Environmental Inspection Report re Black Bear Hydro LLC's Project inspection conducted on July 29, 2010 under P-2666.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=9021892 - Penobscot Hydro, LLC submits Flow & Reservoir Level Monitoring Plan re Medway Hydroelectric Proj-2666.

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=3186604 – Order Modifying and Approving Flow and Reservoir Level Monitoring Plan

- Other Plans and Reports are provided by resource below.

6.5.1 Ecological Flows and Water Quality

- https://www.maine.gov/dep/water/monitoring/classification/PIN-ReclassificationProposals-20171129.pdf - Penobscot Indian Nation Water Quality Monitoring Reports in support of the reclassification of the Penobscot River, 2017
- https://www.maine.gov/dep/water/monitoring/classification/DEP_2018_ReClassProposals.pdf - Maine Department of Environmental Protection 2018 Re-Classification Proposals
- Other documents related to Water Quality provided above and in Section 7.0.

6.5.2 Shoreline and Watershed Protection

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10636661 - PPL Maine, LLC submits an update of the Exhibit G Drawing re Medway Hydro Project, pursuant to FERC's 4/18/05 Order under P-2666.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10757975 - Order approving revised Exhibit G Drawing re PPL Maine LLC's Medway Hydroelectric Project under P-2666.

6.5.3 Fish Passage

- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15558527 - 20200615 Medway; Article 405; Study Plan for Evaluating American Eel Downstream Passage under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=15363060 - Letter to Black Bear Hydro Partners, LLC discussing the 04/10/2019 filing re American eel passage requirements at the Medway Hydroelectric Project under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=15221976 - Medway Project 2666, Article 405; Update on American Eel Passage under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=14279623 - Order Suspending American Eel Passage and Effectiveness Monitoring pursuant to Article 405 re Black Bear Hydro Partners, LLC under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=14254699 - Letter acknowledging Black Bear Hydro Partners, LLC's 3/31/16 filing of an American Eel Upstream and Downstream Passage update for the Medway Hydroelectric Project under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=14254462 - 20160523 Medway Project 2666; Request to Discontinue American Eel Upstream Monitoring under P-2666.

- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=14186167 - Black Bear Hydro Partners, LLC 20160331 Medway Project 2666; Update on American Eel Upstream and Downstream Passage.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=13495940 - Black Bear Hydro Partners, LLC Update on Silver Eel Collection Efforts Medway Hydroelectric Project under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=13242495 - Letter order accepting Black Bear Hydro Partners, LCC's 4/2/13 filing of the Silver American Eel Study Report re the Medway Hydroelectric Project under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=13233752 - Letter to Black Bear Hydro Partners LLC acknowledging the receipt of your American Eel upstream fish passage evaluation report under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=13223592 - Black Bear Hydro Partners LLC submits the Silver American Eel Study Report for the Medway Hydro Project under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=13218012 - P-2666 Medway American Eel Upstream Fish Passage Evaluation Report 2010-2012 Activities.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=12980691 - Order amending schedule for filing of the downstream eel passage effectiveness assessment report re PPL Maine, LLC under P-2666.
- https://elibrary-backup.ferc.gov/idmws/common/opennat.asp?fileID=12263782 – Black Bear Hydro Partners, LLC submits American Eel Upstream Fish Passage Evaluation Report, 2007-2009 Activities for Medway Hydro Project-2666.

6.5.4 THREATENED AND ENDANGERED SPECIES

- IPAC Report (attach at the end of the section and cross reference)
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13057314 - Us National Marine Fisheries Service submits Biological Opinion re the Endangered Species Act Section 7 formal consultation for the Stillwater Hydroelectric Project et al under P-2712 et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13057314 - Issuance of National Marine Fisheries Service submits its Biological Opinion Section 7(a)(2) of the Endangered Species Act Consultation for the Stillwater, Medway, Milford, West Enfield, and Medway Hydroelectric Project under P-2712, et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14423136 - Letter acknowledging receipt of Black Bear Hydro Partners LLC's Atlantic Salmon Species Protection Plan 2015 Annual Report and 2016 Proposed Activities for the Milford Project et al under P-2534 et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14083156 - Brookfield Renewable Energy Group submits the Incidental Take Annual Report - Milford Project 2534; West Enfield Project 2600; Medway Project 2666; Orono Project 2710; and Stillwater Project 2712.

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14262864 - 20160531 Atlantic Salmon Species Protection Plan - 2015 Annual Report Medway, Stillwater, Milford, West Enfield and Medway under P-2666, et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14456203 - Brookfield Renewable submits the Incidental Take Annual Report for Project: Milford 2534, West Enfield 2600, Orono 2710, Medway 2666 and Stillwater 2712.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14532197 - 20170327 Atlantic Salmon Species Protection Plan - 2016 Annual Report for Hydroelectric Project Milford P-2534, West Enfield P-2600, Medway P-2666, Orono P-2710 and Stillwater P-2712
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14787572 - 20171229 Incidental Take Annual Report; Milford, West Enfield, Medway, Orono and Stillwater
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14847746 - 20180323 Atlantic Salmon Species Protection Plan - 2017 Annual Report for FERC Project 2710, 2712, 2534, 2600 and 2666
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15130476 - 20181228 - 2018 Penobscot River Incidental Take Annual Report Milford, West Enfield, Medway, Orono and Stillwater
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15195815 - 20190326 Atlantic Salmon Species Protection Plan - 2018 Annual Report for FERC Project Nos. 2710, 2712, 2534, 2600 and 2666 (Orono, Stillwater, Milford, West Enfield and Medway)
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15433261 - Brookfield Renewable submits the 2019 Penobscot River Incidental Take Report for the Milford Project et al under P-2534 et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15488596 - 20200320 Atlantic Salmon Species Protection Plan - 2019 Annual Report for FERC Project Milford 2534, West Enfield 2600, Medway 2666, Orono 2710 and Stillwater 2712
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12910595 - Application to Amend Licenses of Black Bear Hydro Partners, LLC under P-2600, et. al.

6.5.5 Cultural and Historic Resources

- None.

6.5.6 Recreational Resources

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=9683720 - PPL Maine, LLC submits Licensed Hydropower Development Recreation Report, pursuant to 18 CFR 8.11 for the Ellsworth Proj-2727 et al.
- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=11974185 - FPL Maine, LLC et al submits licensed hydropower development recreation report (Form 80) under P-2727 et al.

- https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13828463 - 2015 FERC Form 80 Recreation Report Monitoring - Filing of Methodology under P-4026 et.al.

6.6 LICENSE AND CERTIFICATION COMPLIANCE

- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15616413 – 20200902 Medway Project; Planned Run of River and Water Level Modifications under P-2666.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15625004 – September 17, 2020 Letter informing Brookfield Renewable that the deviations from the run-of-river operation and impoundment elevation requirements will not be considered violations of Article 402 for the Medway Project under P-2666.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15592350 - 20200729 Medway Project; Planned Run of River and Water Level Modifications for Maintenance under P-2666.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15280153 - 20190621 Medway Project 2666; Run of River and Water Level Modifications due to Flashboard Damage and Repairs
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15318695 – July 31, 2019 Letter informing Black Bear Hydro Partners, LLC et al that the deviations that occurred 1/28 through 6/6/19 at the Medway Project and 6/8 and 6/15/19 at the Penobscot Mills Project will not be considered violations of Article 402 etc. under P-2666 et al.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14952044 - 20180619 Medway Run of River and Water Level Modifications due to Flashboard Damage and Repairs
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14970521 – July 12, 2018 Letter to Black Bear Partners, LLC re the Run-of-River and Impoundment Level Modifications for the Medway Hydroelectric Project under P-2666.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14693973 - 20170928 Medway Project 2666; Run of River and Water Level Modification for Dam Safety Inspections
- http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20180122-3012 – January 22, 2018 Letter order accepting Black Bear Hydro Partners, LLC 09/28/17 filing of the run-of-river flow and reservoir water level modifications - Article 402 for the Medway Hydroelectric Project under P-2666.
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14515634 – March 10, 2017 Water Level Drawdown Exceedance of Black Bear Hydro Partners LLC under P-2666
- https://elibrary.ferc.gov/eLibrary/filedownload?fileid=14521087 – March 17, 2017 Letter informing Black Bear Hydro Partners, LLC that the reservoir surface elevation deviation that occurred on March 2, 2017 will not be considered a violation of Article 402 for the Medway Hydroelectric Project under P-2666

7.0 SUPPORTING DOCUMENTATION

- 2004 Water Quality Certification for the Medway Project
- 1998 Water Quality Certification for the Medway Project
- IPAC Report
- BBHP January 19, 2018 5 Year Consultation Letter for the Medway Project
- NMFS February 12, 2018 5 Year Consultation Letter for the Medway Project
- Maine Natural Areas Program Project Review
- Maine Department of Inland Fisheries and Wildlife State Listed Species Information
- Maine Department of Environmental Protection Letter regarding Section 401 Water Quality Certification Status

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMENTS

December 16, 2004

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Application for Amendment of License
Medway Hydro Project
FERC No. 2666

Dear Secretary Salas:

This is in response to the Application for Amendment of License of PPL Maine LLC for the existing Medway Hydro Project, FERC No. 2666, located on the West Branch of the Penobscot River in the Towns of Medway and East Millinocket, and the unorganized township of TA-R7, Penobscot County, Maine.

On November 10, 2004, the Maine Department of Environmental Protection (MDEP) issued a draft Maine Waterway Development and Conservation Act (MWDCA) Permit and Water Quality Certification, with conditions, for the proposed modification of the Medway Project. The draft order reflected an impoundment level increase of one foot and incorporated all appropriate terms and conditions of the June 25, 2004 Lower Penobscot River Basin Comprehensive Settlement Accord.

The MDEP has now issued a final MWDCA Permit and Water Quality Certification for the proposed modification of the Medway Project. The final permit and certification reflects the comments received by the MDEP on the draft Order. A copy of the Department Order approving the modification is attached.

In summary, the proposed modification of the Medway Project has been certified as meeting applicable water quality standards, subject to the following conditions:

1. The Standard Condition of Approval for projects under the Maine Waterway development and conservation Act.

2. All existing permit conditions for the Medway Project as contained in Department Order #L-18893-35-B-N dated December 23, 1998, subject to any subsequent amendments, modifications and condition compliances, shall remain in effect except as specifically modified by this approval.

3. Except as temporarily modified by specified conditions, water levels in the project impoundments shall be maintained within 6 inches of full pond elevation (260.3 feet msl) when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.

4. A Contingent Mitigation Fund shall be established in accordacne with the terms of the Lower Penobscot River Multiparty Settlement Agreement.

We recommend that the forgoing conditions be included in the Articles of the Amendment of License issued for the Medway Hydro Project, in compliance with the provisions of Sections 401 (a) and (d) of the Clena Water Act.

By Executive order of the Governor of the State of Maine, the terms and conditions in the attached Water Quality Certification represent the State's official recommendations regarding the subject Application for New License, superceding all preliminary recommendations by individual State agencies.

Please direct any questions regarding these comments to Dana Murch of the MDEP staff at 207-287-7784.

Sincerely,

/s/ Andrew C. Fisk
Andrew C. Fisk, Director
Bureau of Land & Water Quality

Attachment

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEPARTMENT ORDER

IN THE MATTER OF

PPL MAINE LLC	) MAINE WATERWAY DEVELOPMENT AND
Medway, East Millinocket and TA-R7	) CONSERVATION ACT and
Penobscot County, Maine	) WATER QUALITY CERTIFICATION
MEDWAY HYDRO PROJECT	)
FLASHBOARD REPLACEMENT	) FINDINGS OF FACT AND ORDER
#L-18893-33-H-M (APPROVAL)	) PERMIT MODIFICATION

Pursuant to the provisions of 38 MRSA Sections 464 et seq. and Sections 630 et seq., 06-096 CMR 450 (Administrative Rules for Hydropower Projects, effective date September 1, 1987), and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of PPL MAINE, LLC with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

A. Application. The applicant proposes to replace the existing flashboard system and modify the operation of the existing Medway Hydro Project, located on the West Branch Penobscot River in the Towns of Medway and East Millinocket and the unorganized township TA-R7, Penobscot County, Maine. The applicant also proposes to comply with the requirements of Lower Penobscot River Basin Comprehensive Settlement Accord (Accord), dated June 25, 2004, as they apply to the Medway Project.

B. Existing Project. The existing Medway Project consists of a dam and powerhouse, both originally constructed in 1922, an impoundment, and appurtenant facilities.

The Medway Dam is an L-shaped concrete gravity structure consisting of a 343 foot-long spillway section with an average height of 20 feet, a fishway and log sluice section, a 64 foot-long forebay wall section, and a 170 foot-long intake section. The intake section leads directly to the powerhouse that is an integral part of the dam. The spillway section is topped by 58 inch-high wooden flashboards.

The dam is located immediately upstream of the confluence of the East Branch and West Branch of the Penobscot River in the Town of Medway, at the site known as Rockabema Rips. The dam creates a 1.9 mile-long impoundment with a surface area of 120 acres at a normal full pond elevation of 259.3 feet msl. The impoundment extends upstream to Great Northern Paper's East Millinocket Dam.

The project powerhouse contains five turbine-generator units with a total rated generating capacity of 3,440 KW at a gross head of 18.85 feet. The maximum hydraulic capacity of the generating units is 3,450 cubic feet per second (cfs).

The operation of the Medway Project was approved by the DEP in Department Order #L-18893-33-B-N, dated December 23, 1998. The project is operated as a hydroelectric generating facility under the terms of FERC License No. 2666.

C. Summary of Flashboard Replacement Proposal. The applicant proposes to install new flashboards which will be 5.75 feet in height in place of the existing flashboards which are 4.75 feet in height. The new flashboard system has been designed to allow failure when overtopped by one foot of water, at elevation 261.3 feet NGVD, which is the same elevation at which the existing flashboards are designed to fail (when overtopped by two feet of water). Additionally, the flashboards will fail at a lower flow. The new flashboard system will be installed in the same manner as the existing flashboards. The replacement will not require any instream construction activity.

D. Summary of Proposed Project Operation. The applicant proposes to continue to operate the project in a run-of-river mode, with outflows approximately equal to inflows. The normal impoundment elevation at the dam will be raised from 259.3 feet to 260.3 feet. This elevation will continue to be maintained when river flows are at or below the hydraulic capacity of the turbines. The impoundment surface area of approximately 98 acres will be increased by 3.5 acres to approximately 101.5 acres. Due to prominent hydraulic controls at the upstream end of the impoundment the length of the 1.7-mile project impoundment will not increase appreciably.

2. JURISDICTION

A. Hydropower Project Permit. The proposed flashboard replacement qualifies as the "construction, reconstruction or structural alteration of a hydropower project" under the Maine Waterway Development and Conservation Act (MWDCA), 38 MRSA Section 630 et seq. The proposed modification of project operation qualifies as a change in the terms and conditions of the MWDCA permit currently in effect for the project that must be approved by the Department.

B. Water Quality Certification. The proposed flashboard replacement and modification of project operation qualify as an "activity...which may result in (a) discharge into the navigable water (of the United States)" under the Clean Water Act (CWA), 33 USC 1251 et seq. Section 401 of the CWA requires that any applicant for a federal license or permit to conduct such an activity will comply with applicable State water quality standards.

The applicant has filed an Application for Amendment of License for the Medway Hydroelectric Project with the Federal Energy Regulatory Commission to authorize the proposed new flashboard system and modification of project operation.

C. Terms and Conditions. Section 401 (d) of the CWA provides that a water quality certification shall set forth any limitations necessary to assure that an applicant for a federal license or permit will comply with any appropriate requirement of state law, and that such limitations shall become a condition on the federal license or permit issued for the activity. As discussed above, a permit is required under the MWDCA for the proposed new flashboard system and modification of project operation. The MWCDA is a state water quality-related law. Consequently, the terms and conditions of any permit issued for this project constitute appropriate and necessary limitations to be set forth in any certification issued for the project.

3. APPLICABLE WATER QUALITY STANDARDS

A. Classification: The waters of the Penobscot River affected by the Medway Project are currently classified as follows: Penobscot River, West Branch Drainage - From the outlet of Furguson and Quakish Lakes to its confluence with the East Branch of the Penobscot River, including all impoundments - Class C. 38 MRSA § 467(7)(C)(1)(f).

B. Designated Uses. Class C waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as a habitat for fish and other aquatic life. 38 MRSA § 465(4)(A).

C. Numeric Standards. The dissolved oxygen content of Class C waters may be not less than 5 parts per million or 60% of saturation, whichever is higher, except that in identified salmonid spawning areas where water quality is sufficient to ensure spawning, egg incubation and survival of early life stages, that water quality sufficient for these purposes must be maintained. 38 MRSA § 465(4)(B).

D. Narrative Standards. Discharges to Class C waters may cause some changes to aquatic life, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. 38 MRSA § 465(4)(C).

The habitat characteristics and aquatic life criteria of Class C are deemed to be met in an existing impoundment which is classified C provided that any reasonable changes are implemented that do not significantly affect existing energy generation capability and that would result in an improvement in the habitat and aquatic life of the impounded waters. Where the actual quality of the impounded waters attains any more stringent habitat characteristic or aquatic life criteria than that required under Class C, that existing water quality must be maintained and protected. 38 MRSA § 464(10).

E. Antidegradation: The Department may only approve water quality certification if the standards of classification of the waterbody and the requirements of the State's antidegradation policy will be met. The Department may approve water quality certification for a project affecting a waterbody in which the standards of classification

are not met if the project does not cause or contribute to the failure of the waterbody to meet the standards of classification. 38 M.R.S.A. § 464(4)(F).

4. DISSOLVED OXYGEN

The Department has developed a water quality model for the Penobscot River. This model has been calibrated and verified with data collected in 1997 and 2001. The Department has reviewed the proposed increase in impoundment level using this model to predict expected changes in dissolved oxygen. The model predicts that no lowering of dissolved oxygen levels should occur in the Medway impoundment as a result of the change in water level. Based on this review, the Department finds that the proposed impoundment level change will not have any adverse impact on dissolved oxygen conditions in the project waters.

5. AQUATIC LIFE

The proposed increase in impoundment full pond level is not expected to have any adverse impact on aquatic life in the project waters.

6. FISHERY RESOURCES

A. Comprehensive Settlement Accord. The Lower Penobscot River Basin Comprehensive Settlement Accord (Accord), dated June 25, 2004, established a comprehensive settlement governing fisheries restoration for numerous anadromous and catadromous species to assist in the restoration of these species in the lower Penobscot River Basin. The Accord was designed to accomplish the following:

- The sale by PPL of the Veazie, Great Works, and Howland dams to the Penobscot River Restoration Trust (Trust), the decommissioning and removal of Veazie and Great Works, and the decommissioning and bypassing of Howland;
- The upgrading of fish passage at the remaining PPL dams in the lower Penobscot River Basin;
- The provision for increased power production at remaining PPL dams to replace power lost by removals/bypass;
- The provision for continued public outreach and other appropriate steps to address local concerns;
- The settlement of outstanding litigation regarding Basin Mills, Milford and other projects and resolution of the pending Great Works and Howland licensing proceedings; and,
- The provision of a Contingent Mitigation Fund (Mitigation Fund) in the event that the Veazie and Great Works dams are not purchased and removed by the Trust.

The Accord includes the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004 (MPA). The MPA is intended to: significantly enhance fishery restoration efforts in the Penobscot River Basin and resolve to the Parties' satisfaction all pending

fish passage issues associated with the Veazie, Great Works, and Howland Projects ("Designated Projects") and other hydroelectric projects in the Penobscot River Basin currently owned or operated by PPL Maine. The MPA is also intended to resolve to the Parties' satisfaction all issues raised in the requests for rehearing filed by PPL Maine's predecessor in interest, Department of the Interior, Penobscot Indian Nation, Atlantic Salmon Federation, Maine Audubon Society, Maine Council of the Atlantic Salmon Foundation and Trout Unlimited of the Federal Energy Regulatory Commission's April 30, 1998, orders for Basin Mills, Veazie, Milford, Orono, and Stillwater projects.

B. Applicant's proposals. The applicant proposes to comply with the Lower Penobscot River Multiparty Settlement Agreement as it applies to the Medway Project. Under the MPA, PPL is obligated to make the following provisions relating to the Medway Project:

- Continue to operate the existing fish passage for eels;
- In the event the option to purchase the Veazie, Great Works, and Howland projects is not exercised or Veazie and Great Works are not decommissioned and removed by the Trust, provide monetary compensation in accordance with the MPA to mitigate for the impacts to habitat that may be caused by the implementation of the headpond increase at the Medway project;

C. Discussion. The Department finds that the applicant's proposals to continue to provide eel passage at the Medway Project and provide contingent mitigation support for fisheries resources in accordance with the Lower Penobscot River Multiparty Settlement Agreement will be adequate to ensure that project waters are suitable for the designated use of habitat for fish.

7. PUBLIC ACCESS AND RECREATION

The proposed increase in impoundment full pond level is not expected to have any adverse impact on public access to or recreational uses of the project waters.

8. HISTORIC AND ARCHAEOLOGICAL RESOURCES

The Maine Historic Preservation Commission has commented, in a letter dated March 15, 2004, that the proposed increase in normal impoundment level will have no effect upon historic properties, architectural or archaeological resources.

9. SOIL STABILITY, WETLANDS AND WILDLIFE

The proposed increase in impoundment full pond level is not expected to have any adverse impact on soil stability, wetlands and wildlife in the project area.

10. FLOOD CONTROL

The new flashboard system has been designed to allow failure when overtopped by one foot of water, at elevation 261.3 feet NGVD, which is the same elevation at which the existing

flashboards are designed to fail (when overtopped by two feet of water). Thus, by maintaining the same flashboard failure point, the dam's flood flow discharge capacity will be maintained, and there will be no change in upstream water levels during high-flow periods. With the new flashboards installed the frequency of flashboard outages is not expected to appreciably increase. The existing flashboards currently fail approximately once per year, typically in the spring. The new flashboards are expected to fail only slightly more often, or for a short additional period each spring, failing a few hours or days earlier than the existing flashboards would otherwise have failed.

11. HYDROELECTRIC POWER GENERATION

The proposed increase in impoundment level will increase average annual generation at the Medway Project by 2.3 million kilowatt hours. This is equivalent to the electricity that would be produced by burning 51,480 barrels of oil or 25,490 tons of coal each year.

12. OTHER ISSUES; REVIEW COMMENTS

No other significant issues involving any statutory criteria of the Maine Waterway Development and Conservation Act have been identified. No objections to the proposed activity have been raised by State review agencies or the affected municipalities.

BASED on the above Findings of Fact, and the evidence contained in the application and supporting documents, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The applicant has the financial capacity and technical ability to undertake the project.

2. The applicant has made adequate provision for protection of public safety.

3. The project will result in significant economic benefits to the public.

4. The applicant has made adequate provision for traffic movement.

5. The proposed activity is not located within the jurisdiction of the Land Use Regulation Commission.

6. The applicant has made reasonable provisions to realize the environmental benefits and to mitigate the adverse environmental impacts of the project provided that:

   a. All existing permit conditions remain in effect except as specifically modified by this approval;

   b. Following the installation of the new flashboard system, impoundment levels are maintained within six inches of the new flashboard elevation of 260.3 feet msl;

c. The applicant complies with the contingent mitigation fund requirement of the Lower Penobscot River Multiparty Settlement Agreement, as applicable to the Medway Project.

7. The advantages of the project are greater than the direct and cumulative adverse impacts over the life of the project provided that the project is undertaken in accordance with the provisions of Conclusion #6 above.

8. There is reasonable assurance that the project will not violate applicable state water quality standards.

THEREFORE, the Department APPROVES the above noted application of PPL Maine, LLC to install new flashboards and modify project operation at the Medway Hydro Project, as described above, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

1. STANDARD CONDITIONS

The Standard Conditions of Approval for projects under the Maine Waterway Development and Conservation Act, a copy attached.

2. EXISTING PERMIT CONDITIONS

All existing permit conditions for the Medway Project as contained in Department Order #L-18893-35-B-N dated December 23, 1998, subject to any subsequent amendments, modifications and condition compliances, shall remain in effect except as specifically modified by this approval.

3. WATER LEVELS

Condition 1.A. of Department Order #L-18893-35-B-N dated December 23, 1998, is modified to read:

1.A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, and (4) agreement between the applicant, appropriate state and/or federal agencies, and the Penobscot Indian Nation, water levels in the project impoundment shall be maintained within 6 inches of full pond elevation (260.3 feet msl) when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.

4. CONTINGENT MITIGATION FUND

In the event that the option to purchase the Veazie and Great Works projects is not exercised or is terminated, or if, subsequent to the exercise of the option, the Veazie and Great Works projects are not acquired and removed, the applicant shall participate in the establishment of and shall provide funds to a Contingent Mitigation Fund, in accordance with the terms of the

Lower Penobscot River Multiparty Settlement Agreement, dated June 2004.

DONE AND DATED AT AUGUSTA, MAINE, THIS *17th* DAY OF *December*, 2004.

By: */s/ Dawn R. Gallagher*
Dawn R. Gallagher, Commissioner

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

COMMENTS

December 24, 1998

The Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Application for New License
Medway Hydro Project
FERC No. 2666

Dear Secretary:

This is in response to Bangor Hydro Electric Company's Application for New License for the existing Medway Hydro Project, FERC No. 2666, located on the West Branch Penobscot River in the Towns of Medway and East Millinocket and the unorganized township TA-R7, Penobscot County, Maine.

The Maine Department of Environmental Protection has now issued Water Quality Certification for the proposed project relicensing. A copy of the Department Order granting certification (DEP #L-18893-33-B-N) is attached.

In summary, the continued operation of the project has been certified as meeting applicable water quality standards subject to the following special conditions:

1. Except as temporarily modified by approved maintenance activities, inflows, operating emergencies beyond the applicant's control, or agency agreement, water levels in the project impoundment shall be maintained within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.

2. Except as temporarily modified by approved maintenance activities, inflows, operating emergencies beyond the applicant's control, impoundment refilling after flashboard failure and replacement, or agency agreement, outflows from the project shall be approximately equal to inflows at all times.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

web site: www.state.me.us/dep

3. The applicant shall install and operate upstream and downstream passage facilities to provide migratory passage for American eels.

4. The applicant shall conduct monitoring to determine the effectiveness of eel passage facilities.

5. The applicant shall collect and analyze tissue samples from white suckers and smallmouth bass and sediment samples from the Medway Dam impoundment, Mattaceunk Dam impoundment, and from the river below the Mattaceunk Dam for levels of mercury and total PCBs. The Department reserves the right to require such additional fish tissue collection and analysis as are warranted to determine whether the presence of the dams is contributing to the issuance of any fish consumption advisory on the West Branch Penobscot River.

6. Approval is limited to the proposals xontained in the application as submitted, and any variances are subject to Department review and approval.

7. The applicant shall obtain and comply with all applicable federal, state and local licenses, permits, etc.

8. This certification shall be effective concurrent with the effective date of the new FERC license for the project.

We recommend that the foregoing conditions be included in the Articles of any new license issues for the Medway Project, in compliance with the provisions of Sections 401 (a) and (d) of the Clean Water Act.

By Executive Order of the Governor of the State of Maine, the terms and conditions contained in the attached water quality certification represent the State's official recommendations regarding the subject Application for License, superceding all preliminary recommendations by individual State agencies.

Please direct any questions regarding these comments to Dana Murch of the Department's staff at 207-287-3901.

Sincerely,

Martha Kirkpatrick, Director
Bureau of Land & Water Quality

Attachment
\medway comments

Cc: J. Mark Robinson, Director, OHL-DPL&C, FERC
David Turner, OHL-DPL&C, FERC
Kathy Billings, Bangor Hydro
Clem Fay, Penobscot Indian Nation
Gordon Russell, USF&WS
Ralph Abele, EPA Region 1
FERC Review Coordinating Committee

STATE OF MAINE
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, MAINE
04333

ANGUS S. KING, JR.
GOVERNOR

DEPARTMENT ORDER

IN THE MATTER OF

BANGOR HYDRO ELECTRIC COMPANY	)	MAINE WATER QUALITY PROGRAM;
Medway, East Millinocket and TA-R7	)	FEDERAL CLEAN WATER ACT
Penobscot County	)	
MEDWAY HYDROELECTRIC PROJECT	)	
	)	
#L-18893-33-B-N (Approval)	)	WATER QUALITY CERTIFICATION

Pursuant to the provisions of 38 MRSA Sections 464 et seq. and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of BANGOR HYDRO ELECTRIC COMPANY with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

a. Application. Bangor Hydro Electric Company proposes the continued operation of the Medway Hydroelectric Project, located on the West Branch Penobscot River in the Towns of Medway and East Millinocket and the unorganized township TA-R7, Penobscot County, Maine (see Exhibits 1 and 2).

b. Existing Project Features. The existing project consists of a dam and powerhouse, both originally constructed in 1922, an impoundment, and appurtenant facilities (see Exhibit 3).

The Medway Dam is an L-shaped concrete gravity structure consisting of a 343 foot-long spillway section with an average height of 20 feet, a fishway and log sluice section, a 64 foot-long forebay wall section, and a 170 foot-long intake section. The intake section leads directly to the powerhouse that is an integral part of the dam. The spillway section is topped by 58 inch-high wooden flashboards.

The dam is located immediately upstream of the confluence of the East Branch and West Branch of the Penobscot River, at the site known as Rockabema Rips. The dam creates a 1.9 mile-long impoundment with a surface area of 120 acres at a normal full pond elevation of 259.3 feet msl. The impoundment extends upstream to Great Northern Paper's East Millinocket Dam.

The project powerhouse contains five turbine-generator units with a total rated generating capacity of 3,440 KW at a gross head of 18.85 feet. The maximum hydraulic capacity of the generating units is 3,450 cfs.

c. Existing Project Operation. The project is operated in a run-of-river mode, with outflow being approximately equal to inflow except during flashboard failure or replacement. The spillway flashboards begin to fail when overtopped by 1 foot of water. Following flashboard failure, the flashboards cannot be replaced until river flows drop below the maximum hydraulic capacity of 3,450 cfs and the impoundment has been lowered below the permanent spillway crest elevation of 254.5 feet msl.

d. Proposed Operation. The applicant proposes to continue to operate the project as a run-of-river facility, subject to flashboard failure and replacement.

The applicant has recently installed an automated operating system that will reduce impoundment fluctuations during normal project operations. This should result in a five percent increase in annual generation.

The applicant has investigated the installation of a pneumatic crest control system (a.k.a. "rubber dam") to replace the existing spillway flashboards. The value of such a system is that it operates automatically to maintain the impoundment at or above the full pond level, thus increasing generation while eliminating any adverse enviromental impacts of changing impoundment levels. The applicant reports that the project flashboards only fail, on average, once a year for a short period of time, and that the anticipated energy benefit and avoided flashboard replacement cost are not enough to justify the significant capital and operational costs of a rubber dam.

e. Proposed Environmental Mitigation/Enhancement. The applicant proposes to modify project facilities in accordance with several measures designed for the protection or enhancement of, or mitigation of project impacts on, public resources. These measures include:

- Continuing to operate the project as a run-of-river facility, subject to flashboard failure and replacement;
- Constructing upstream and downstream passage facilities for eels; and
- Monitoring the effectiveness of the eel passage facilities.

2. JURISDICTION

The proposed continued operation of the project qualifies as an "activity...which may result in (a) discharge into the navigable water (of the United States)" under the Clean Water Act (CWA), 33 USC 1251 et seq. Section 401 of the CWA requires that any applicant for a federal license or permit to conduct such an activity will comply with applicable State water quality standards.

The Medway Hydroelectric Project was originally licensed to Bangor Hydro as a water power project (No. 2666) on March 29, 1979 by the Federal Power Commission, pursuant to the Federal Power Act. The project license was issued with an effective date of April 1, 1962, and an expiration date of March 31, 1999. The applicant has filed an Application for New License to continue to operate the Medway Hydroelectric Project. This application is currently pending before the Federal Energy Regulatory Commission.

The Department of Environmental Protection has been designated by the Governor of the State as the certifying agency for issuance of Section 401 water quality certification for all activities in the state not subject to Land Use Regulation Commission permitting and review. The Medway Hydroelectric Project is located in part in organized municipalities that are not subject to LURC's regulatory jurisdiction.

3. APPLICABLE WATER QUALITY STANDARDS

a. Classification. The receiving waters that are or may be affected by the project are currently classified as follows:

Penobscot River, West Branch Drainage - From the outlet of Furguson and Quakish Lakes to its confluence with the East Branch of the Penobscot River, including all impoundments - Class C. 38 MRSA § 467(7)(C)(1).

b. Designated Uses. Class C waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation; navigation; and as habitat for fish and other aquatic life. 38 MRSA § 465(4)(A).

c. Numeric Standards. The dissolved oxygen content of Class C waters shall be not less than 5 parts per million or 60% of saturation, whichever is higher, except that in identified salmonid spawning areas where water quality is sufficient to ensure spawning, egg incubation and survival of early life stages, that water quality sufficient for these purposes shall be maintained. 38 MRSA § 465(4)(B).

d. Narrative Standards. Discharges to Class C waters may cause some changes to aquatic life, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. 38 MRSA § 465(4)(C).

The habitat characteristics and aquatic life criteria of Class C are deemed to be met in an existing impoundment which is classified C provided that any reasonable changes are implemented that do not significantly affect existing energy generation capability and that would result in an improvement in the habitat and aquatic life of the impounded waters. Where the actual quality of the impounded waters attains any more stringent habitat

characteristic or aquatic life criteria than that required under Class C, that existing water quality must be maintained and protected. 38 MRSA § 464(10).

e. Antidegradation. The Department may only approve water quality certification if the standards of classification of the waterbody and the requirements of the State's antidegradation policy will be met. The Department may approve water quality certification for a project affecting a waterbody in which the standards of classification are not met if the project does not cause or contribute to the failure of the waterbody to meet the standards of classification. 38 MRSA § 464(4)(F).

4. DISSOLVED OXYGEN

a. Existing Conditions. Historically, the West Branch Penobscot River received significant volumes of untreated paper mill and domestic wastes, as well as organic debris from log driving operations. Currently, the river receives treated effluent from two paper mills and the Towns of Millinocket and East Millinocket. There is no consumptive withdrawal of water from the project impoundment.

In 1995 the applicant conducted DO and temperature sampling in the project impoundment and tailrace areas. Data was collected in accordance with the Department's "River Sampling Protocol." DO levels ranged from a low of 6.2 ppm at 70% saturation to a high of 8.3 ppm at 90% saturation.

In 1988, the Department issued a West Branch Penobscot Waste Load Allocation (WLA) report based on water quality data collected from 1985 through 1987. In 1991, the Department issued a revised WLA report based on additional data collected by Great Northern Paper and new discharge limits for the upstream paper mills. Water quality modeling contained in the 1991 WLA report indicates that Class C DO standards will be maintained in the project area under critical water quality conditions of low flow, high river temperature and maximum waste discharge loading.

b. Applicant's Proposals. To protect dissolved oxygen levels, the applicant proposes to continue to operate the project as a run-of-river facility, subject to flashboard failure and replacement.

c. Discussion. The applicant's proposals appear to be adequate to meet dissolved oxygen standards in the waters affected by the project.

5. FISH RESOURCES

a. Existing Resources. The project impoundment and tailrace areas support a variety of resident warmwater and coldwater fish species. The principal game fish is the smallmouth bass.

Catadromous American eels are known to migrate through the project area. Eels migrate as adults from inland freshwater lakes to the Sargasso Sea to spawn, and then return to inland waters as juveniles to grow to maturity.

b. Existing Management Plans. No specific resident fishery management plans have been identified for the West Branch Penobscot River in the project area.

There are currently no plans to restore any species of anadromous fish to the West Branch Penobscot River drainage.

There are significant and growing fisheries for eels both upstream from the project and in the lower Penobscot River. The Department of Marine Resources is interested in maintaining and enhancing current eel stocks to support commercial and recreational fisheries.

c. Applicant's Proposals. To protect and enhance fishery resources, the applicant proposes the following measures:

- Continuing to operate the project as a run-of-river facility, subject to flashboard failure and replacement;
- Constructing upstream and downstream passage facilities for eels; and.
- Monitoring the effectiveness of the eel passage facilities.

d. Discussion. The applicant's proposals appear to be adequate to achieve and maintain the suitability of project waters as habitat for fish.

6. AQUATIC MACROINVERTEBRATES

a. Existing Resources. In 1992, the Department collected samples of the macroinvertebrate community in the project impoundment. Analysis of these samples indicated that the aquatic life in the project impoundment met Class C standards.

In 1995, the applicant conducted macroinvertebrate sampling in the project tailrace area. This sampling was conducted in accordance with established Department protocols. Analysis of these samples indicates that the aquatic life in the project tailrace also meets Class C standards.

b. Applicant's Proposals. To protect aquatic organisms, the applicant proposes to continue to operate the project as a run-of-river facility, subject to flashboard failure and replacement.

c. Discussion. The applicant's proposal appear to be adequate to achieve and maintain the suitability of project waters as habitat for aquatic macroinvertebrates.

7. FISHING AND RECREATION IN AND ON THE WATER

a. Existing Uses. Existing recreational uses in the project area include boat and bank fishing, hiking, hunting, and snowmobiling.

b. Existing Recreational Facilities. In 1995, the applicant constructed a carry-in boat launch site on the north shore of the project impoundment about 200 feet above the dam, and a canoe portage trail around the dam and powerhouse.

c. Applicant's Proposals. To protect water-related recreational access and use in the project area, the applicant proposes to continue to operate the project as a run-of-river facility.

d. Discussion. The applicant's proposals appear to be adequate to achieve and maintain the suitability of the project waters for recreation in and on the water.

8. WETLANDS AND WILDLIFE RESOURCES

a. Existing Resources. The project area supports a variety of wildlife species, including large and small mammals, reptiles, amphibians, birds of prey, and song birds.

The federally threatened bald eagle is a transient in the project area. Bald eagles are known to nest both upstream and downstream of the project area, and are likely to feed in the tailrace area, especially in the winter.

The federally endangered peregrine falcon is believed to stop in the project area during its annual migrations.

River-related wetlands in the project area include forested, palustrine scrub-shrub, palustrine emergent, and palustrine unconsolidated bottom wetlands. These wetlands are found in scattered locations primarily along the banks and shallow near-shore areas of the river.

b. Applicant's Proposals. To protect wetlands and wildlife resources, the applicant proposes to continue to operate the project as a run-of-river facility.

d. Discussion. The applicant's proposals appear to be adequate to achieve and maintain the suitability of the project waters as habitat for wildlife.

9. HYDROELECTRIC POWER GENERATION

a. Existing Energy Generation. The project currently generates an average of 28,117,500 kilowatt-hours of electricity annually. This is equivalent to the energy that would be produced by burning 46,863 barrels of oil or 13,030 tons of coal each year.

The recent installation of an automated operating system is expected to increase average generation by about 1,405,000 KWHrs a year.

b. Energy Utilization. The power generated by the project is fed to Bangor Hydro's transmission and distribution system for use by its commercial, residential and industrial customers.

c. Existing Energy Policies/Plans. The State of Maine has developed a comprehensive energy plan (Final Report of the Commission on Comprehensive Energy Planning, May 1992) with the goal of meeting the State's energy needs with reliable energy supplies at the lowest possible cost, while assuring that energy production and use are consistent with a healthy environment and a vibrant economy. Specifically, the Plan establishes the following targets for Maine's energy future:

- Reduce the State's level of dependence on oil from 50% to at least the national average of 43% by the year 2000, with further reductions to at least the 30% level by 2010;
- Increase the percentage of renewable energy resources in the State's primary energy mix from 30% to 40% by the year 2000, and to at least 50% by 2010;
- Increase statewide energy efficiency relative to 1990 levels by 25% by the year 2000 and by at least 50% by 2010; and
- Work to stabilize long-term energy prices, in balance with Maine's other energy-related goals, with a specific emphasis on enhancing Maine's competitive position relative to New England and the United States.
- With respect to renewable energy, the Plan recommends that Maine actively encourage the development of wind and solar energy resources and support the continued utilization and further development, where appropriate, of the State's renewable, indigenous hydro and biomass energy resources.

c. Applicant's Proposals. The applicant's proposes to continue to operate the project as a run-of-river generating facility.

d. Discussion. As proposed, the project will continue to provide cost-effective indigenous renewable energy.

10. TOXINS

a. Existing Conditions. A fish consumption advisory has been issued for all freshwaters in Maine due to the presence of elevated levels of mercury in fish tissue. The largest source of mercury appears to be atmospheric deposition from out-of-state sources. In addition, the project dam is located downstream from the discharge of industrial process waste water from two paper mills and the discharge of municipal waste water from two towns. Toxic compounds have been found to occur in these types of discharges.

The presence of the project dam may result in increased concentrations of mercury and other contaminants in fish tissue by trapping contaminated sediments in the impoundments and thus increasing the exposure of resident fish to these compounds.

b. Fish Tissue Analysis. As part of the DEP's on-going Surface Water Ambient Toxics monitoring program, an analysis of the levels of toxic compounds present in the tissues of white suckers and smallmouth bass collected from the Medway Dam impoundment and an unimpounded reference site on the East Branch Penobscot River at Grindstone. White suckers were selected as a species for analysis due to the fact that these fish forage in river bottom sediments and may accumulate substantial amounts of contaminants. Smallmouth bass were selected for analysis because they are an abundant resident game fish that are subject to human consumption.

The results of the analysis of fish tissue collected in 1996 show that there were higher levels of mercury and PCBs in the fish from the Medway impoundment in comparison to the fish from the reference site.

c. Discussion. The evidence indicates that the project dam may be acting to raise the concentrations of at least some toxic compounds in the tissues of fish residing in the project impoundment. However, since the 1996 data was limited to two composite samples at each collection site and because the reference site is located on a river reach unaffected by industrial or municipal discharges, it is unclear whether the cause of the higher contaminant levels on the West Branch is the point source discharges or the project dam, or both.

Therefore, additional fish tissue analysis is needed to determine whether the project dam is causing higher levels of toxic contaminants and whether the dam is affecting the suitability of resident fish for human consumption. This analysis should be conducted for white suckers and smallmouth bass collected from the Medway Dam impoundment, from the downstream Mattaceunk Dam impoundment, and from the Penobscot River below the Mattaceunk Dam.

In addition, sediment analysis for toxic contaminants is needed to determine the relationship among the presence of waste water discharges, the presence of the project dam, and the levels of contaminants in fish tissue. This analysis should be conducted for sediments collected from the Medway Dam impoundment, from the downstream Mattaceunk Dam impoundment, and from the Penobscot River below the Mattaceunk Dam.

11. OTHER ISSUES

a. Penobscot Indian Nation Comments. The Penobscot Indian Nation (PIN) comments that improvements in the outflow quality of existing industrial/municipal discharges within and upstream of the project area are likely to occur during the term of the water quality certification, and that these improvements may permit a classification upgrade to Class B in the future. PIN therefore recommends that the certification contain a provision to allow incorporation of any future upgrade in classification and to include any additional or modified water quality monitoring that would be required as a result of the upgrade.

b. Discussion. Any future reclassification of the river in the project area is speculative and, as such, is not a proper matter for consideration in certifying whether the operation of the Medway Project meets its current classification standards. In addition, the state's antidegradation policy provides that, when the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained, and the Board of Environmental Protection shall recommend to the Legislature that that water be reclassified in the next higher classification. See 38 MRSA § 464(4)(F)(3). Thus, if future improvements in water quality result in Class B standards being met in the project area, then Class B water quality must be maintained and the Legislature shall be asked to reclassify the appropriate segment of the West Branch from Class C to Class B. Finally, pursuant to 38 MRSA § 341-D(3), the Department has the authority, after written notice and opportunity for hearing, to modify, revoke, or suspend any certification whenever the Board finds that, among other things, there has been a change in any condition or circumstances that requires revocation, suspension or a temporary or permanent modification of the terms of the certification. Thus, the Department has the authority to revisit the certification in the future to impose such requirements for water quality monitoring as may be required as a result of a reclassification of the project waters. It is noted, however, that ambient water quality monitoring to determine compliance of a water body with the standards of its classification or to support a request for reclassification has traditionally been the responsibility of the Department.

BASED on the above FINDINGS OF FACT, and the evidence contained in the application and supporting documents, and subject to the conditions listed below, the Department CONCLUDES that the continued operation of the Medway Hydroelectric Project will result in all waters affected by the project being suitable for all designated uses and meeting all other applicable water quality standards, provided that:

1. Water levels in the project impoundment are maintained within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest when flashboards are not in place;

2. Outflows approximately equal to inflows are maintained from the project at all times;

3. Upstream and downstream passage facilities are installed and operated to provide migratory passage for American eels;

4. The effectiveness of the eel passage facilities is monitored and ensured; and

5. The applicant cooperates with the DEP in the collection and analysis of additional fish tissue for possible differences in levels of toxic compounds due to the presence of the project dam.

THEREFORE, the Department GRANTS CERTIFICATION that there is a reasonable assurance that the continued operation of the MEDWAY HYDROELECTRIC PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. WATER LEVELS

   A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, and (4) agreement between the applicant and appropriate state and/or federal agencies, water levels in the project impoundment shall be maintained within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.

   B. Operating emergencies beyond the applicants' control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.

   C. The applicant shall, in accordance with the schedule established in the new FERC licenses for the projects, submit plans for providing and monitoring the impoundment water levels required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

2. MINIMUM FLOWS

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, (4) impoundment refilling after flashboard failure and replacement, and (5) agreement between the applicant and appropriate state and/or federal agencies, outflows from the project shall be approximately equal to inflows at all times.

B. Operating emergencies beyond the applicants' control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.

C. The applicant shall, in accordance with the schedule established in the new FERC licenses for the projects, submit plans for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

3. EEL PASSAGE FACILITIES

A. The applicant shall, in accordance with the schedule established in the new FERC license for the project, install and operate upstream and downstream passage facilities to provide migratory passage for American eels.

B. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit final design and operational plans for the upstream and downstream passage facilities for eels required in Part A of this condition. These plans shall be prepared in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation, and shall be reviewed by and must receive the approval of FERC and the DEP Bureau of Land and Water Quality prior to installation of the facilities.

4. EEL PASSAGE MONITORING

A. The applicant shall, in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation, conduct monitoring to determine the effectiveness of the eel passage facilities required by Condion 3 of this certification.

B. The applicant shall, no later than 60 days prior to the commencement of operation of the required eel passage facilities, submit an eel passage effectiveness monitoring plan, prepared in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation. This plan shall be reviewed by and must receive the approval of FERC and the DEP Bureau of Land and Water Quality prior to its implementation.

C. The applicant shall, upon such schedule as contained in the monitoring plan, submit the results of the eel passage effectiveness monitoring plan and any recommendations for changes in the design and/or operation of the passage facilities to the DEP, PIN and all consulting agencies. The Department reserves the right, after notice to the applicant and the opportunity to request a public hearing, to require reasonable changes in the design and/or operation of the eel passage facilities as may be deemed necessary to adequately pass migrating eels through the project area.

5. FISH TISSUE SAMPLING AND ANALYSIS

A. The applicant shall, in cooperation with the DEP and the Penobscot Indian Nation, collect and analyze (1) tissue samples from white suckers and smallmouth bass and (2) sediment samples which shall be collected from the Medway Dam impoundment, from the downstream Mattaceunk Dam impoundment, and from the Penobscot River below the Mattaceunk Dam. These samples shall be analyzed for levels of mercury and total PCBs.

B. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit a plan for collecting and analyzing fish tissue and sediment samples as required by Part A of this condition. This plan, including a schedule for sample collection, shall be prepared in consultation with the DEP Division of Environmental Assessment and the Penobscot Indian Nation, and shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

C. Based on the results of this and other available fish tissue analysis, the Department reserves the right, after notice to the applicant and the opportunity for a public hearing, to require such additional fish tissue collection and analysis as may be deemed necessary to determine whether the presence of the project dam is contributing to the issuance of any fish consumption advisory on the West Branch Penobscot River.

6. LIMITS OF APPROVAL

This approval is limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. All variances from the plans and proposals contained in said documents are subject to review and approval of the Board or Department prior to implementation.

7. COMPLIANCE WITH ALL APPLICABLE LAWS

The applicant shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements and orders required for the operation of the project.

#L-18893-33-B-N (Approval)) WATER QUALITY CERTIFICATION

8. EFFECTIVE DATE

This water quality certification shall be effective concurrent with the effective date of the new hydropower license issued for the Medway Hydroelectric Project by the Federal Energy Regulatory Commission.

DONE AND DATED AT AUGUSTA, MAINE, THIS 23rd DAY OF December, 1998.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Martha Kirkpatrick
for Edward O. Sullivan, Commissioner

PLEASE SEE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of receipt of application: 2/23/98

Date application accepted for processing: 2/23/98

(Initial application received 3/17/97 and subsequently withdrawn and refiled 2/23/98)

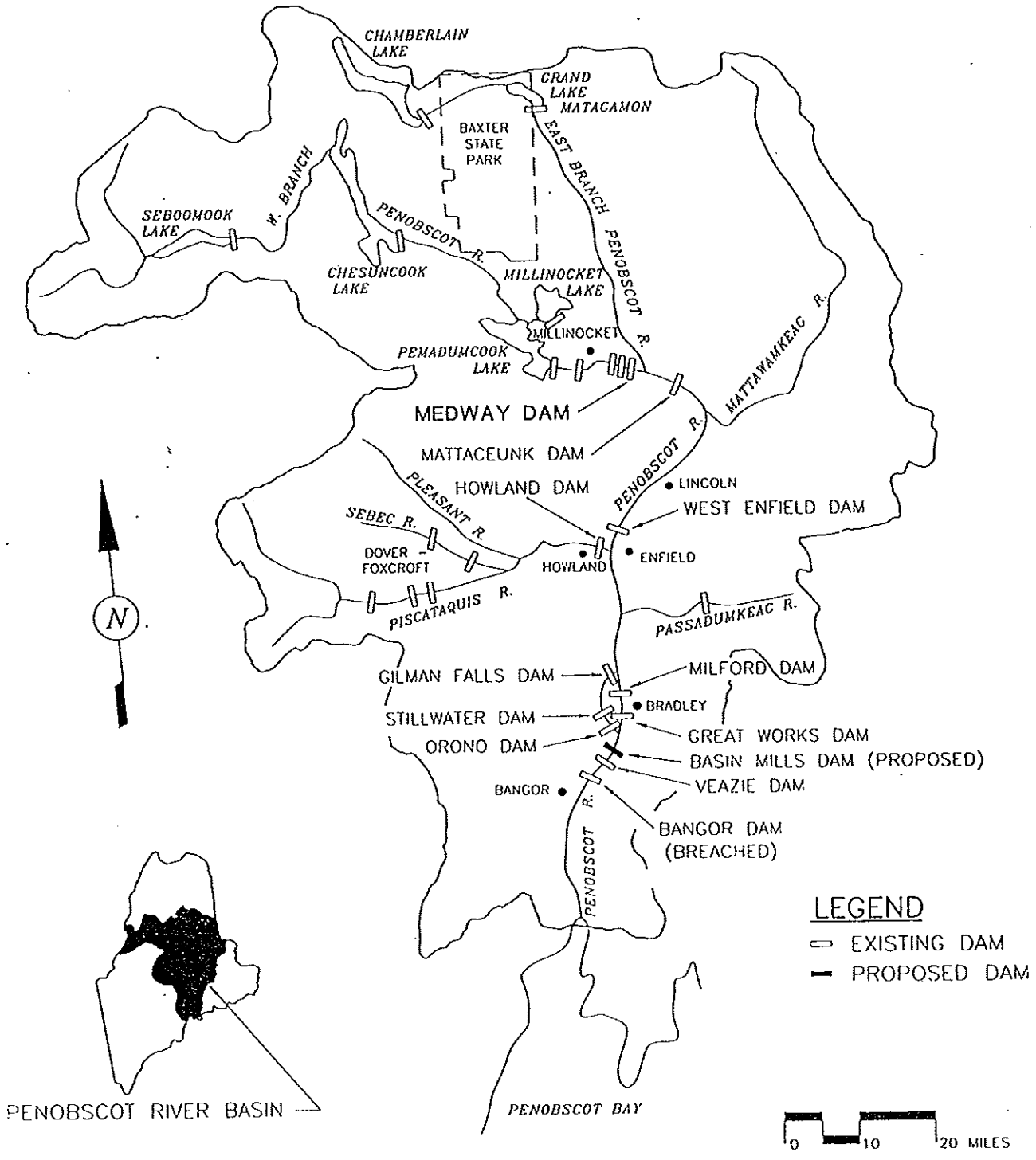
Date filed with the Board of Environmental Protection:_____

This Order prepared by Dana Murch, Bureau of Land and Water Quality

\L18893bn.lwp

FILED
DEC 28 1998
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

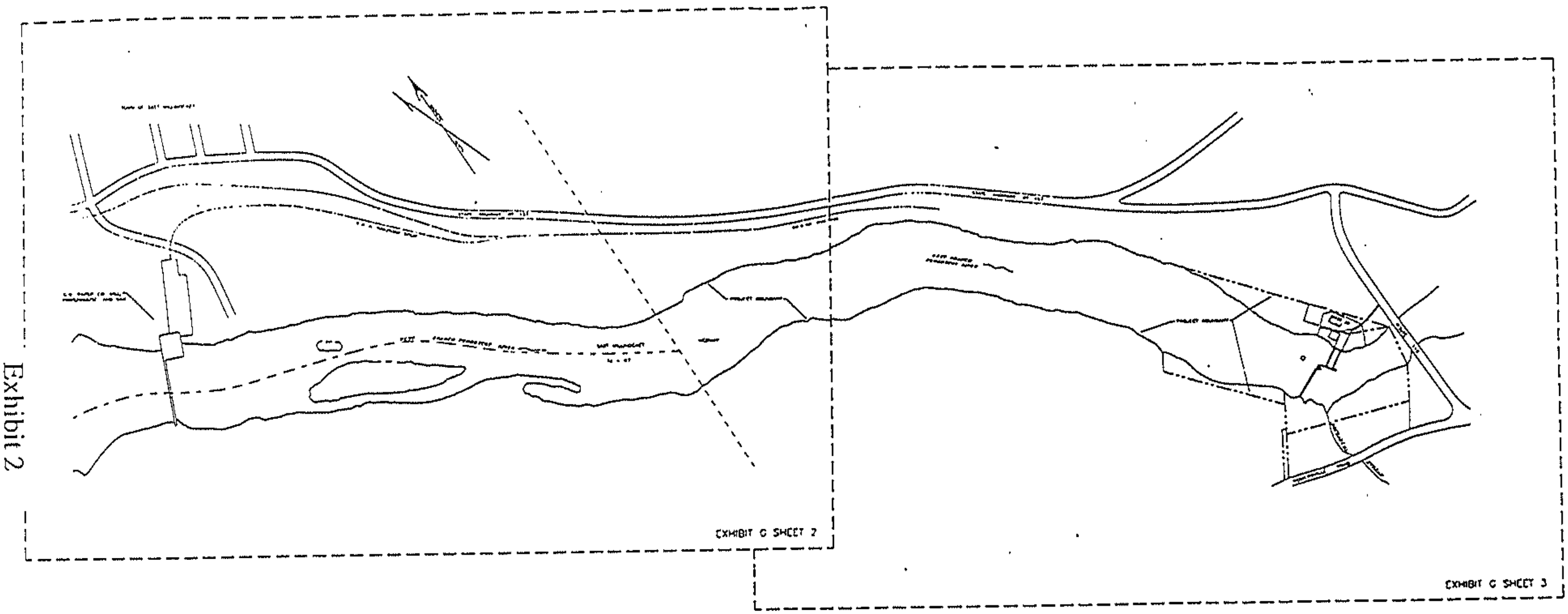
BANGOR HYDRO-ELECTRIC COMPANY



PENOBSCOT RIVER BASIN

Exhibit 1

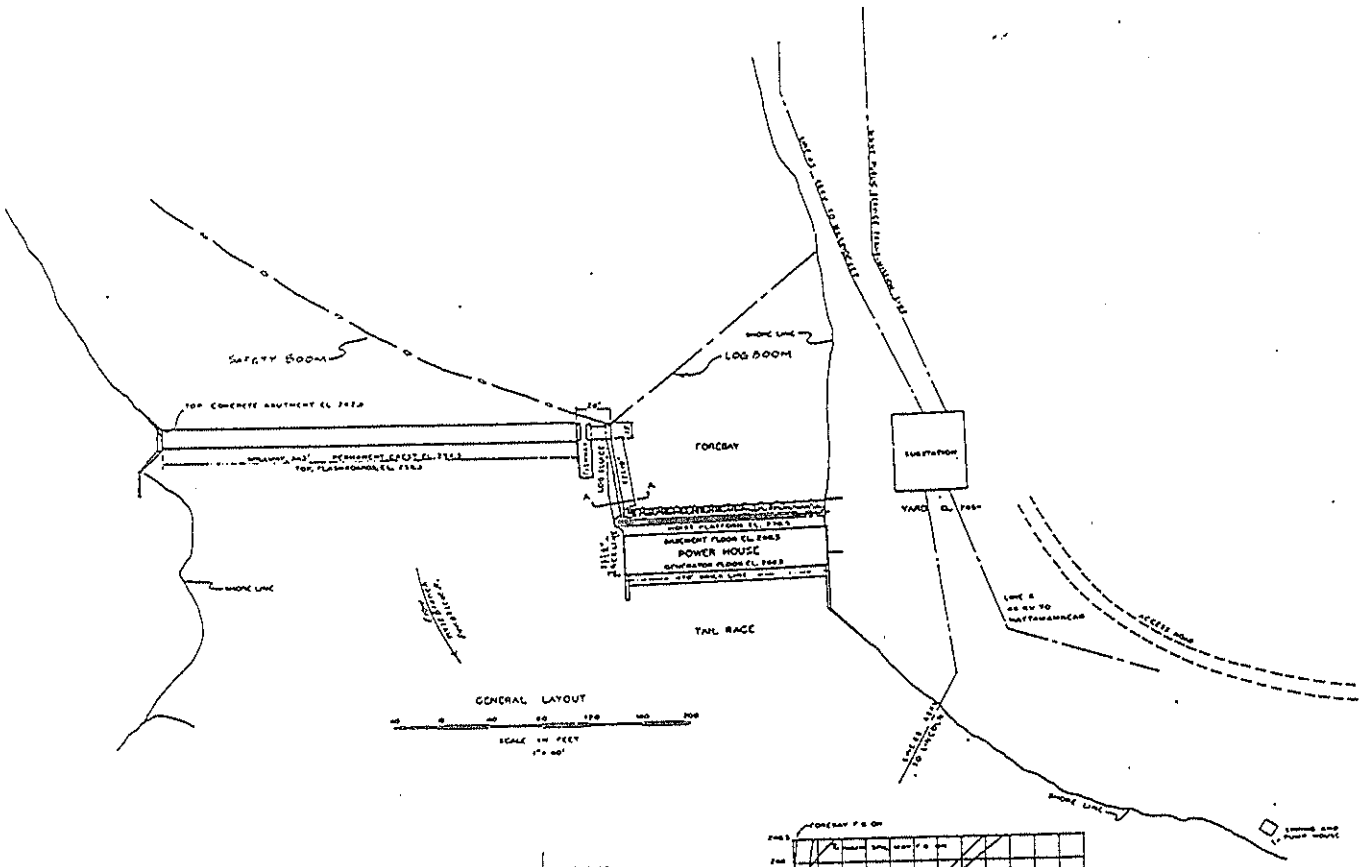
Exhibit 2

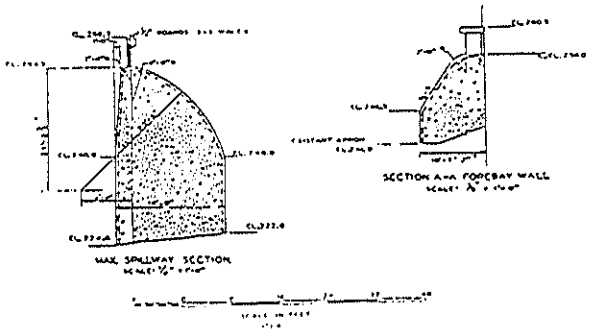


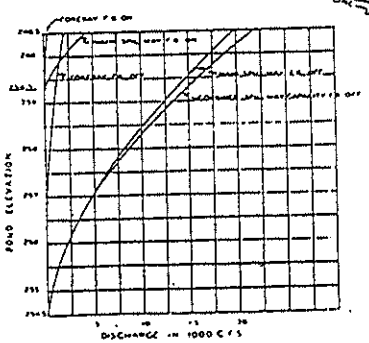
This drawing is part of the application for license made by the undersigned this 1st day of March
by Doyle [illegible]

EXHIBIT G SHEET 1 OF 3		
DETAIL MAP RESERVOIR		
MEDWAY HYDRO PROJECT BANGOR HYDRO-ELECTRIC CO.		
DATE: 13 MARCH 1996	SCALE: 1" = 200'	APPROVED

Exhibit 3







THIS PLAN IS A PART OF THE APPLICATION FOR LICENSE MADE BY THE UNDERSIGNED ON THIS 28 TH DAY OF MARCH 1997

BANGOR HYDRO ELECTRIC CO.

BY Douglas S. Morrell

DOUGLAS S. MORRELL—MGR PROD. & PLANT ENG.

EXHIBIT F SHEET 1		
GENERAL PLAN AND DAM SECTIONS		
MEDWAY HYDRO PROJECT BANGOR HYDRO-ELECTRIC CO.		
DATE: 3-13-97	SCALE: AS NOTED	APPROVED: -

DEP FACT SHEET

Appealing a Department Decision

revised: August 1998 contact: (207) 287-2811

==========

SUMMARY OF ADMINISTRATIVE AND JUDICIAL APPEALS

One of two methods may be appropriate for an individual to appeal a Department of Environmental Protection (DEP) decision -- administratively to the Board of Environmental Protection (Board) or judicially to Maine's Superior Court. The statutes related to a particular matter and who made the decision will dictate whether an administrative or judicial appeal is appropriate.

An applicant, or any person, aggrieved by a licensing decision made by the DEP Commissioner may file an administrative appeal that will be heard and considered by the Board. This FACT SHEET, in conjunction with consulting the statutory and regulatory provisions listed below, will further assist aggrieved persons with filing an administrative appeal with the Board.

Judicial appeals of Board or Commissioner decisions may be made to Maine's Superior Court under Maine's Administrative Procedures Act, 5 M.R.S.A. § 11000 et seq., and Maine Rule of Civil Procedure 80C. Judicial appeals of Board or Commissioner decisions are available when specifically provided for in statute or a decision is the final agency action on a matter. In all cases, a party's appeal must be filed with the Superior Court within 30-days of the Board or Commissioner's decision. A nonparty's appeal must be filed within 40-days of the decision. Failure to file a timely appeal will result in the Commissioner or Board's decision becoming final. Maine's Administrative Procedures Act, DEP statutes governing a particular matter and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADMINISTRATIVE APPEAL STATUTORY AND REGULATORY REFERENCES

38 M.R.S.A. § 341-D(4) and DEP Rule Chapter 2, § 21(B)

ADMINISTRATIVE APPEAL PERIOD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board.

ADMINISTRATIVE APPEAL FILING

Signed appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appellant must also send the DEP Commissioner and the applicant a copy of the documents. All the information listed below in the ADMINISTRATIVE APPEAL CONTENTS section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of the CONTENTS section will warrant evidence not currently in the administrative record being considered by the Board as part of an appeal.

ADMINISTRATIVE APPEAL CONTENTS

An appeal must contain the following information:

1. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding these issues must be provided in the notice of appeal.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To: June 02, 2020
Consultation Code: 05E1ME00-2020-SLI-1160
Event Code: 05E1ME00-2020-E-03968
Project Name: Medway Dam LIHI

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2020-SLI-1160

Event Code: 05E1ME00-2020-E-03968

Project Name: Medway Dam LIHI

Project Type: DAM

Project Description: Medway Dam LIHI

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/45.613475355929594N68.55277368078696W

Counties: Penobscot, ME

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Atlantic Salmon *Salmo salar* Population: Gulf of Maine DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2097	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Atlantic Salmon *Salmo salar* https://ecos.fws.gov/ecp/species/2097#crithab	Final

Brookfield

Brookfield Renewable
Black Bear Hydro Partners, LLC
1024 Central Street
Millinocket, ME 04462

Tel 207.723.4341
Fax 207.723.4597
www.brookfieldrenewable.com

January 19, 2018

Jeff Murphy
NOAA's National Marine Fisheries Service
17 Godfrey Drive
Orono, Maine 04473

Subject: Medway Project (FERC No. 2666); 5-year ESA Consultation

Dear Jeff:

On May 15, 2012, Black Bear Hydro Partners, LLC (Black Bear), licensee for the Medway Project on the West Branch of the Penobscot River, submitted a request to FERC to amend the Medway Project license to incorporate provisions for protecting Atlantic salmon. This followed consultation with the National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), Penobscot Indian Nation (PIN), and state fisheries agencies regarding the amendment request. On February 21, 2013, FERC issued an Order approving the license amendment request with modification; this Order incorporated pertinent sections of NMFS's Biological Opinion (filed on August 31, 2012) into the FERC license for the Medway Project. Paragraph A of the February 21, 2013 FERC Order also in part stated:

(A) The licensee shall consult with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources once every five years regarding the status of Atlantic salmon and other Endangered Species Act-listed fishes in the Penobscot River to ensure that operation of the Medway Project is consistent with the listing determinations for such species and with the then-current recovery objectives for such species.

To satisfy this 5-year requirement, Black Bear hereby asks if operation of the Medway Project is consistent with the listing determinations for Atlantic salmon and other Endangered Species Act-listed fishes on the Penobscot River and with the current recovery objectives for these species. As you know, upstream passage is not currently provided at the Medway Project for diadromous fish. In addition, although considered historic habitat, the West Branch is not included in critical habitat for Atlantic salmon.

Please provide your response by **February 19, 2018**. If you have any questions, please contact me by phone at 207-723-4341, x118 or by e-mail at kevin.bernier@brookfieldrenewable.com.

Sincerely,

Kevin Bernier
Senior Compliance Specialist

Cc. J. Cole, J. Trudell, K. Maloney, T. Zarrella, R. Dill, B. Brochu; Black Bear
S. Shepard; USFWS
J. Banks, D. McCaw; PIN
C. Wilson, M. Simpson, G. Wippelhauser, S. Ledwin; MDMR
J. Perry, N. Kramer, K. Dunham; MDIFW
S. McDermott, D. Dow; NMFS

Black Bear File: 2666/1

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

FEB 1 2 2018

Kevin Bernier
Senior Compliance Specialist
Brookfield Renewable
1024 Central Street
Millinocket, ME 04462

RE: Medway Hydroelectric Project (FERC No.2666)

Dear Mr. Bernier:

We received your January 19, 2018, letter concerning our current management objectives for listed Atlantic salmon in the West Branch of the Penobscot River in Maine. Your letter was submitted pursuant to the Medway Project's amended FERC license (February 21, 2013). The license requires Black Bear Hydro Partner's LLC (Black Bear) to consult with us every five years "regarding the status of Atlantic salmon and other Endangered Species Act-listed fishes in the Penobscot River to ensure that operation of the Medway Project is consistent with the listing determinations for such species and with the then-current recovery objectives for such species." The West Branch of the Penobscot is within the range of the Gulf of Maine Distinct Population Segment of Atlantic salmon that is listed as an Endangered Species (74 FR 29344), but is not part of the Atlantic salmon's designated Critical Habitat (74 FR 29300). While ESA listed Atlantic and shortnose sturgeon occur in the Penobscot River, these species are not known to occur in the West Branch.

The Medway Dam is the first dam on the West Branch of the Penobscot River. The West Branch is currently inaccessible to anadromous fish because no upstream fish passage facilities exist on the four lowermost dams in the West Branch, including Medway Dam. As summarized in Fay et al. (2006) the dams in the West Branch impound approximately 57% of the 98 river miles in the West Branch and exclude Atlantic salmon from approximately 28,000 units of rearing habitat. Because hydropower dams are typically constructed in reaches with moderate to high underlying gradients, approximately 41% of the available gradient in the West Branch is impounded. Coincidently, these moderate to high gradient reaches, if free-flowing, would likely constitute some of the highest value habitat for Atlantic salmon spawning and rearing. Currently, however, no salmon have been documented using the West Branch Penobscot watershed because of dams that block their ability to access it, including the Medway Dam. No stocking currently occurs or is proposed over the next five years given, in part, the lack of fish passage within the West Branch.

Improving connectivity and restoring access to historical habitats are integral parts of our strategy to stabilize populations of Atlantic salmon and to recover the Gulf of Maine DPS. In

April 2016, we and the U.S. Fish and Wildlife Service jointly issued a Draft Recovery Plan for the GOM DPS of Atlantic salmon[1]. The plan presents a recovery strategy based on the biological and ecological needs of the species as well as current threats and conservation accomplishments that affect its long-term viability. The plan highlights the enhancement of the connectivity between the ocean and freshwater habitats as one of seven distinct categories of actions required for the recovery of salmon. The importance of restoring connectivity between the Gulf of Maine and headwater streams is also highlighted in our Species in the Spotlight Five-Year Action Plan[2]. At this time, and in advance of the potential relicensing of the Medway Project in 2029, we are gathering information to further understand the potential significance of the West Branch in supporting Atlantic salmon recovery.

On August 15, 2017, we initiated a new status review for alewife and blueback herring (river herring) to determine whether listing either species as endangered or threatened under the ESA is warranted (82 FR 38672). We anticipate the new status review will be completed in 2019. If alewife or blueback herring were proposed to be listed under the ESA, you would need to consider the effects of operation of the Medway Project on these species.

Please consider this letter as confirmation that you have satisfied Paragraph A of the February 21, 2013 FERC amendment for consultation with us. If you have any questions concerning this letter, please contact Jeff Murphy at Jeff.Murphy@noaa.gov or 207-866-7379.

Sincerely,

Julie Crocker

Julie Crocker
Acting Assistant Regional Administrator
for Protected Resources

Ecc: Steve Shepard (USFWS)
Sean Ledwin (MDMR)
Daniel McCaw (PIN)

[1] U.S. Fish and Wildlife Service and NOAA-Fisheries. 2016. Draft recovery plan for the Gulf of Maine Distinct Population Segment of Atlantic salmon (Salmo salar). 61 pp.

[2] The draft Recovery Plan and Species in the Spotlight Five-Year Action Plan are both available at: http://www.nmfs.noaa.gov/stories/2015/12/spotlight_atlantic_salmon.html

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

October 19, 2020

Kevin Bernier
Brookfield Renewables
1024 Central Street
Millinocket, ME 04452

Via email: kevin.bernier@brookfieldrenewable.com

Re: Rare and exemplary botanical features in proximity to: Medway Hydroelectric Project Relicensing, West Branch Penobscot River, TA R7 WELS and Medway, Maine

Dear Mr. McCullough:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received October 6, 2020 for information on the presence of rare or unique botanical features documented from the vicinity of the project in TA R7 WELS and Medway, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. MNAP understands that this request is for recertification of the Medway Hydroelectric Project, and that there will be no changes to current impoundments or river flows. Therefore, MNAP has no concerns with the recertification for the Medway Hydroelectric Project and any botanical features along this stretch of the West Branch Penobscot River.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
90 BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-8044
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov

From:	Settele, Rebecca
To:	Bernier, Kevin
Cc:	Perry, John; Caron, Mark
Subject:	RE: Request for state-listed species
Date:	Wednesday, October 28, 2020 11:50:25 AM

Hi Kevin,

The following Endangered, Threatened, and Special Concern species have been documented in the general vicinity of the Medway Hydroelectric Project on the West Branch of the Penobscot River.

Brook Floater (State Threatened)

In addition, while a comprehensive statewide inventory for bats has not been completed it is likely that several of species of bats occur within the project area during migration and/or the breeding season.

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)

It is not known what effects, if any, the operations of the project may have on any of the above species.

MDIFW databases do not indicate the presence of other State-listed Endangered, Threatened, or Special Concern Species in project area; however, to our knowledge no, or limited, formal surveys have been conducted. It is possible that other rare species may be resident or transient in the project area based on location, habitats present, and life history requirements, including one or more rare species of migratory birds during spring and fall migrations. Therefore, the list above should not be considered all-inclusive.

Let us know if you need additional information.

Please send all future requests to IFWEnvironmentalreview@maine.gov.

Becca Settele
Wildlife Biologist
Maine Dept of Inland Fisheries & Wildlife
Wildlife Division
650 State St
Bangor ME 04401

Office (207)941-4438
Cell (207) 592-3846
mefishwildlife.com | facebook | twitter

From: Caron, Mark <Mark.Caron@maine.gov>
Sent: Friday, October 23, 2020 4:10 PM
To: Settele, Rebecca <Rebecca.Settele@maine.gov>
Subject: FW: Request for state-listed species

Enclosed please find several requests for HMAP species from Brookfield Hydro. Is this something you can handle and deal directly with them on?

Thanks,

Mark A. Caron
Regional Wildlife Biologist
Maine Department of Inland Fisheries & Wildlife
16 Cobb Road
Enfield, ME 04493
207-732-4132 ext: 4008
mefishwildlife.com | facebook | twitter

From: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Sent: Friday, October 23, 2020 4:02 PM
To: Caron, Mark <Mark.Caron@maine.gov>; Webb, Nathan <Nathan.Webb@maine.gov>
Subject: Request for state-listed species

Nathan/Mark - Brookfield Renewable is seeking information on state-listed fauna at three of its hydro project areas on the Penobscot River, including the Medway Project on the lower West Branch of the Penobscot River, and the Stillwater and Orono Projects on the Stillwater Branch of the Penobscot River. The purpose of collecting this information is for the continued certification of these Projects through the Low Impact Hydropower Institute. Attached are maps showing the project areas. The Maine Natural Areas Program (see e-mails below) has provided information (attached) on botanical features, but they indicated that MDIFW should be contacted for rare and exemplary zoological features at these Projects. Please let me know if there are any fees regarding this request, or if you need any additional information.

Thank you.

Kevin Bernier
Senior Compliance Specialist

Brookfield Renewable
1024 Central Street, Millinocket, ME 04462
C 207 951 5006
kevin.bernier@brookfieldrenewable.com
www.brookfieldrenewable.com

From: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Sent: Tuesday, October 20, 2020 5:25 PM
To: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: RE: site review

Hi Kevin,

MNAP comments for the three hydro recertifications are attached. Thank you.

Lisa St. Hilaire

Information Manager | Maine Natural Areas Program
Department of Agriculture, Conservation and Forestry
177 State House Station | Augusta, ME 04333 (**NEW** mailing address)
90 Blossom Lane | Augusta, ME 04333 (**NEW** physical address)
PHONE 207-287-8044 (Same phone!)
FAX 287-7548 (**NEW** FAX)

From: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Sent: Monday, October 19, 2020 1:34 PM
To: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: RE: site review

Yes please.

From: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Sent: Monday, October 19, 2020 1:25 PM
To: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: RE: site review

OK, thanks! We have stuff mapped along the Stillwater, though I haven't looked at the others yet. There should be no issues.

Do you want three separate responses?

Lisa St. Hilaire

Information Manager | Maine Natural Areas Program
Department of Agriculture, Conservation and Forestry
177 State House Station | Augusta, ME 04333 (**NEW** mailing address)
90 Blossom Lane | Augusta, ME 04333 (**NEW** physical address)
PHONE 207-287-8044 (Same phone!)
FAX 287-7548 (**NEW** FAX)

From: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Sent: Monday, October 19, 2020 1:23 PM
To: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: RE: site review

Lisa - no, the request is for continued certification of the Medway, Stillwater, and Orono Projects through the Low Impact Hydro Institute, and no, there are no changes being proposed to flows or impoundment levels.

Thank you, and please let me know if you have any additional questions.

Kevin Bernier

From: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Sent: Monday, October 19, 2020 1:05 PM
To: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: RE: site review

Hi Kevin,

Is this request for relicensing? Will there be any changes to flows or impoundments? Thanks,

Lisa St. Hilaire

Information Manager | Maine Natural Areas Program
Department of Agriculture, Conservation and Forestry
177 State House Station | Augusta, ME 04333 (**NEW** mailing address)
90 Blossom Lane | Augusta, ME 04333 (**NEW** physical address)
PHONE 207-287-8044 (Same phone!)
FAX 287-7548 (**NEW** FAX)

From: Bernier, Kevin <Kevin.Bernier@brookfieldrenewable.com>
Sent: Tuesday, October 6, 2020 12:57 PM
To: NAP, Maine <Maine.NAP@maine.gov>
Cc: Maloney, Kelly <Kelly.Maloney@brookfieldrenewable.com>
Subject: site review

Brookfield Renewable is seeking information on rare and exemplary botanical features in three of its hydro project areas on the Penobscot River, including the Medway Project on the lower West Branch of the Penobscot River, and the Stillwater and Orono Projects on the Stillwater Branch of the Penobscot River. The purpose of collecting this information is for the continued certification of these Projects through the Low Impact Hydropower Institute. Attached are maps showing the project areas. Please let me know if there are any fees regarding this request, or if you need any additional information.

Thank you.

Kevin Bernier
Senior Compliance Specialist

Brookfield Renewable
1024 Central Street, Millinocket, ME 04462
C 207 951 5006
kevin.bernier@brookfieldrenewable.com
www.brookfieldrenewable.com

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

November 3, 2020

Kelly Maloney
Brookfield Renewable
150 Main Street
Lewiston, Maine 04240

Subject: FERC No. 2712 – Stillwater, FERC No. 2710 – Orono & FERC No. 2666 – Medway Projects Comments to Water Quality Certification Terms and Conditions – LIHI Recertification

Dear Kelly Maloney:

In response to a written request by Black Bear Hydro Partners, LLC (Applicant, BBHP, Black Bear), a subsidiary of Brookfield Renewable, on September 24, 2020, related to recertification of three hydropower facilities by the Low Impact Hydro Institute (LIHI), the Maine Department of Environmental Protection (Department or MDEP) reviewed the Terms and Conditions of the Water Quality Certifications (WQC) for the Stillwater, Orono and Medway Projects. The Stillwater, Orono and Medway Hydroelectric Projects (Projects) are located on the Penobscot River in the Towns of Old Town, Orono, Medway, East Millinocket and TA-R7 respectively. These towns are all located in Penobscot County, Maine. Here, the Department outlines how BBHP has addressed the Conditions of the WQCs for the above Projects.

Stillwater Hydroelectric Project (SHP)

The Stillwater WQC was issued by the Department on December 30, 1992. On January 14, 2005, modifications to the existing WQC Conditions were made through Department Order #L-16773-33-F-M, for the installation of new flashboards at the SHP. Pertinent Conditions to LIHI Recertification and how the Applicant has addressed these Conditions are as follows:

1. MINIMUM FLOWS

On May 31, 2017, with support from the National Marine Fisheries Service (NMFS), the US Fish and Wildlife Service (USFWS), the Maine Department of Marine Resources (MDMR), and the Maine Department of Inland Fisheries and Wildlife (MDIFW), known collectively as the resource agencies, as well as The Penobscot Indian Nation (PIN), BBHP requested a temporary variance in minimum flow requirements at the Project in order to reduce flows in the vicinity of the upstream eel ladder and to perform upstream eel passage studies. The goal of this variance was to reduce flow through the flashboard gap at the west channel and to minimize associated false attraction of juvenile eels, thereby better directing eels to the entrance of the upstream eel ladder. Additionally, other alterations were made to the upstream eel passage with the intent of improving passage effectiveness. Upstream passage through the eel ladder markedly improved

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

in 2017 following these flow modifications. BBHP submitted an application to modify the minimum flow requirements associated with the SHP, proposing to eliminate specific minimum flow location requirements and direct the entire 70 cfs total minimum flow through the Stillwater B downstream fishway or powerhouse located in the east channel. The Department found the requested minor revision would enhance eel passage at the Project and found the proposal to be in accordance with all relevant Departmental standards and approved the application. All remaining Terms and Conditions for minimum flows are currently upheld by the applicant.

2. WATER LEVELS

In the 2005 Order, Condition 3 of the WQC was modified to stipulate impoundment water levels associated with the installation of flashboards at the Project. The modified Condition stipulates that water levels in the Stillwater project impoundment shall be maintained within one foot of full pond elevation, 94.65 feet msl, when flashboards are in place. During times of flashboard failure, the Applicant will maintain water levels at or above the spillway crest. During those times when flashboards are being replaced, the Applicant will maintain water levels within one foot of the spillway crest. All Terms and Conditions for water levels are currently upheld by the applicant.

3. FISH PASSAGE

The Lower Penobscot River Multi-party Settlement Agreement (Settlement Agreement) was filed with FERC on June 25, 2004, as part of the Penobscot River Restoration Project. The Settlement Agreement was intended to restore native sea-run fish and their habitat while also providing the opportunity to maintain comparable hydropower production from the Penobscot River. In this agreement, the owner of the Stillwater, Orono, Veazie and Great Works Projects, agreed to transfer the license of the Veazie and Great Works Projects to the multi-party Trust (Trust), which consisted of several federal, state and non-governmental organizations. The transfer of these licenses occurred in 2008. When the transfer occurred, BBHP could then expand their generating capacity at the SHP. Department Order #L-16773-35-J-N, dated August 18, 2011, approved the expansion of generating capacity at the SHP.

Condition 4 of the 2005 Order stipulates the installation and operation of fish passage facilities at the SHP in accordance with the Settlement Agreement dated June 2004. The Condition stipulates (A) the installation and operation of an upstream eel passage and (C) the continued operation of the downstream eel and (B) fish passage facilities. Contingent upon the purchase of the Veazie and Great Works Projects by the Trust, the Condition stipulates (D) the potential construction of an upstream fish passage at the SHP and (E) establishing a mitigation fund for fisheries impacts from the Project. Lastly the Condition stipulates (F) the submittal of final design and operational plans to all the resource agencies and the PIN.

On March 23, 2010, the Department issued Order #L-16773-33-I-C approving final design and operational plans for permanent upstream eel passage facilities at the SHP. These plans were submitted in compliance with Condition 4(F) of the 2005 Order. In September of 2015, the Department issued Order #L-16773-34-N-N, a maintenance and repair permit for the repair of 42 feet of spillway as well as the construction of the permanent upstream eel passage at the SHP.

As mentioned above, the Veazie and Great Works Project licenses were transferred to the Trust in 2008; therefore no upstream fish passage was constructed at the SHP. To date, the upstream eel passage installed in 2015 and the downstream fish passage are operated seasonally by BBHP. The Applicant has modified and improved upstream eel passage and downstream alosine passage at the SHP by conducting various fish passage studies from 2014 to the present.

The Department finds that BBHP has acknowledged the impacts that the SHP has on fisheries resources. Provided Black Bear continues to consult with the fisheries resource agencies, the Department finds that the Applicant has made provisions to mitigate the impacts of the SHP on fisheries resources in the Stillwater Branch of the Penobscot River. The Department finds that BBHP continues to abide by the Terms and Conditions of the SHP WQC.

Orono Hydroelectric Project (OHP)

The Orono WQC, #L-21917-33-A-N, was issued by the Department on December 15, 2004. Similar to the SHP, on August 18, 2011, modifications to the existing WQC Conditions and the generating capacity of the OHP were made through Department Order #L-21917-35-H-N. Pertinent Conditions to LIHI Recertification and how Black Bear has addressed these Conditions are as follows:

1. WATER LEVELS AND FLOWS

The 2011 Order stipulates impoundment water levels associated with the installation of increased generating capacity at the Project. The modified Condition 2(A) stipulates that the Orono Project will operate in run-of-river mode, with inflow approximately equal to outflow on an instantaneous basis, except for flashboard failure and replacement. The impoundment shall be maintained within one foot of full pond elevation, 73.0 feet msl, when flashboards are in place. During times of flashboard failure, the Applicant will maintain water levels at or above the spillway crest. During those times when flashboards are being replaced, the Applicant will maintain water levels within one foot of the spillway crest. The Condition additionally stipulates a minimum flow of 200 cfs to be maintained to the bypass reach. All Terms and Conditions for water levels and minimum flows are currently upheld by the applicant.

2. FISH PASSAGE

Similar to the SHP, the OHP was part of the Settlement Agreement discussed in the previous section of this letter. Similar to the terms of the Agreement for the SHP, when the transfer of the licenses for the Veazie and Great Works Projects occurred in 2008, BBHP could then expand their generating capacity at the OHP. The 2011 Department Order approved the expansion of generating capacity at the OHP according to the 2004 Agreement.

Condition 2 of the original WQC, #L-21917-33-A-N, stipulates the installation and operation of fish passage facilities at the SHP in accordance with the 2004 Settlement Agreement. The Condition stipulates (A) the installation and operation of an upstream eel passage, (C) downstream eel and (B) fish passage facilities. As mentioned above, similar to the SHP, contingent upon the purchase of the Veazie and Great Works Projects by the Trust, the Condition

stipulates (D) the potential construction of an upstream fish passage at the OHP and (E) establishing a mitigation fund for fisheries impacts from the Project. Lastly the Condition stipulates (F) the submittal of final design and operational plans to the resource agencies and the PIN as well as (G) passage effectiveness studies.

In Department Order #L-21917-33-C-C, dated January 16, 2008, the Department determined that the upstream eel passage facility design and operational plans for OHP addressed the requirements of Condition 2(F). On March 25, 2009, the Department issued order #L-21917-33-E-C, which approved downstream fish passage facility design and operational plans for the OHP. In Department Order #L-21917-33-L-C, the Department approved the construction of upstream fish passage facilities, approved the submittal of final design and operations plans, and approved passage effectiveness studies for the facilities. This demonstrated compliance by the Applicant with Condition 2 (A), Condition 2 (F), and Condition 2(G) respectively. Additionally, many fish passage studies for the SHP from 2014 to the present were conducted in coincidence with passage studies at the OHP.

By conducting various fisheries studies and the construction of various fish passage facilities at the Project, the Department finds that BBHP has acknowledged impacts that the Project has on fisheries resources and has made provisions to mitigate the impacts of the OHP to the fisheries of the Penobscot River. Provided that the Applicant continues to consult with the resource agencies on passage enhancements and future studies, the Department finds that the Applicant continues to abide by the Terms and Conditions of the OHP WQC.

Medway Hydroelectric Project (MHP)

The WQC for the Medway Project, #L-18893-33-B-N, was issued on December 23, 1998. On December 20, 2004 the Department authorized flashboard replacement through Order #L-18893-33-H-M. On May 17, 2005 the Department issued modifications to the WQC conditions through Order #L-18893-33-I-M. Pertinent Conditions to LIHI Recertification and how the Applicant has addressed these Conditions are as follows:

1. WATER LEVELS AND FLOWS

The December 2004 WQC amendment stipulates that impoundment water levels at the Project shall be maintained within 6 inches of full pond elevation, 260.3 feet msl, when flashboards are in place, and within 6 inches of the spillway crest elevation when flashboards are not in place. Condition 2 of the WQC stipulates that the Project will be operated as run of river and that outflow will be approximately equal to inflow at the facility at all times. All Terms and Conditions for water levels and minimum flows are currently upheld by BBHP.

2. EEL PASSAGE & FISH STUDIES

The 1998 WQC included several Special Conditions to assess the impacts of the MHP to fisheries resources. Condition 3 of the Medway WQC stipulates that the Applicant shall (A) install and operate upstream and downstream eel passage facilities and (B) submit final design and operational plans for the facilities to MDEP, in consultation with the resource agencies.

Condition 4 requires eel passage effectiveness monitoring studies. Condition 5 stipulates that the Applicant, in cooperation with the PIN and MDEP, conduct fish tissue sampling and collect sediment samples to assess the impacts of the Medway impoundment on Mercury and PCP accumulation in the impoundment and its fisheries resources.

On December 8, 2003, the Department issued Order #L-18893-33-F-C, which approved the final design and operational plans for the eel passages. Order #L-18893-33-E-C, dated August 27, 2002, approved the Applicants mercury and PCB sampling plans and the Department concluded that the Applicant complied with Condition 5(B). By Condition Compliance Order #L-18893-F-C, issued September 18, 2003, MDEP approved the Applicants plans for the design, installation and operation of permanent upstream eel passage facilities at the Medway Project. In accordance with this Order, a plan to study the effectiveness of the permanent upstream eel passage facilities was due no later than 60 days prior to the May 15, 2004 commencement of fishway operation. In Department Order #L-18893-33-G-C, March 5, 2004, MDEP concluded that the Applicant complied with Condition 4(B) and approved their eel passage effectiveness monitoring plan. Over the course of several years the Applicant had difficulty carrying out the eel passage effectiveness studies as proposed. Some of these difficulties included problems collecting the desired number of eels from the Penobscot River and acquiring proper consultation to use eels originating from other river basins. On October 6, 2020, FERC filed an Order approving the applicants downstream American eel study plan. This Order outlines Black Bear's plan to conduct downstream eel passage studies in the fall of 2020. These studies should be on-going, and the Applicant will consult on the results of the study with the resource agencies. If BBHP is unable to conduct the studies in the fall of 2020, they will be repeated in the fall of 2021.

Through the construction of eel passage facilities and ongoing studies at the Project, the Department finds that BBHP has acknowledged impacts that the Project has on fisheries resources and has made provisions to mitigate the impacts of the MHP to fisheries resources in the Penobscot River. Provided that the Applicant continues to consult with the resource agencies on passage enhancements and continued studies, the Department finds that the Applicant continues to abide by the Terms and Conditions of the MHP WQC.

Summary

Collectively, the Department finds that BBHP has made provisions to monitor and mitigate the impacts of these hydroelectric Projects on the waters of the Penobscot River. Further, over several years, BBHP and previous license holders of these Projects, have consulted and collaborated with the fisheries resource agencies to develop and enhance fish passage facilities and mitigate the impacts of these Projects. The Department finds that BBHP operates the SHP, OHP and the MHP under the Terms and Conditions set forth by each project's WQCs and has taken steps to fulfill the Conditions of each WQC. Therefore, the Department supports LIHI recertification of these three Projects.

Thank you for the opportunity to comment on the LIHI Recertification. If you have any questions, please contact me by phone at (207) 446-1619 or by email at Christopher.Sferra@maine.gov.

Sincerely,

Christopher O. Sferra
Hydropower Program, Project Manager
Maine Department of Environmental Protection