Brookfield

Brookfield Renewable
New England Regional Operations Center
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P.O. Box 280
Rumford, Maine 04276

Tel 207.364.3069
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www.brookfieldrenewable.com

September 27, 2019

VIA ELECTRONIC FILING

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: Rumford Falls Hydroelectric Project (FERC No. 2333)
Notice of Intent to File Application for a New License and Pre-Application Document

Rumford Falls Hydro LLC (RFH), a subsidiary of Brookfield Renewable (Brookfield), is submitting to the Federal Energy Regulatory Commission (FERC or Commission) a Notice of Intent (NOI) to file an application for a new license and a Pre-Application Document (PAD) for the Rumford Falls Hydroelectric Project (Project) (FERC No. 2333). The Project is a 44.5 megawatt, two-development hydroelectric facility located on the Androscoggin River in the Town of Rumford, Oxford County, Maine.

The current license for the Project was issued on October 18, 1994, and expires on September 30, 2024. Accordingly, RFH is pursuing a new license from FERC for the continued operation of the Project through the Commission's Integrated Licensing Process (ILP).

The PAD consists of two volumes. Volume I of the PAD contains public information. Volume II of the PAD includes detailed drawings of Project works (i.e., Exhibit F drawings and a single-line diagram). Information contained in these drawings is classified as Controlled Unclassified Information (CUI)/Critical Energy Infrastructure Information (CEII) under 18 CFR §388.113 and is not being made available to the public. RFH is filing Volume II with the Commission under the Commission's guidelines for filing CEII.

In conjunction with this electronic filing, RFH is providing the Commission with two courtesy copies of the NOI and PAD. In addition, concurrent with this filing, RFH is also providing a copy of this letter to all parties listed on the enclosed distribution list. The parties can download an electronic copy of the NOI and PAD from FERC's eLibrary system at https://www.ferc.gov/docs-filing/elibrary.asp by conducting a search using the docket number P-2333.

In support of the relicensing and in accordance with the Commission's regulations, RFH requests designation as the Commission's non-Federal representative for purposes of consultation under Section 7 of the Endangered Species Act. In addition, RFH requests designation as the Commission's non-Federal representative for purposes of consultation under Section 106 of the National Historic Preservation Act.

If you have any questions regarding this filing, please contact the undersigned at (207) 755-5605 or at randy.dorman@brookfieldrenewable.com.

Sincerely,

Randy Dorman
Licensing Specialist
Brookfield Renewable

Enclosures

Rumford Falls Project, FERC No. 2333
Pre-Application Document
Distribution List

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Pre-Application Document
Distribution List

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Rumford Falls Project, FERC No. 2333
Pre-Application Document
Distribution List

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Rumford Falls Project, FERC No. 2333
Pre-Application Document
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Maine Dept. of Agriculture, Cons. & Forestry
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Augusta, ME 04333-0038

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Christopher Sockalexis
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Presque Isle, ME 04769

Jennifer Pictou
THPO
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7 Northern Road
Presque Isle, ME 04769

William J. Nicholas, Sr
Chief
Passamaquoddy Tribe
Indian Township
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Princeton, ME 04668

Clarissa Sabattis
Chief
Houlton Band of Maliseet Indians
88 Bell Road
Littleton, ME 04730

NOTICE OF INTENT TO FILE APPLICATION FOR A NEW LICENSE
RUMFORD FALLS HYDROELECTRIC PROJECT
FERC PROJECT NO. 2333

Rumford Falls Hydro LLC

Rumford Falls Hydro LLC (RFH or Licensee), a subsidiary of Brookfield Renewable (Brookfield), Licensee of the existing Rumford Falls Hydroelectric Project (FERC Project No. 2333), hereby notifies the Federal Energy Regulatory Commission (FERC or Commission) of its intent to file an Application for New License for the Rumford Falls Hydroelectric Project.

Pursuant to 18 Code of Federal Regulations (CFR) §5.5(b) of the Commission's regulations, RFH provides the following information:

(1) Licensee's Name and Address:

Rumford Falls Hydro LLC
P.O. Box 280
Rumford, Maine 04276

(2) FERC Project Number:

FERC Project No. 2333

(3) License Expiration Date:

September 30, 2024

(4) Statement of Intent to File Application for New License:

RFH hereby unequivocally declares its intent to file an Application for a New License for the Rumford Falls Hydroelectric Project on or before September 30, 2022. The application will be for a power license. RFH will utilize the Commission's Integrated Licensing Process (ILP) in support of this relicensing.

(5) Principal Works of the Rumford Hydroelectric Project:

The Upper Station Development consists of: 1) a concrete gravity dam, having a 464-foot-long by 37-foot-high ogee type spillway section, with a crest elevation of 598.74 feet USGS, topped with 32-inch-high, pin-supported, wooden flashboards; (2) a forebay about 2,300 feet long by 150 feet wide; (3) a gatehouse with eight headgates (two headgates for each of the four penstocks), trashracks, and other appurtenant equipment; (4) four underground steel-plate penstocks, each about 110 feet long, three of which are 12 feet in diameter, and one 13 feet in diameter; (5) a masonry powerhouse integral with the dam, occupying two adjoining section of the dam: (a) the Old Station, about 30 feet wide by

110 feet long by 92 feet high, equipped with one horizontal generating unit with a capacity of 4,300kW, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three vertical generating units, two with a capacity of 8,100 kW each, and one with a capacity of 8,800 kW; (6) an impoundment, with a gross storage capacity of 2,900 acre-feet, surface area of about 419 acres, normal maximum headwater elevation of 601.24 feet, and tailwater elevation of 502.74 feet; (7) four overhead 11.5-kilovolt (kV) transmission lines; and (8) appurtenant facilities.

The Lower Station Development consists of: (1) a rock-filled, wooden-cribbed, and concrete-capped Middle Dam, having a 328.6-foot-long by 20-foot-high gravity spillway section, with a crest elevation at 502.74 feet with 16-inch-high, pin-supported, wooden flashboards; (2) a Middle Canal concrete headgate structure, located adjacent to the dam, about 120 feet long, with 10 steel headgates and a waste weir section perpendicular to the headgate structure, about 120 feet long, with a crest elevation of 502.6 feet with 10-inch-high flashboards; (3) a Middle Canal, about 2,400 feet long, with width ranging from 75 to 175 feet and depth from 8 to 11 feet; (4) a gatehouse containing two headgates, trashracks, and other appurtenant equipment; (5) two 12-foot-diameter, steel-plate penstocks, each extending about 815 feet to two cylindrical surge tanks, each about 36 feet in diameter by 50.5 feet high, and the penstocks continuing 77 feet to the powerhouse; (6) a masonry powerhouse, equipped with two identical vertical units, each with 7,600 kW capacity; (7) an impoundment, with a gross storage capacity of 141 acre-feet, surface area of about 21 acres, normal maximum headwater elevation of 502.7 feet, and tailwater elevation of 423.24 feet; (8) 600-foot-long, 11.5-kV generator leads; and (9) appurtenant facilities.

(6) Project Location:

The Rumford Falls Hydroelectric Project is a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in Rumford, Maine.

(7) Plant Installed Capacity:

The Project's authorized installed capacity is 44.5 megawatts (MW).

(8)(i) The names and mailing addresses of every county in which any part of the project is located and in which any federal facility that is used by the project is located are:

Oxford County
County Administrator
26 Western Avenue
South Paris, ME 04281

There are no federal lands or facilities associated with the Project.

(8)(ii)(A) The names and mailing addresses of every city, town, or similar political subdivision in which any part of the project is or is to be located and any federal facility that is or is to be used by the project is located:

Town of Rumford
145 Congress Street
Rumford, ME 04276

There are no federal lands or facilities associated with the Project.

(8)(ii)(B) The names and mailing addresses of every city, town, or similar political subdivision that has a population of 5,000 or more people and is located within 15 miles of the Project dam:

Town of Rumford
145 Congress Street
Rumford, ME 04276

(8)(iii) The names and mailing addresses of every irrigation district, drainage district, or similar special purpose political subdivision (A) in which any part of the project is located, and any Federal facility that is or is proposed to be used by the project is located, or (B) that owns, operates, maintains, or uses any project facility or any Federal facility that is or is proposed to be used by the project:

There are no irrigation or drainage districts or similar special purpose political subdivisions associated with or in the general area of the Project. There are no federal lands or facilities associated with the Project.

8(iv) The names and mailing addresses of every other political subdivision in the general area of the project that there is reason to believe would likely be interested in or affected by the notification:

There are no other political districts or subdivisions that are likely to be interested in or affected by the notification.

8(v) The names and mailing addresses of affected Indian tribes:

The Project includes no tribal land. No affected Indian tribes have been identified to date. Per 18 CFR §5.7, FERC will hold an initial tribal consultation meeting no later than 30 days of filing of the Notice of Intent (NOI) and PAD. The following is a listing of federally-recognized Native American tribes within the state of Maine:

Aroostook Bank of Micmacs
7 Northern Road
Presque Isle, ME 04769

Houlton Band of Maliseet Indians
88 Bell Road
Littleton, ME 04730

Penobscot Nation
12 Wabanaki Way
Indian Island, ME 04468

Passamaquoddy Tribe
Indian Township
PO Box 301
Princeton, ME 04668

Passamaquoddy Native American Nation
Pleasant Point Reservation
Tribal Building Office
Route No. 190
Perry, ME 04667

RFH is filing this NOI concurrently with a PAD. In accordance with 18 CFR §5.5(c), the Licensee is distributing notification of these filings to appropriate Federal, state, and interstate resource agencies, Indian tribes, local governments, and members of the public as identified in the distribution list of this PAD.

In accordance with 18 CFR §5.5(e), RFH is requesting designation as the non-federal representative for Endangered Species Act consultation and for consultation under Section 106 of the National Historic Preservation Act.

SUBSCRIPTION

This Notice of Intent to File an Application for New License for the Rumford Falls Hydroelectric Project, FERC No. 2333, is executed in the State of New York, County of Warren, by Tom Uncher, Vice President, Rumford Falls Hydro, LLC, 399 Big Bay Road, Queensbury, NY 12804, who, being duly sworn, deposes and says that the contents of this Notice of Intent are true to the best of his knowledge or belief and that he is authorized to execute this document on behalf of Rumford Falls Hydro, LLC. The undersigned has signed this Notice of Intent this 23rd day of September 2019.

RUMFORD FALLS HYDRO, LLC

By _____

Tom Uncher
Vice President

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the State of New York this 23rd day of September 2019.

Brenda J. Schermerhorn
(Notary Public)

(My Commission Expires July 2, 2023)/seal

BRENDA J. SCHERMERHORN
NOTARY PUBLIC, State of New York
Reg. No. 01SC6169934
Qualified in Saratoga County
My Commission Expires July 2, 2023

PRE-APPLICATION DOCUMENT
RUMFORD FALLS PROJECT
FERC PROJECT NO. 2333
VOLUME I OF II

RUMFORD FALLS HYDRO LLC
Rumford, Maine

SEPTEMBER 2019

PRE-APPLICATION DOCUMENT
RUMFORD FALLS PROJECT
FERC PROJECT NO. 2333

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APPENDICES

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RUMFORD FALLS PROJECT
FERC PROJECT NO. 2333

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RUMFORD FALLS PROJECT
FERC PROJECT NO. 2333

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Acronym List

µS/cm	microsiemens per centimeter
ac-ft	acre-feet
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
APE	area of potential effects
ARWC	Androscoggin River Watershed Council
BPL	Bureau of Parks and Land
CFR	Code of Federal Regulations
cfs	cubic feet per second
CRCP	Cultural Resources Contingency Plan
CRMP	Cultural Resources Management Plan
CZMA	Coastal Zone Management Act
DO	dissolved oxygen
EFH	essential fish habitat
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission or Commission
FPA	Federal Power Act
GSU	Generator Step-Up
HUC	Hydrologic Unit Code
ILP	Integrated Licensing Process
iPAC	Information Planning and Consultation (USFWS) system
kV	kilovolt
LWCF	Land and Water Conservation Fund
MDEP	Maine Department of Environmental Protection
MDIFW	Maine Department of Inland Fisheries and Wildlife
MDMR	Maine Department of Marine Resources
MDOC	Maine Department of Conservation
mg/L	milligram per liter
MHPC	Maine Historic Preservation Commission
msl	mean sea level
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt hours
NEPA	National Environmental Policy Act
NGOs	non-governmental organizations
NHPA	National Historic Preservation Act of 1966, as amended
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NPS	National Park Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NWI	National Wetland Inventory

PA	Programmatic Agreement
PAD	Pre-Application Document
PM&E	protection, mitigation and enhancement
ppm	parts per million
PSP	Proposed Study Plan
PURPA	Public Utility Regulatory Policies Act
QHEI	Qualitative Habitat Evaluation Index
RFH	Rumford Falls Hydro LLC
RM	river mile
RSP	Revised Study Plan
RTE	rare, threatened, and endangered
SCADA	System Control and Data Acquisition
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SD1	Scoping Document 1
SD2	Scoping Document 2
SHPO	State Historic Preservation Officer
TCP	traditional cultural properties
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Section 1
Introduction and Background

Rumford Falls Hydro LLC (RFH or Licensee), a subsidiary of Brookfield Renewable (Brookfield), is the Licensee of the 44.5 megawatt (MW) Rumford Falls Hydroelectric Project (FERC No. 2333), a multi-development hydroelectric facility located on the Androscoggin River in Rumford, Maine.

The Project is currently licensed by the Federal Energy Regulatory Commission (FERC or Commission) under the authority granted to FERC by Congress by the Federal Power Act (FPA), 16 United States Code (U.S.C.) §791(a), *et seq*., to license and oversee the operation of non-federal hydroelectric projects on jurisdictional waters and/or federal lands. The current operating license for the Project was issued on October 18, 1994 and expires on September 30, 2024. In accordance with the Commission's regulations, RFH must file its application with FERC no later than 24 months before the existing license expires.

In support of preparing an application for new license, RFH has elected to use FERC's Integrated Licensing Process (ILP). The ILP is designed to bring efficiencies to the licensing process by integrating the applicant's pre-filing consultation activities with FERC's National Environmental Policy Act (NEPA) scoping responsibilities. The Licensee believes that the ILP will be the most effective and efficient process for this relicensing.

The ILP is formally initiated by the Licensee's filing of this Pre-Application Document (PAD) and Notice of Intent (NOI) to relicense the Project with FERC. The PAD and NOI are being distributed to federal and state resource agencies, local governments, Indian tribes, and interested members of the public simultaneously with its filing with FERC. By regulation, the Licensee's PAD and NOI must be filed with FERC no later than September 30, 2019 (18 Code of Federal Regulations [CFR] §§5.5(d), 5.6(a)).

Under 18 CFR §5.8 of the Commission's regulations, FERC will review this PAD and associated NOI and, within 60 days of receipt, notice the commencement of the licensing proceeding, request comments on the PAD, and issue Scoping Document 1 (SD1). A public scoping meeting and site visit will be conducted within 30 days of issuing SD1, or within 90 days of the filing of this PAD.

Section 2
Purpose of the Pre-Application Document

This PAD fulfills the requirements of FERC's regulations defined in 18 CFR §5.6. The purpose of the PAD is to provide a description of the existing Project facilities and operations and any proposed structural or operational modifications to the Project. The PAD is also intended to be a source of existing, relevant, and reasonably available information and data related to the Project vicinity and the environment associated with the Project. Further, the PAD is intended to enable resource agencies and interested parties to identify potential resource issues and related informational needs, as well as develop study requests and study plans (18 CFR §5.6(b)).

2.1 Search for Existing, Relevant, and Reasonably Available Information

In support of preparing this PAD, HDR, on behalf of and in conjunction with RFH, has undertaken an extensive search to identify and review existing, relevant, and reasonably available information related to the Project. This search consisted of four primary activities:

1. A comprehensive search of RFH's files and available documentation;
2. The distribution of PAD information questionnaires to numerous parties, requesting the identification of any information related to the Project, the Project vicinity, and the region;
3. A review of publicly available information; and
4. Consultation with agencies and stakeholders believed to have information applicable to the Project vicinity.

The PAD questionnaire was distributed to stakeholders via email on May 30, 2019, and a follow-up email was sent on June 19, 2019. This email and responses to the questionnaire are included in Appendix A and are further described in Section 8.0 of this PAD. Relevant information obtained from this process has been summarized in the applicable resource sections of this PAD.

2.2 Consultation Performed to Date

Preliminary consultation with potential stakeholders was conducted in support of preparing this PAD to obtain available information, to determine the potential information gaps and study needs. As discussed in the previous section, parties with an interest in the Project were identified and sent

a PAD questionnaire, which requested that the recipient provide or direct RFH to existing, relevant, and reasonably available information regarding the Project and the surrounding environment and identify resource areas of interest.

Additional consultation was conducted with the Maine Department of Inland Fisheries and Wildlife (MDIFW), Maine Department of Conservation (MDOC), National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS) regarding rare, threatened, and endangered (RTE) species, critical habitat, essential fish habitat (EFH), and unique or exemplary natural communities, as applicable. Information was received from USFWS, NMFS and MDIFW and has been included in Section 5.7 of this PAD. Consultation with the Maine Coastal Program was conducted to ensure the Project is not located in the coastal zone as identified by the State's coastal zone management plan. By email dated August 16, 2019, Todd Burrowes of the Maine Department of Marine Resources (MDMR) confirmed that the Rumford Falls Project was outside of Maine's Coastal Zone Management Act (CZMA)-designated coastal zone and a CZMA consistency review was not required. This consultation has been compiled into Appendix A of this PAD.

The resource areas identified during this preliminary consultation, as well as an initial list of areas of interest and proposed studies are presented in Section 6.0 of this PAD.

Section 3
Process Plan and Schedule

3.1 Process Plan and Schedule

RFH has elected to use FERC's ILP in support of obtaining a new license for the Project. In accordance with 18 CFR §5.6(d)(1), a process plan and schedule has been developed (Table 3.1-1).

TABLE 3.1-1
RUMFORD FALLS HYDROELECTRIC PROJECT ILP PROCESS AND SCHEDULE

Activity	Responsible Parties	Time Frame	Estimated Date
File NOI and PAD (18 CFR §5.5(d))	RFH	As early as five and one half but no later than five years prior to license expiration	September 30, 2019
Initial Tribal Consultation Meeting (18 CFR §5.7)	FERC	No later than 30 days of filing NOI/PAD	October 30, 2019
Issue notice of NOI/PAD and SD1 (18 CFR §5.8(a))	FERC	Within 60 days of filing NOI/PAD	November 29, 2019
Conduct Scoping meetings and site visit (18 CFR §5.8(b) (viii))	FERC	Within 30 days of NOI/PAD notice and SD1 issuance	December 30, 2019
Comments on PAD, SD1, and Study Requests (18 CFR §5.9(a))	Stakeholders	Within 60 days of NOI/PAD notice and issuance of SD1	January 28, 2020
File Proposed Study Plan (PSP) (18 CFR §5.11(a))	RFH	Within 45 days of deadline for filing comments on PAD	March 13, 2020
Issuance of Scoping Document 2 (SD2), if necessary (18 CFR §5.10)	FERC	Within 45 days of deadline for filing comments on SD1	March 13, 2020
Study Plan Meetings (18 CFR §5.11(e))	RFH	First meeting to be held within 30 days of filing PSP	April 13, 2020
Comments on PSP (18 CFR §5.12)	Stakeholders	Within 90 days of filing PSP	June 11, 2020
File Revised Study Plan (RSP) (18 CFR §5.13(a))	RFH	Within 30 days of deadline for comments on PSP	July 11, 2020
Comments on RSP (18 CFR §5.13(b))	Stakeholders	Within 15 days following RSP	July 27, 2020
Issuance of Study Plan Determination (18 CFR §5.13(c))	FERC Director	Within 30 days of RSP filing	August 10, 2020

Activity	Responsible Parties	Time Frame	Estimated Date
Formal Study Dispute Resolution Process if requested (18 CFR §5.14(a))	Agencies and Tribes with mandatory conditioning authority	Within 20 days of Study Plan Determination	August 31, 2020
Dispute Resolution Panel Convenes (18 CFR §5.14(d))	Dispute Resolution Panel	Within 20 days of a notice of study dispute	September 21, 2020
Comments on Study Plan Disputes (18 CFR §5.14(i))	RFH	Within 25 days of notice of study dispute	September 24, 2020
Third Panel Member Selection Due (18 CFR §5.14(d)(3))	Dispute Resolution Panel	Within 15 days of when Dispute Resolution Panel convenes	October 5, 2020
Dispute Resolution Panel Technical Conference (18 CFR §5.14(j))	Dispute Resolution Panel, RFH, Stakeholders	--	Prior to engaging in deliberative meetings
Dispute Resolution Panel Findings and Recommendations (18 CFR §5.14(k))	Dispute Resolution Panel	No later than 50 days after notice of dispute	October 19, 2020
Study Dispute Determination (18 CFR §5.14(1))	FERC Director	No later than 70 days after notice of dispute	November 9, 2020
Conduct First Season of Studies (18 CFR §5.15)	RFH	--	Summer/Fall 2020
Study Progress Report (18 CFR §5.15(b))	RFH	Provide summary updates every three months	Various dates
Initial Study Report (18 CFR §5.15(c))	RFH	Pursuant to the Commission-approved study plan or no later than 1 year after Commission approval of the study plan, whichever comes first	August 10, 2021
Initial Study Report Meeting (18 CFR §5.15(c)(2))	RFH and Stakeholders	Within 15 days of filing the initial study report	August 25, 2021
File Initial Study Report Meeting Summary (18 CFR §5.15(c)(3))	RFH	Within 15 days of initial study report meeting	September 9, 2021
File Meeting Summary Disagreements (18 CFR §5.15(c)(4))	Stakeholders	Within 30 days of study results meeting summary	October 9, 2021

Activity	Responsible Parties	Time Frame	Estimated Date
File Responses to Meeting Summary Disagreements (18 CFR §5.15(c)(5))	RFH	Within 30 days of filing meeting summary disagreements	November 8, 2021
Resolution of Disagreements (18 CFR §5.15(c)(6))	FERC Director	Within 30 days of filing responses to disagreements	December 8, 2021
Conduct Second Season of Studies (if necessary)	RFH	--	Summer/Fall 2021
File Updated Study Report (18 CFR §5.15(f)) (if necessary)	RFH	Pursuant to the approved study plan or no later than 2 years after Commission approval, whichever comes first	August 10, 2022
Updated Study Report Meeting (18 CFR §5.15(f)) (if necessary)	RFH and Stakeholders	Within 15 days of updated study report	August 25, 2022
File Updated Study Report Meeting Summary (18 CFR §5.15(f)) (if necessary)	RFH	Within 15 days of study report meeting	September 9, 2022
File Meeting Summary Disagreements (18 CFR §5.15(f))	Stakeholders	Within 30 days of study results meeting summary	October 9, 2022
File Responses to Meeting Summary Disagreements (18 CFR §5.15(f))	RFH	Within 30 days of filing meeting summary disagreements	November 8, 2022
Resolution of Disagreements (18 CFR §5.15(f))	FERC	Within 30 days of filing responses to disagreements	December 8, 2022
File Preliminary Licensing Proposal (18 CFR §5.16(a))	RFH	No later than 150 days prior to the deadline for filing the final license application	May 3, 2022
Comments on Preliminary Licensing Proposal Due (18 CFR §5.16(e))	Stakeholders	Within 90 days of filing Preliminary License Proposal or draft license application	August 1, 2022
License Application Filed (18 CFR §5.17)	RFH	No later than 24 months before the existing license expires	September 30, 2022

Notes:

1 If the due date falls on a weekend or holiday, the deadline is the following business day.
2 All Director's determinations are subject to request for rehearing to the Commission pursuant to 18 CFR §375.301(a) and 385.713. Any request for rehearing must be filed within 30 days of determination.
3 Shaded actions are not necessary if there are no study disputes.
4 Dash (-) indicates cell intentionally left blank.

3.2 Scoping Meeting and Site Visit

Pursuant to 18 CFR §5.8(b), FERC will hold a Scoping Meeting (estimated to be on or before December 29, 2019) in accordance with its responsibilities under NEPA. The Scoping Meeting will be held at a location to be selected by FERC in the general vicinity of the Project. FERC will issue a public notice regarding the Scoping Meeting that will include the meeting date, meeting location, and additional instructions for attending the meeting.

3.3 Participation in the ILP

Notice of the filing of the NOI and this PAD has been provided to representatives of state and federal resource agencies, local governments, Indian tribes, non-governmental organizations (NGOs), and members of the public that may have an interest in participating in the relicensing of the Project. These stakeholders are identified in the PAD distribution list.

Section 4
Project Location, Facilities, and Operations

4.1 Applicant Contact Information

The following provides the name, business address, and telephone number of the designated person authorized to act as agent for the Licensee throughout the licensing process.

Tom Uncher
Vice President
Rumford Falls LLC
399 Big Bay Road
Queensbury, NY 12804

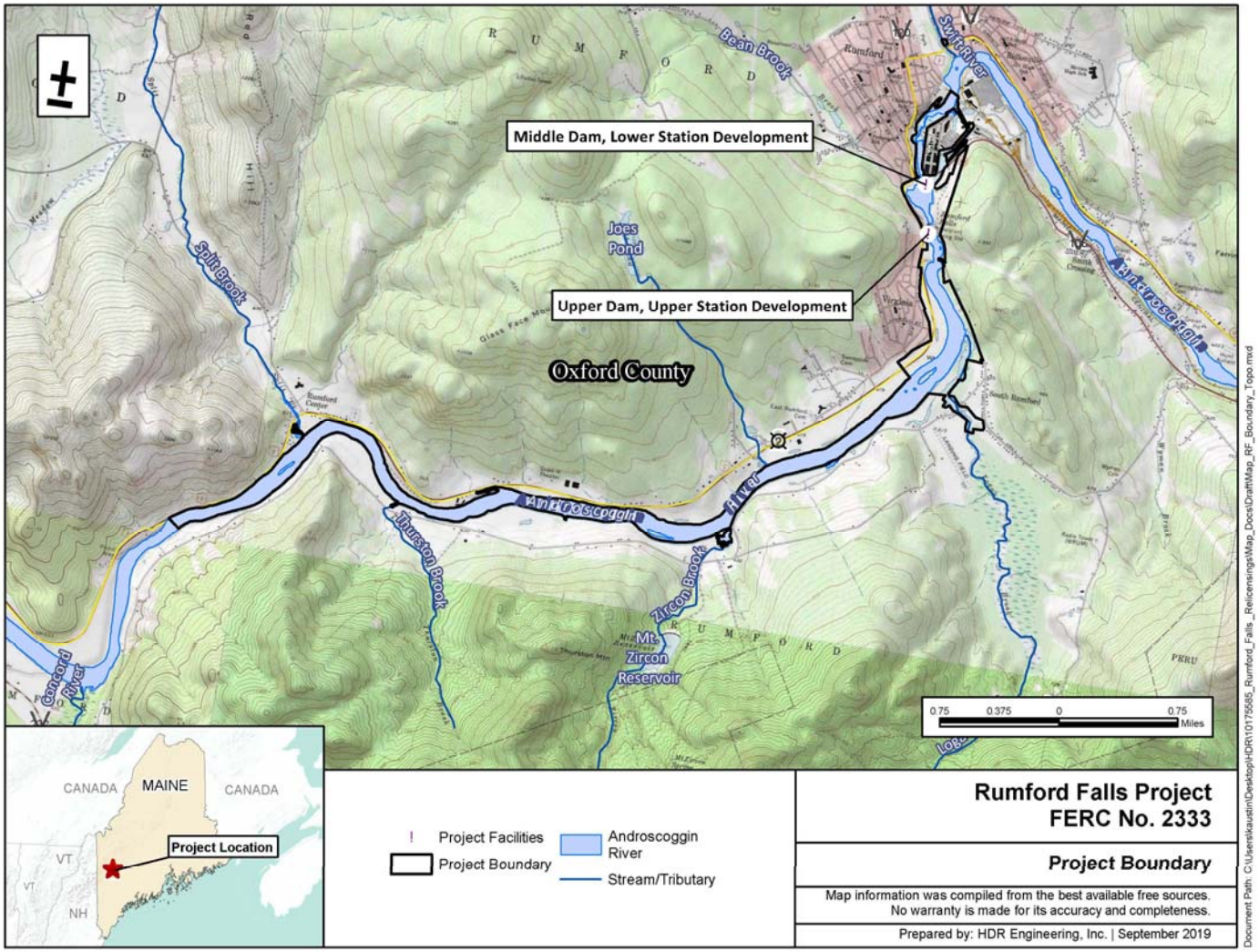
Copies of all correspondence should also be sent to:

Randy Dorman
Licensing Specialist
Brookfield Renewable
150 Main Street
Lewiston, ME 04240
(207) 755-5605

4.2 Project Location and Lands

The Project is located at River Mile (RM) 80 on the Androscoggin River in Oxford County in the town of Rumford, Maine. A map of the Project vicinity is provided in Figure 4.2-1. Exhibit G drawings for the Project depict the Project Boundary and principal Project features and are included in Appendix B.

FIGURE 4.2-1
MAP OF RUMFORD FALLS PROJECT VICINITY



4.3 Existing Project Facilities

The Project consists of two discrete developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the Project is 44.5 MW. The Upper Station Development's total installed nameplate capacity is 29.3 MW, with a maximum hydraulic capacity of 4,550 cubic feet per second (cfs). The Lower Station Development's total nameplate capacity is 15.2 MW with a maximum hydraulic capacity of 3,100 cfs.

All primary transmission lines associated with the Project deliver electricity from both the Upper and Lower Station Developments to the RFH Generator Step-Up (GSU) substation. The voltage is stepped up from 11.5 kilovolts (kV) to 115 kV by passing through the 66 Megavolt-Ampere (MVA) generator step-up transformer. This transformer is tied to Central Maine Power's transmission point of interconnect.

The facilities and structures of the Project are discussed in detail below and are also depicted in the project drawings and single-line diagram in Volume II of II of this PAD, which are being filed separately from this PAD as Controlled Unclassified Information (CUI)/Critical Energy Infrastructure Information (CEII) in accordance with 18 CFR §388.113.

4.3.1 Upper Station Development

The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The Upper Station Development has a total installed nameplate capacity of 29.3 MW and a maximum hydraulic capacity of 4,550 cfs.

The Upper Station Development consists of: 1) a concrete gravity dam, having a 464-foot-long by 37-foot-high ogee type spillway section, with a crest elevation of 598.74 feet National Geodetic Vertical Datum of 1929[1], topped with 32-inch-high, pin-supported, wooden flashboards and an Obermeyer spillway system; (2) a forebay about 2,300 feet long by 150 feet wide; (3) a gatehouse

[1] Brookfield is currently reviewing and updating Project elevations to new datum. These changes will be reflected in the Final License Application.

with eight headgates (two headgates for each of the four penstocks)[2], trashracks, and other appurtenant equipment; (4) four underground steel-plate penstocks, each about 110 feet long, three of which are 12 feet in diameter, and one 13 feet in diameter; (5) a masonry powerhouse integral with the dam, occupying two adjoining section of the dam: (a) the Old Station, about 30 feet wide by 110 feet long by 92 feet high, equipped with one horizontal generating unit with a capacity of 4,300 kW, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three vertical generating units, two with a capacity of 8,100 kW each, and one with a capacity of 8,800 kW; (6) an impoundment, with a gross storage capacity of 2,900 acre-feet, surface area of about 419 acres, normal maximum headwater elevation of 601.24 feet, and tailwater elevation of 502.74 feet; (7) four overhead 11.5 kV transmission lines; and (8) appurtenant facilities.

4.3.1.1 Dam and Spillway

The dam at the Upper Station Development is a concrete gravity structure, which utilizes 32-inch, pin-type, break-away flashboards and a 271-foot-wide Obermeyer spillway system. The crest of the concrete dam is at elevation 598.74 feet, and with flashboards in place (the normal operating mode), spillage occurs when the water surface elevation exceeds 601.24 feet. The length of the ogee-type spillway is 464 feet. The concrete dam rises approximately 37 feet from its bedrock foundation and is approximately 42 feet wide at its base. The rounded crest of the spillway is 10 feet wide. The downstream face of the dam slopes downward before reaching a lip at elevation 569.7 feet, and then slopes sharply downward to the base of the dam. The Obermeyer section is used to discharge flow following a station trip to maintain river flow. The dam forms one side of the forebay of the Upper Station, the other side of the forebay consists of a concrete wall along the shoreline.

4.3.1.2 Intake

The gatehouse to the Upper Station contains power-operated headgate hoists and gates, two for each of the four active penstocks. Screening of flow through the Upper Station is provided by 3-inch, open-spaced, coarse trashracks.

[2] There are also two additional unused gates associated with a retired fifth penstock.

The four penstocks are made of riveted-plate steel, three of which are 12 feet in diameter and one of which is 13 feet in diameter. Each penstock is approximately 110 feet in length, extending underground from the gatehouse to the powerhouse.

4.3.1.3 Powerhouse

There is a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, which is about 30 feet wide by 110 feet long by 92 feet high, and (b) the New Station, which is about 60 feet wide by 140 feet long by 76 feet high.

4.3.1.4 Turbines and Generators

The Old Station contains one horizontal Francis turbine (Unit 4) with a capacity of 4.3 MW and the New Station contains three vertical Francis turbines (Unit 1-3), two with a capacity of 8.1 MW and one with a capacity of 8.8 MW (Table 4.3-1). Information on generators is provided in Table 4.3-2.

TABLE 4.3-1
UPPER DEVELOPMENT POWER PLANT DESCRIPTION – TURBINES

	Unit 1	Unit 2	Unit 3	Unit 4
Capacity (MW)	8.1	8.1	8.8	4.3
Type	Vertical, Francis	Vertical, Francis	Vertical, Francis	Horizontal, Francis
Manufacturer	Wellman-Seaver-Morgan	Wellman-Seaver-Morgan	I.P. Morris	Holyoke-Baldwin
Year installed	1918	1918	1926	1910
Rated power (hp)	11,595	11,595	11,765	6,000
Rated head (ft)	96	96	97	97
Runner material	Stainless steel	Stainless steel	Carbon steel	Bronze
Runner manufacturer	Voith	Voith	American Hydro	Original

TABLE 4.3-2
UPPER DEVELOPMENT POWER PLANT DESCRIPTION – GENERATORS

	Unit 1	Unit 2	Unit 3	Unit 4
Type	**Vertical**	**Vertical**	**Vertical**	**Horizontal**
Manufacturer	Westinghouse	Westinghouse	Westinghouse	Westinghouse
Year installed	1918	1918	1926	1910
Rating (MVA)	8.5	8.5	9.7	4.5
Voltage (kV)	11.5	11.5	11.5	4.2
Speed (rpm)	200	200	200	400
Power Factor	0.95	0.95	0.9	0.9*

*0.9 by design, FERC Authorized Installed Capacity is based on 0.95 PF.

4.3.1.5 Tailrace

The tailrace of the Upper Station Development is within the Middle Dam impoundment. The normal tailwater elevation is 502.74 feet.

4.3.1.6 Bypass reach

The upper bypass reach is 650 feet long and is steep with exposed bedrock. Leakage from the dam provides a minimum flow of approximately 1 cfs.

4.3.1.7 Impoundment

The normal maximum surface area of the Upper Dam impoundment is 419 acres, with a corresponding normal maximum surface elevation of 601.24 feet above mean sea level (msl). Surface elevation is automatically maintained unless inflow exceeds the maximum plant capacity. The estimated gross storage capacity of the Upper Dam impoundment is 2,900 acre-feet (ac-ft) with flashboards. Since the Upper Station Development is operated as run-of-river, there is no usable storage capacity associated with this impoundment.

4.3.1.8 Transmission Lines

A total of four (Lines 1 through 4) 11.5 kV transmission lines extend from the Upper Station to the GSU substation; however, only two are currently energized (Lines 2 and 3). Line 2 extends approximately 4,500 feet, sharing steel towers with de-energized Line 1. Line 3 extends

approximately 4,200 feet on single circuit steel towers. Line 4 is approximately 3,100 feet long and was owned by Catalyst Paper and abandoned.

4.3.2 Lower Station Development

The principal features of the Lower Station Development consist of the Middle Dam, the Middle Canal headgate structure with a waste weir, the Middle Canal, a gatehouse, two penstocks, a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 15.2 MW and a total maximum hydraulic capacity of 3,100 cfs.

The Lower Station Development consists of: (1) a rock-filled, wooden-cribbed, and concrete-capped Middle Dam, having a 328.6-foot-long by 20-foot-high gravity spillway section, with a crest elevation at 502.74 feet with 16-inch-high, pin-supported, wooden flashboards; (2) a Middle Canal concrete headgate structure, located adjacent to the dam, about 120 feet long, with 10 steel headgates and a waste weir section perpendicular to the headgate structure, about 120 feet long, with a crest elevation of 502.6 feet with 12-inch-high flashboards; (3) a Middle Canal, about 2,400 feet long, with width ranging from 75 to 175 feet and depth from 8 to 16 feet; (4) a gatehouse containing two headgates, trashracks, and other appurtenant equipment; (5) two 12-foot-diameter, steel-plate penstocks, each extending about 815 feet to two cylindrical surge tanks, each about 36 feet in diameter by 50.5 feet high, and the penstocks continuing 77 feet to the powerhouse; (6) a masonry powerhouse, equipped with two identical vertical units, each with 7,600 kW capacity; (7) an impoundment, with a gross storage capacity of 141 acre-feet, surface area of about 21 acres, normal maximum headwater elevation of 502.74 feet, and tailwater elevation of 423.24 feet; (8) 600-foot-long, 11.5 kV generator leads; and (9) appurtenant facilities.

4.3.2.1 Dam/Spillway

The Middle Dam is a rock-filled, wood-crib, gravity-type dam, capped and reinforced with concrete. The elevation of the Middle Dam crest with flashboards is at normal tailwater elevation of the Upper Station Development (502.74 feet). Sixteen-inch, pin-type flashboards are used on this dam to raise the level of the water to decrease water velocities in the canal. The length of the dam spillway is 328.6 feet. The dam rises approximately 20 feet above the river bottom and is

approximately 105 feet in cross-sectional width at its base, including a gently sloping concrete apron on the downstream side that is approximately 38 feet wide. The cross-section of the dam is roughly triangular, with a concrete lip on the downstream face at elevation 490.7 feet.

4.3.2.2 Middle Canal

The Middle Dam diverts river flow to the Middle Canal, but flows in excess of the Lower Station turbine capacity (approximately 3,100 cfs) are spilled over the Middle Dam. The Middle Canal headgate structure is adjacent to the Middle Dam and is approximately 120 feet wide and contains a set of 10 headgates. The structure consists primarily of concrete masonry with steel/wooden gates. Within the Middle Canal and perpendicular to the Canal headgates is a waste weir, which allows floating debris to be diverted back to the natural river channel. There is normally a one-foot flashboard on the crest of the waste weir, which brings the typical water surface elevation up to elevation 502.6 feet. The spillway of the waste weir is approximately 120 feet long. The Middle Canal is approximately 2,400 feet long, with widths ranging from 75 to 175 feet and depths ranging from 8 to 16 feet.

4.3.2.3 Intakes

The Lower Station gatehouse contains two (with provisions for a third) motorized gate hoist and headgates for the Lower Station penstocks. Flow to the Lower Station is screened through 2.6-inch, open-spaced trashracks. The canal level control transmitter to the system control and data acquisition (SCADA) system is located in the gatehouse. From the gatehouse, two 12-foot diameter, welded-plate, steel penstocks extend for approximately 815 feet to surge tanks and then an additional 77 feet downward to the powerhouse. The two steel surge tanks are 36 feet in diameter and 50.5 feet tall as measured from the surface to the ground.

4.3.2.4 Powerhouse

The masonry powerhouse is 78 feet long and 40 feet wide.

4.3.2.5 Turbines and Generators

The Lower Station powerhouse contains two identical vertical Francis turbines (Unit 1 and 2), each with 7.6 MW capacity (Table 4.3-3). Information on generators is provided in Table 4.3-4.

TABLE 4.3-3
LOWER DEVELOPMENT POWER PLANT DESCRIPTION – TURBINES

	Unit 1	Unit 2
Capacity (MW)	7.6	7.6
Type	Vertical, Francis	Vertical, Francis
Manufacturer	Allis Chalmers	Allis Chalmers
Year installed	1954	1954
Rated power (hp)	11,800	11,800
Rated head (ft)	80	80
Runner material	Stainless steel	Stainless steel
Runner manufacturer	Voith	Voith

*Both Unit 1 and 2 were upgraded in the early 2000s.

TABLE 4.3-4
LOWER DEVELOPMENT POWER PLANT DESCRIPTION – GENERATORS

	Unit 1	Unit 2
Type	Vertical	Vertical
Manufacturer	Allis Chalmers	Allis Chalmers
Year installed	1954	1954
Rating (MVA)	8	8
Voltage (kV)	11.5	11.5
Speed (rpm)	180	180
Power Factor	0.8	0.8

4.3.2.6 Tailrace

The tailrace is located in the natural Androscoggin River channel. Flow through the two turbines returns to the river after crossing an approximately 25-foot-wide concrete tailrace apron. The normal tailwater elevation is 423.24 feet.

4.3.2.7 Bypass Reach

The Middle Dam bypassed reach is 2,865 feet long and consists of bedrock outcroppings and steep cascades. Leakage from the dam provides a minimum flow of approximately 21 cfs.

4.3.2.8 Impoundment

The normal maximum surface area of the Middle Dam impoundment is 21 acres, with a corresponding normal maximum surface elevation of 502.74 feet above msl. The estimated gross storage capacity of the impoundment is 141 ac-ft with flashboards. As with the Upper Dam impoundment, since the Lower Station Development is operated as run-of-river, there is no usable storage capacity. Depths in the impoundment vary from 10 to 20 feet.

4.3.2.9 Transmission Line

Electricity from the Lower Station is submitted to the GSU substation by 11.5 kV Lines 5 A and B, which run 600 feet parallel on the same tower.

4.3.3 Estimate of Dependable Capacity and Average Energy Production

The Project's dependable capacity, based on the ISO New England Seasonal Claimed Capability ratings listed in the 2018-2027 Forecast Report of Capacity, Energy, Loads, and Transmission (CELT Report) is 23.09 MW for the summer and 34.54 MW for winter (ISO New England 2018). Average monthly and annual generation of the Project is presented in Table 4.3-5.

TABLE 4.3-5
RUMFORD FALLS HYDROELECTRIC PROJECT AVERAGE MONTHLY AND ANNUAL GENERATION (MWH), 2014-2018.

Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Annual
2014	24,932	21,256	22,985	27,027	31,656	26,570	26,204	23,657	14,532	21,361	22,736	23,587	**286,503**
2015	26,468	23,836	22,265	27,425	25,639	30,526	22,332	17,703	11,528	17,204	17,967	23,694	**266,586**
2016	21,224	15,829	20,991	25,131	25,181	16,035	15,424	12,502	11,151	11,800	16,541	19,906	**211,715**
2017	24,204	22,876	23,708	23,724	31,724	24,665	25,032	18,884	13,842	12,994	24,307	22,874	**268,833**
2018	26,050	23,816	25,492	25,102	28,409	14,658	17,011	19,685	17,079	20,704	23,089	22,078	**263,171**
Average	**24,575**	**21,522**	**23,088**	**25,682**	**28,522**	**22,491**	**21,201**	**18,486**	**13,627**	**16,812**	**20,928**	**22,428**	**259,362**

4.3.4 Existing Recreational Facilities

A carry-in canoe facility was implemented per Article 407 of the current license, which is located at the Carlton Bridge site and includes a parking area and a launching ramp with Americans with Disabilities Act (ADA) access. It is owned and operated by RFH. RFH also owns the Veteran's Park in the Town of Rumford. RFH owns an ATV trail within the Project Boundary, which is used

solely as a recreation trail, to pass by foot, ATV, or snowmobile. The Rumford Riders ATV Club maintains the trail and posts signage.

4.4 Project Operations

Flows on the Androscoggin River are regulated by non-project and non-RFH upstream storage reservoirs including: Umbagog Lake, Rangeley Lake, Mooselookmeguntic, Richardson, and Aziscohos. The Upper River Storage Projects Settlement Agreement (1998) established minimum and maximum flows, whitewater releases, and impoundment level targets at the storage projects.

Article 401 requires the Licensee to operate the Project in a run-of-river mode within 1 foot of full pond elevation (601.24 feet U.S. Geological Survey [USGS]) at the Upper Dam impoundment and 502.74 feet USGS at the Middle Dam impoundment) and shall at all times act to minimize the fluctuations of the reservoir surface elevation (i.e., maintain a discharge from the Project so that, at any point in time, flows immediately downstream from the Project tailraces approximate the sum of the inflows to the Project reservoirs, minus withdrawals).

High flows often occur during the spring snow melt and subsequent run-off and occasionally during heavy autumn rains. Outside of the winter, during periods of very high flow, the Obermeyer section at the Upper Dam is dropped to crest level and additional flow is directed into the bypassed reach. At the Lower Development, flows in excess of the Lower Station turbine capacity are spilled over the Middle Dam and are directed to the bypassed reach. If flows are high enough, portions of the flashboards may break away, causing the impoundment level to drop, eventually to the dam crest elevation once flows subside. If the flashboards at the Project are damaged during high flow events, they are replaced as soon as flow returns to normal.

During low flows, the Licensee releases a minimum flow of 1 cfs from the Upper Dam and 21 cfs from the Middle Dam into the bypassed reaches per Article 402.

No changes to the Project's current operations are being proposed at this time.

4.5 Outflow Records

Table 4.5-1 provides a summary of the monthly and average flows for the previous five years.

TABLE 4.5-1
RUMFORD FALLS HYDROELECTRIC PROJECT AVERAGE MONTHLY AND ANNUAL OUTFLOW, 2014 - 2018

Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Annual
2014	3,779	3,037	2,977	10,680	9,390	4,545	3,869	3,196	1,880	3,648	3,054	4,221	**4,530**
2015	3,768	3,391	2,729	8,473	4,017	6,999	3,031	2,214	1,620	2,714	2,482	3,589	**3,740**
2016	4,372	4,793	6,875	5,365	3,900	2,117	1,939	1,630	1,530	1,580	2,424	2,711	**3,270**
2017	3,014	4,120	4,835	12,400	10,690	3,373	3,728	2,187	1,656	4,417	4,918	3,014	**4,860**
2018	4,514	4,192	4,555	8,137	6,964	1,860	2,197	2,518	2,148	2,554	5,180	4,392	**4.100**
Average	**3,890**	**3,910**	**4,390**	**9,010**	**6,990**	**3,780**	**2,950**	**2,350**	**1,770**	**2,980**	**3,610**	**3,590**	**4,100**

4.6 Current License Requirements and Compliance History

4.6.1 Current License Requirements

The current Project license, which was issued on October 18, 1994, to Rumford Falls Power Company, was transferred to Rumford Falls Hydro LLC by order issued May 24, 2006. The Project is subject to the Project-specific articles established by the October 18, 1994 license order (Table 4.6-1). A copy of the license and associated amendments are provided in Appendix C.

TABLE 4.6-1
CURRENT LICENSE REQUIREMENTS PER OCTOBER 18, 1994
ORDER ISSUING NEW LICENSE

Article Number	Current Article Summary
401	The licensee shall operate the Rumford Falls Project in a run-of-river mode for the protection of water quality and aquatic resources in the Androscoggin River. The licensee shall maintain the upper and middle impoundments within 1 foot of full pond elevation (601.24 feet U.S. Geological Survey Datum (USGS) at the upper impoundment and 502.74 feet USGS at the middle impoundment) and shall at all times act to minimize the fluctuations of the reservoir surface elevation, i.e., maintain a discharge from the project so that, at any point in time, flows immediately downstream from the project tailraces approximate the sum of inflows to the project reservoirs, minus withdrawals. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the USFWS, MDEP, and MDIFW. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.
402	The licensee shall release a minimum flow of one cubic foot per second (cfs) from the Upper Dam and 21 cfs from the Middle Dam of the Rumford Falls Project, as measured at the base of the dams, or inflow, whichever is less, for the protection of aquatic resources and water quality in the two bypass reaches of the Androscoggin River. This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the USFWS, MDEP, and MDIFW. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.
403	Required the licensee file a plan to measure and report project flows, water surface elevations, and operation records to monitor compliance with run-of-river mode of operation and flow releases to the bypass reaches, as stipulated in Articles 401 and 402.
404	Commission reserved authority to require licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of fishways.
405	Requires the licensee to file a plan to control erosion and sedimentation at least 90 days before the start of any land clearing activity or work at the canoe access facility per Articles 407 and 408.
406*	Requires the licensee to implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties affected by the Rumford Falls Hydroelectric Project."
407	Requires the licensee to operate and maintain the carry-in canoe access facility at the Carlton Bridge site during the term of the license.
408	Required the licensee to file a plan for a canoe access facility at Rumford Point, Maine.

*Last amended by Commission order issued March 26, 2019, where the Licensee must file a report summarizing the cultural resource activities conducted during the previous two years and the cultural resource activities to be conducted in the ensuring years biennially on January 31.

4.6.2 Compliance History

Based on a review of the Project's compliance history, RFH has been and continues to be in compliance with the applicable articles of the existing FERC license. In any cases of minimum flow or impoundment level excursions related to the license, RFH has notified FERC and the applicable agencies.

4.7 Current Net Investment

The current net investment in the Project is $102,630,000. This should not be interpreted as the fair market value of the Project.

4.8 Potential for New Project Facilities and/or Operations

RFH is not proposing any new facilities or changes in operations at this time. However, as economic conditions continue to change, RFH routinely performs periodic evaluations of the Project, including potential upgrades, and will continue to do so into the future. Normal routine maintenance will be performed as needed during the remainder of the license term and during any new license term.

4.9 PURPA Benefits

In accordance with 18 CFR §5.6(e), RFH is indicating in this document that RFH is not seeking rights under Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) for the Project at this time and, therefore, no additional information is required. RFH reserves the right to exercise any rights available to RFH under PURPA in the future.

Section 5
Description of Existing Environment and Resource Impacts

5.1 Description of the River Basin

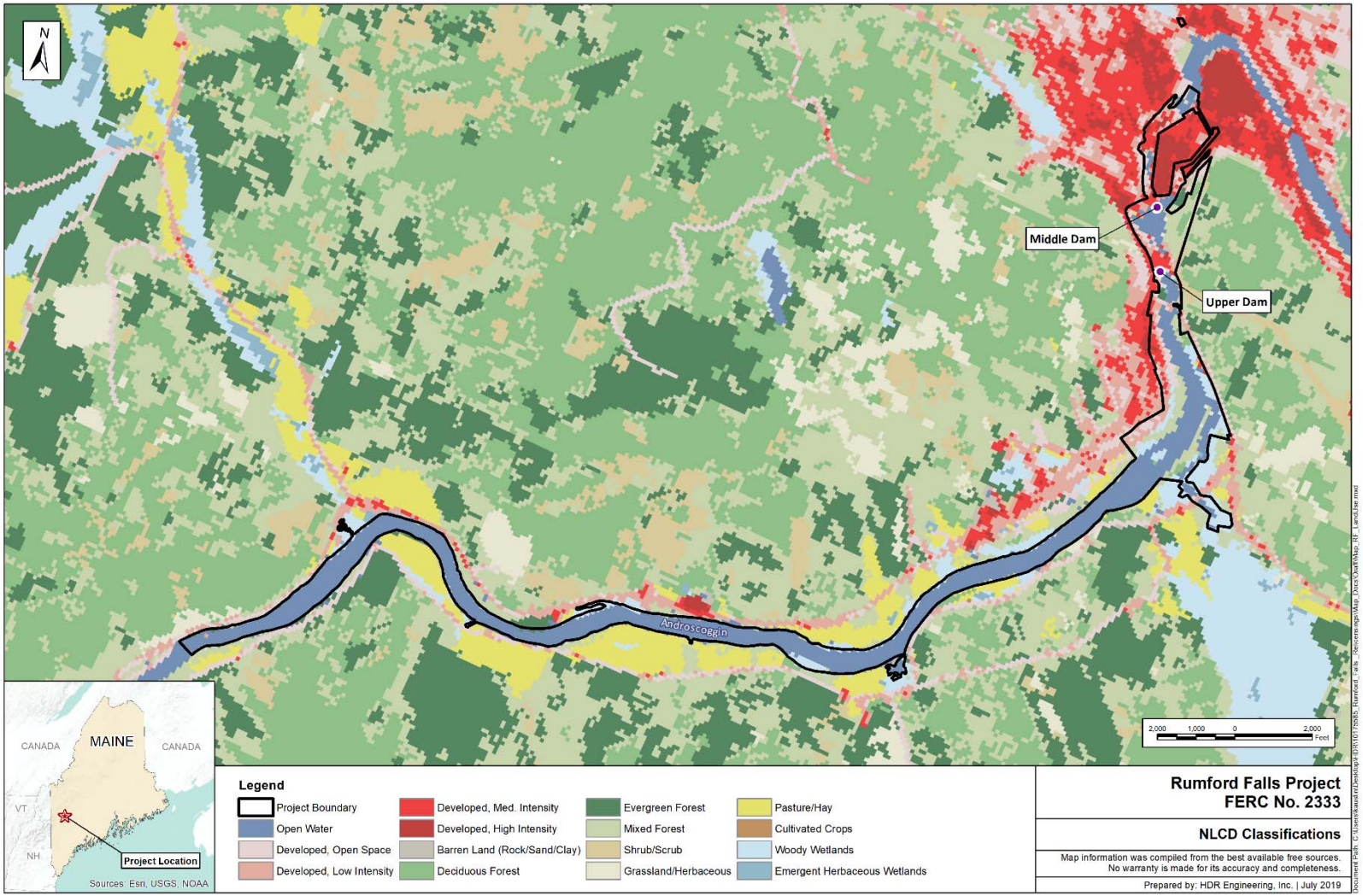
The Androscoggin River Basin occupies 3,500 square miles in western Maine and northeastern New Hampshire (State of Maine 2007). Approximately 80 percent of the drainage is in Maine and 20 percent is in New Hampshire (MDMR et al. 2017). The Androscoggin River is Maine's third largest river and flows 177 miles from the headwaters in Umbagog Lake in Errol, New Hampshire (near Mount Washington) to its mouth at Merrymeeting Bay (Maine Department of Environmental Protection [MDEP] 2016). The Androscoggin River Basin includes approximately 1,264 miles of rivers and streams (New Hampshire Department of Environmental Services 2008). The Project is located in the Lower Androscoggin basin (Hydrologic Unit Code [HUC] 0104002).

5.1.1 Major Land and Water Uses

The Androscoggin River basin is relatively undeveloped. Seventy-five percent of the basin is comprised of deciduous, evergreen, or mixed forest. Agriculture is limited in the basin, comprising less than three percent of the total basin area. The northern reaches of the basin are heavily forested and gently transition towards development, cropping, and pasture cover as you move south along the river towards Brunswick (Carr et al. 2015).

Land use in the Project vicinity near the Upper Station and Lower Station Developments is a mixture of medium- and high-intensity development because of the Town of Rumford. The majority of the land adjacent to the Project Boundary upstream of the Upper Dam is pasture lands. The Project vicinity also contains a fair amount of forested areas. Land use within the Project vicinity is shown in Figure 5.1-1.

FIGURE 5.1-1
LAND USE IN THE RUMFORD FALLS PROJECT VICINITY



The Androscoggin River has a history of industrial and municipal use over the last 200 years (MDEP 2016). Historically, the primary use of the river was for log drives and sawmills. Textile and paper mills flourished along the river in the 19th and 20th centuries. The primary industrial use of the river today is for hydroelectric energy production (USGS 2019a).

Ninety-four percent of the public water systems in Maine use groundwater (springs and wells) as a source of supply. Forty-eight percent of the water consumed by the public comes from surface water utilities. Only 79 surface water supplies (including lakes and streams) are used as public drinking water supplies, which represents only three percent of the 2,800 large ponds in Maine (State of Maine 2019). The Androscoggin River is not used as a source of public drinking water.

5.1.2 Dams and Diversions within the Basin

Maine and New Hampshire's databases list 203 dams in the Androscoggin River basin. According to these databases, 63 dams are listed as having recreation as their primary purpose, 25 are listed as hydroelectric power generation facilities, 11 are listed as flood control structures, and 22 are listed as water supply structures (Carr et al. 2015).There are seventeen FERC-licensed hydroelectric projects located on the Androscoggin River (Table 5.1-1). The Shelburne Hydroelectric Project (FERC No. 2300) is located approximately 35 RM upstream of the Rumford Falls Upper Dam. Approximately 21 RM downstream of the Rumford Falls Lower Dam is the Riley Dam of the Riley-Jay-Livermore Hydroelectric Project (FERC No. 2375).

TABLE 5.1-1
FERC-LICENSED PROJECTS ON THE ANDROSCOGGIN RIVER

Project No.	Project Name	Authorized Capacity (kW)	Licensee	State
P-2861	Pontook	9,600	NH Dept-Enir Serv-Wtr Res Div	NH
P-2422	Sawmill	3,174	Great Lakes Hydro America LLC	NH
P-2423	Riverside	7,900	Great Lakes Hydro America LLC	NH
P-2287	J. Brodie Smith	15,000	HSE Hydro NH Smith, LLC	NH
P-2326	Cross Power	3,220	Great Lakes Hydro America LLC	NH
P-2327	Cascade	7,920	Great Lakes Hydro America LLC	NH
P-2311	Gorham	4,800	Great Lakes Hydro America LLC	NH
P-2288	Gorham	2,150	HSE Hydro NH Gorham, LLC	NH
P-2300	Shelburne	3,720	Great Lakes Hydro America LLC	NH
P-2333	Rumford Falls	44,500	Rumford Falls Hydro LLC	ME

Project No.	Project Name	Authorized Capacity (kW)	Licensee	State
P-2375	Riley-Jay-Livermore	19,725	Andro Hydro, LLC	ME
P-8277	Otis	10,350	Andro Hydro, LLC	ME
P-2283	Gulf Island-Deer Rips	38,133	Brookfield White Pine Hydro, LLC	ME
P-2302	Lewiston Falls	28,440	Brookfield White Pine Hydro, LLC	ME
P-3428	Worumbo	19,100	Brown Bear II Hydro, LLC	ME
P-4784	Pejepscot	13,880	Topsham Hydro Partners Ltd Pt	ME
P-2284	Brunswick	19,000	Brookfield White Pine Hydro, LLC	ME

5.1.3 Tributary Rivers and Streams

Major tributaries to the Androscoggin River include the Ellis, Swift, Webb, Nezinscot, and Little Androscoggin rivers. The Little Androscoggin River is the largest tributary, flowing from Bryant Pond through Oxford County including Norway and South Paris, finally joining the main river at Auburn (Maine an Encyclopedia 2016). The Ellis River converges with the Androscoggin River approximately 3.5 miles upstream of the Rumford Falls Project Boundary and the Swift River joins the Androscoggin River approximately 0.2 mile downstream of the Project Boundary. Named tributaries to the Androscoggin River within the Project Boundary include Spilt Brook, Thurston Brook, Zircon Brook, Logan Brook, and Bean Brook (See Figure 4.2-1).

5.2 Geology and Soils

5.2.1 Project Area Geology

The Rumford Falls Project is located within a major subdivision of the Appalachian Highlands Province designated as the New England Province. This province is further subdivided into the Seaboard Lowland Section and the New England Upland Section. On the Androscoggin River, Lewiston Falls (located between the cities of Auburn and Lewiston, Maine) is identified as the boundary between the two sections. The Project is located entirely within the New England Upland Section (RJ Associates 2014).

The New England Upland Section is composed of "dissected and glaciated peneplains on complex structural features; monadnocks" (Fenneman 1938; as cited in RJ Associates 2014). This area was reduced to a relatively flat terrain prior to the various glacial epochs. During glacial ice advance, the area was further eroded by ice action, leaving some hills of highly resistant rock (i.e.,

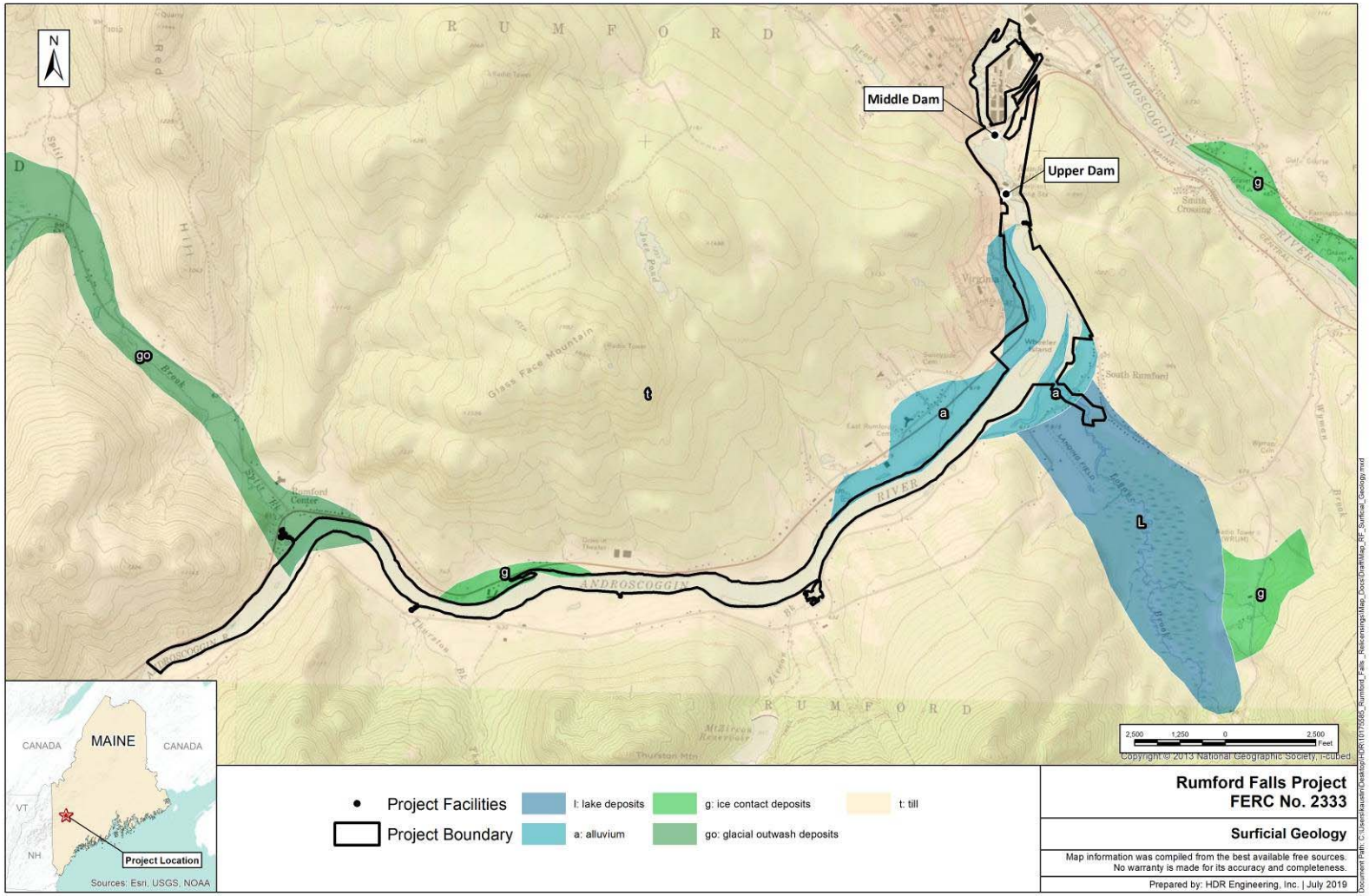
monadnocks), which dotted the postglacial landscape. All surficial features, with the exception of man-made structures and some minor stream deposition, were produced by glacial ice action and subsequent glacial melt water deposition. In general, the material deposited consists of tight glacial till in the valleys and glacial drift on the slopes. The till is extremely tight and is made up of cobbles and boulders in a matrix of fine to medium sand with occasional beds of silt and clay. This material, in general, presents stable slopes and compact, competent foundation conditions (RJ Associates 2014).

According to the Maine Geological Survey, Department of Conservation, "Bedrock Geologic Map of Maine," 1985, the rocks in the region where the Rumford Falls Project is located are dominated by material classified as Middle Devonian Ordovician to Lower Devonian metasedimentary rocks and Silurian to Devonian mafic to felsic volcanic rocks. The numerous alterations of the host sedimentary rocks by magmatic intrusions have resulted in the development of an extremely complex bedrock environment (Rumford Falls Power Company 1991, RJ Associates 2014).

The bedrock of the Project vicinity is comprised primarily of pelite, sandstone, biotite-muscovite, granite, tonalite, and limestone. The rocks as observed throughout the region are highly crystalline, with crystal sizes varying from very large in some quartzites to very small to fine in the schistose rocks. Numerous quartz seams and nodules are visible throughout the host rock. The structure of the bedrock is comparatively simple, with the strike conforming to the regional trend which is east-northeast. Some zones of brecciation and other indications of rock movement are visible; however, these zones are relatively rare and were re-cemented and sound. Any faulting which may have occurred in the past was of minor importance and consisted of movements and adjustments between beds probably during the Appalachian Revolution which started approximately two hundred million years ago (RJ Associates 2014).

The surficial deposits of the Project vicinity are principally glacial till depositions composed of clay, silt, sand, and stone (Rumford Falls Power Company 1991). Figure 5.2-1 provides the surficial geology of the Project vicinity.

FIGURE 5.2-1
SURFICIAL GEOLOGY OF THE RUMFORD FALLS PROJECT



5.2.2 Topography

The Androscoggin River flows 177 miles from the headwaters in Umbagog Lake in Errol, New Hampshire to its mouth at Merrymeeting Bay (MDEP 2016). The Androscoggin River drops more than 1,500 vertical feet in altitude as it flows from the Rangeley Lakes region (located near the town of Rangeley, Maine) to Merrymeeting Bay. There are five major cascades in the drainage (Great Falls, Lewiston Falls, Rumford Falls, Snow Falls, and Biscoe Falls) (MDMR et al. 2017). In the town of Rumford alone, the Androscoggin River drops 177 feet within one mile at Rumford Falls. Despite its steep gradient, the Androscoggin River has a well-developed floodplain along most of its length in Maine that is used for agricultural purposes (Maine Rivers 2005).

5.2.3 Project Area Soils

Soils within and adjacent to the Project vary greatly throughout the Project vicinity. Some of the soils located along the shoreline near the Upper Station and Lower Station Developments include the Lyman-Tunbridge-Monadnock (LWD and LWE), Tunbridge-Lyman (TyC), urban land-Hermon complex (UhC), and Hermon sandy loam (HeB) soil types. Figures 5.2-2 and 5.2-3 display and describe the soil types within and adjacent to the Project Boundary.

The Lyman series consists of somewhat excessively drained soils that are shallow over bedrock. The Tunbridge series consists of well-drained soils that are moderately deep over bedrock. Both Lyman and Tunbridge soils are formed in glacial till derived from gneiss, granite, phyllite, and schist. The Monadnock series consists of very deep, well-drained soils. These soils are formed in loose glacial till derived mainly from gneiss and granite. The slopes of Lyman, Tunbridge, and Monadnock soils range from 3 to 60 percent (United States Department of Agriculture [USDA] undated).

The Hermon series consists of very deep, somewhat excessively drained soils. These soils formed in loose glacial till derived mainly from granite and gneiss. These are mainly found on the southeastern slopes of hills and mountains, and slopes range from 0 to 50 percent (USDA undated).

FIGURE 5.2-2
SOILS AT THE RUMFORD FALLS PROJECT

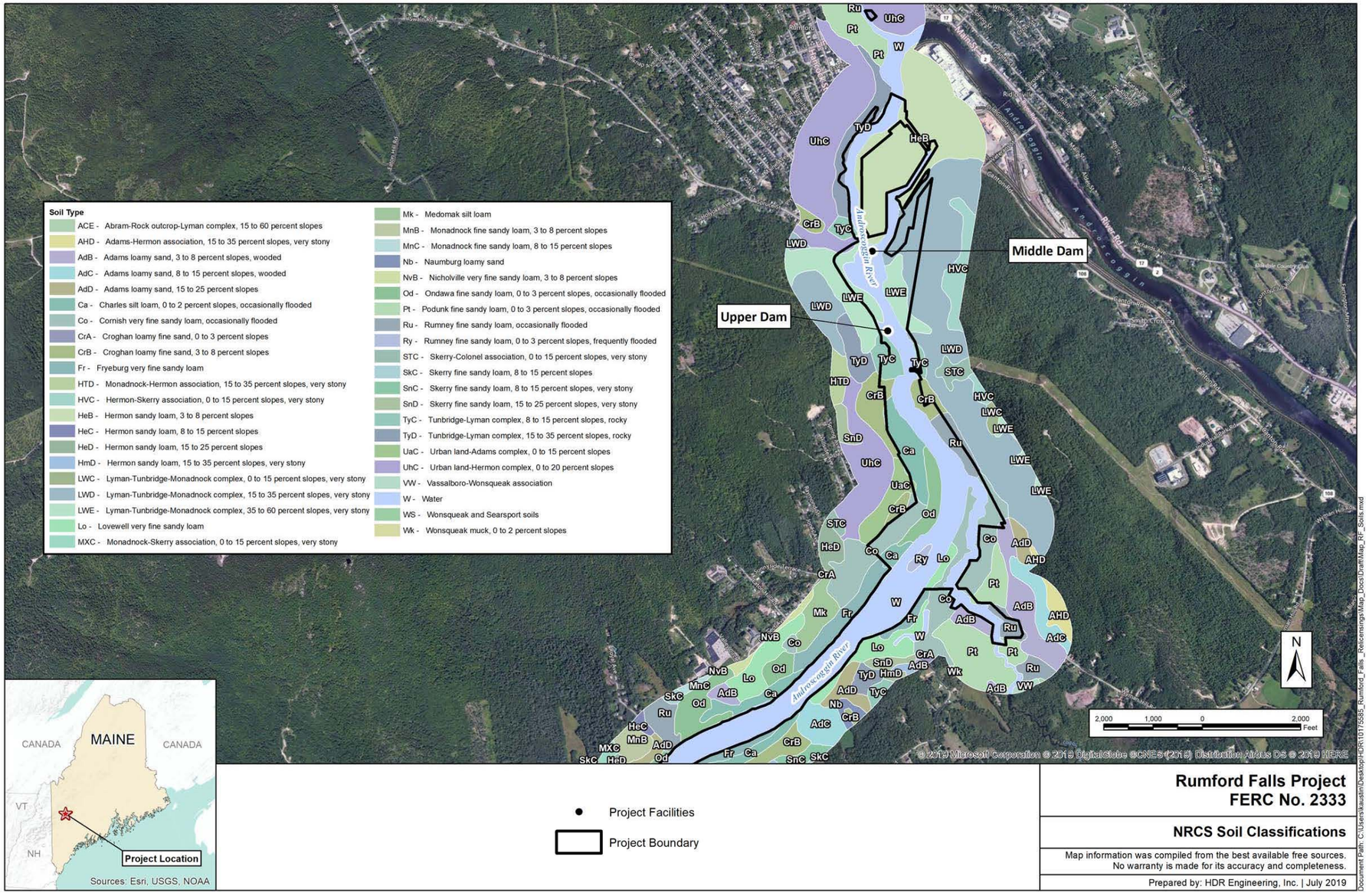
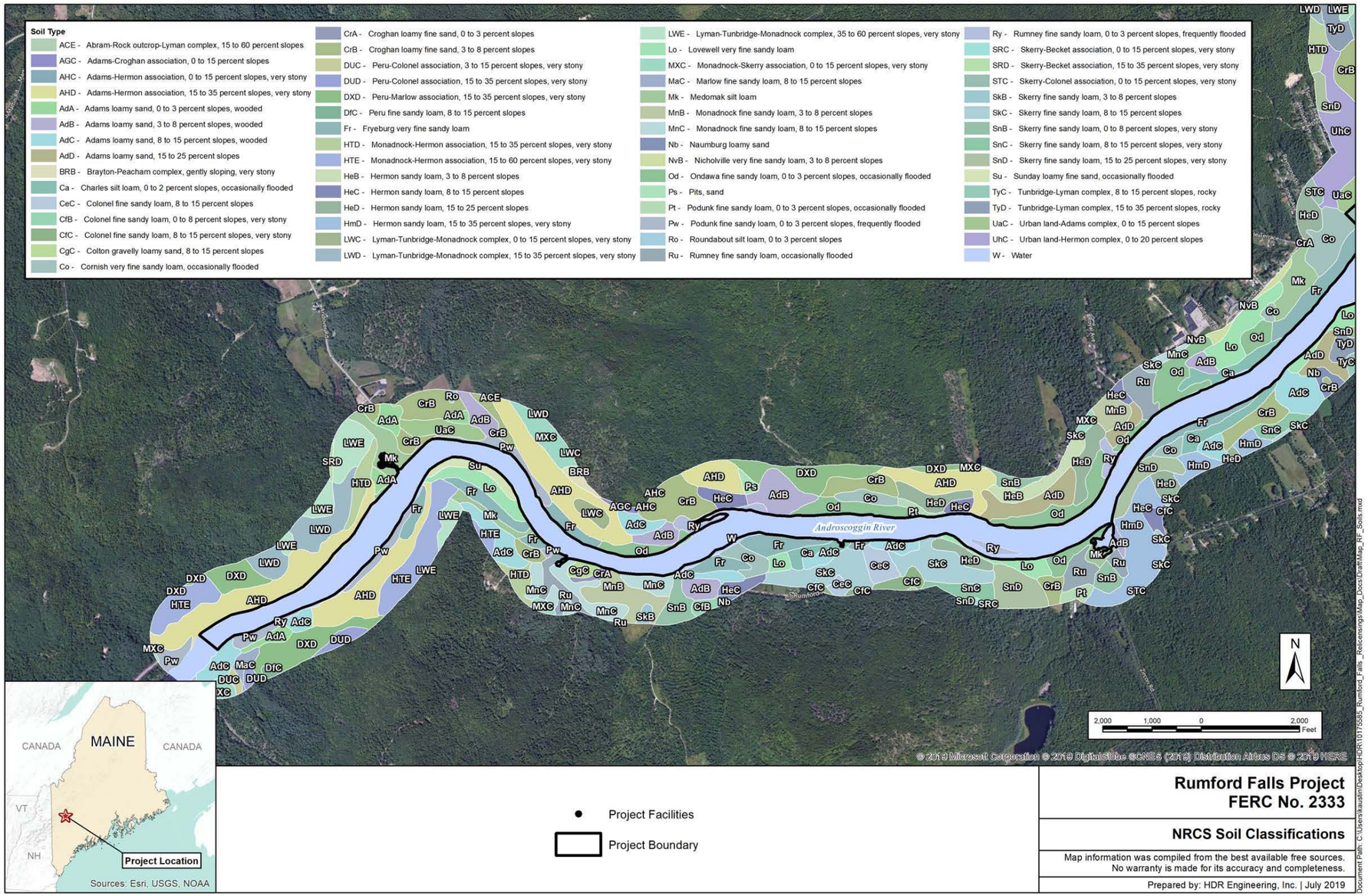


FIGURE 5.2-3
LEGEND FOR SOILS AT THE RUMFORD FALLS PROJECT



5.2.4 Reservoir Shorelines and Stream Banks

The Androscoggin River has a well-developed floodplain with the shoreline primarily consisting of forest and pasture land along the Upper Dam impoundment and a mixture of medium and high intensity development near the Upper Station and Lower Station Developments (See Figure 5.1-1). Some of the stream banks near the Upper Station and Lower Station Developments are armored.

The soils surrounding most of the Upper Dam impoundment are poorly drained to well drained and formed in alluvium (FERC 1993). The soils have a loamy surface layer underlain by sandy material and are subject to occasional flooding. The impoundment intersects unstable alluvium in some areas and as a result, wave action, rafted ice, and flood currents cause minor, local erosional undermining of the riverbanks. The shoreline erosion and slumping that currently occurs at the Upper Dam impoundment is unavoidable and the adverse impacts are minor in nature (FERC 1993).

5.3 Water Resources

5.3.1 Drainage Area

The Androscoggin River Basin occupies 3,500 square miles in western Maine and northeastern New Hampshire (State of Maine 2007). The total drainage at the Project is 2,068 square miles. Flows on the Androscoggin River are regulated by upper storage reservoirs including: Umbagog Lake, Rangeley Lake, Mooselookmeguntic, Richardson, and Aziscohos. The Upper Androscoggin River Storage Projects Settlement Agreement (1998) established minimum and maximum flows, whitewater releases, and impoundment level targets at the storage projects.

5.3.2 Androscoggin River Flows

Table 5.3-1 presents the monthly average flow, minimum flow, maximum flow, and 10 percent and 90 percent exceedances at the Project. These flows were calculated from USGS Gage No. 01054500 Androscoggin River at Rumford, Maine, which is located approximately 550 feet below the powerhouse at the Lower Station Development, from January 1, 2000 through December 31, 2018, and are representative of both the Upper and Lower Station Developments. The drainage area of USGS Gage No. 01054500 is 2,068 square miles (USGS 2019b).

TABLE 5.3-1
RUMFORD FALLS PROJECT - MONTHLY AND ANNUAL AVERAGE, MINIMUM, AND MAXIMUM FLOWS, 2000-2018

Month	Average Flow (cfs)	Minimum Flow (cfs)	90% Exceedance	10% Exceedance	Maximum Flow (cfs)
January	3,655	1,110	1,730	5,339	19,500
February	3,454	1,390	2,110	4,456	13,000
March	4,617	1,450	2,440	7,200	27,300
April	9,273	1,960	3,688	18,120	42,800
May	6,897	2,010	2,794	14,300	23,500
June	4,654	1,370	1,909	8,923	30,400
July	3,195	1,330	1,770	5,124	20,300
August	2,839	1,180	1,660	4,318	37,900
September	2,385	1,060	1,460	3,470	10,400
October	3,876	1,000	1,578	7,418	34,900
November	4,447	925	1,910	7,996	22,800
December	4,350	1,210	1,820	7,088	33,000
Annual	**4,470**	**925**	**1,780**	**8,540**	**42,800**

Source: Flows were calculated from USGS Gage No. 01054500.

5.3.3 Androscoggin River Flow Duration Curves at the Rumford Falls Project

As discussed previously, flows through the Project are dependent on operations of upstream storage facilities. Operations of these large storage projects were revised in the late 1990s resulting in reduced storage operations and regulation, which lead to a less regulated or "flashier" inflow to the Rumford Falls Project. The 19-year period of available data from January 1, 2000 through December 31, 2018, is considered to be representative of the hydrologic conditions that can be reasonably expected in the foreseeable future as a result of modified upstream operations. During the 19-year period the average daily discharge was 4,470 cfs.

Annual and monthly flow duration curves have been developed for the Project from the USGS gage. These flow duration curves can be found in Appendix D.

5.3.4 Existing and Proposed Uses of Project Waters

Water uses within the Project vicinity include hydroelectric generation and industrial uses. Nine Dragons Paper (ND Paper) has rights to draw up to 100 cfs of water for its operation. The ND Paper mill has two intakes located next to Project's Lower Station intakes and is discharged at the tailrace of the Lower Station. No additional proposed uses of Project waters have been identified.

5.3.5 Existing Instream Flow Uses

Existing instream flow uses of waters of the Androscoggin River within the Project Boundary include hydroelectric generation and industrial uses with limited recreation (i.e., fishing and boating). No other existing instream flow uses of Project waters have been identified.

5.3.6 Federally-Approved Water Quality Standards

Water quality standards for the Project waters are regulated by MDEP by the authority delegated to it by the U.S. Environmental Protection Agency (USEPA). The water quality standards applicable to the Androscoggin River are contained in the Maine Revised Statutes, Title 38 Waters and Navigation, Chapter 3 Protection and Improvement of Waters, Subchapter 1 Environmental Protection Board, Article 4-A Water Classification Program.

Waters above, within, and downstream of the Project Boundary are classified as Class C waters (Table 5.3-2). Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment, fishing, agriculture, recreation, 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, as well as specific standards relating to Atlantic Salmon (*Salmo salar*) habitat.

Class C waters must meet an instantaneous dissolved oxygen (DO) standard of 5.0 parts per million (ppm) or 60 percent saturation, whichever is higher, and must meet a 30-day average 6.5 ppm requirement (Table 5.3-3).

TABLE 5.3-2
WATER QUALITY CLASSIFICATION OF THE
RUMFORD FALLS HYDROELECTRIC PROJECT

River Segment	Water Quality Classification	Best Uses
From its confluence with the Ellis River to a line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction	Class C	Class C 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 a habitat for fish and other aquatic life.

TABLE 5.3-3
NUMERIC WATER QUALITY CRITERIA FOR CLASS C WATERS

Parameter	Numeric Standards and Verbal Description
	Physical and Biological
Dissolved Oxygen	May not be 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. Dissolved oxygen may not be less than 6.5 parts per million as a 30-day average based upon a temperature of 24 degrees centigrade or the ambient temperature of the water body, whichever is less.
Bacteria (*E. Coli*)	Between April 15th and October 31st, the number of Escherichia coli bacteria in Class C waters may not exceed a geometric mean of 100 CFU 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.

5.3.7 Existing Water Quality Data

The Androscoggin River has a history of industrial and municipal use over the last 200 years (MDEP 2019a). The Androscoggin River historically experienced substantial pollution and low DO levels, caused by the discharge of paper mills and untreated or partially treated municipal sewage; however, water quality has since improved substantially (Rumford Falls Power Co. 1991).

During the previous relicensing, a water quality study was conducted to characterize the DO within the Project vicinity (Rumford Falls Power Co. 1991). The study revealed that DO concentrations were consistently high within the entire Project vicinity. It also showed that there was little, if any,

horizontal or vertical stratification of DO concentrations within the Project vicinity. Therefore, it was determined that significant DO increases could not be realized from modifying the operating mode of the Project because the existing DO concentrations are consistently high. The MDEP concurred and stated that "based upon the data collected for this report together with DEP's data it appears that the DO requirements for Class C are being met above and immediately below the Rumford Falls Project…Because of relatively high DO levels (relative to percent saturation) above the project, only a small increase in DO (<1 milligram per liter [mg/L]) can be realized even with substantial (50%) spillage. Spillage (or turbine venting) does not appear to be required to meet current Class C limits." The USFWS and MDIFW also concurred with the conclusions of the report. Immediately below the Project vicinity, the velocity of the Androscoggin River is swift and natural aeration is good (Rumford Falls Power Co. 1991).

More recent water quality within the Project vicinity also meet water quality standards and a water quality certificate was issued (to upgrade turbine-generator capacity) by the MDEP as recent as 2009. Recent water quality data collected within the Project vicinity were obtained from the following sources and have been compiled below:

- Upon request from RFH, the MDEP provided the:
    - 2018 Aquatic Life Classification Attainment Report by the Biological Monitoring Program, which analyzed the macroinvertebrate community in the Androscoggin River in Mexico, Maine (the town east of Rumford), to determine aquatic life classification; and
    - Various monitoring data collected at numerous sample sites along the Androscoggin River from 1995 to 2008. A portion of this data was collected by the Androscoggin River Watershed Council (ARWC) in collaboration with the MDEP.
- ARWC water quality data were available from 2013 to 2017 (MDEP 2019a).

Table 5.3-4 provides the discrete water quality data obtained from the MDEP and the ARWC. Sites AR2 and the Rt. 232 sample sites were located approximately 10 RM upstream from the Upper Dam. Sample Site AR6 was located approximately 2 RM upstream from the Upper Dam. Veterans Bridge was located approximately 1 RM downstream from the Lower Station powerhouse. Water quality data met DO water quality standards.

The Aquatic Life Classification Attainment Report for 2018 macroinvertebrate data collected on the Androscoggin River in Mexico attains Class A aquatic life criteria (Appendix E). Water quality data were collected during the deployment and retrieval of rock baskets and met water quality standards (Table 5.3-5).

TABLE 5.3-4
DISCRETE WATER QUALITY DATA COLLECTED WITHIN RUMFORD FALLS PROJECT VICINITY, 1995-2017 (MDEP 2019B).

Site	Year (June - September)	Parameter	Water temperature	DO (ppm)	DO (%)	pH	Specific Conductance (microsiemens per centimeter [µS/cm])
AR2 – Rumford Point	2013	No. Sample Days	4	4	4	-	1
		Mean	19.2	7.8	87.4	-	30
		Minimum	22.0	8.3	90.3	-	30
		Maximum	20.4	8.0	89.1	-	30
Rt. 232	2008	No. Sample Days	-	4	4	4	4
		Mean	-	6.8	73.5	-	29
		Minimum	-	6.1	71.4	6.1	20
		Maximum	-	7.4	76.4	6.3	37
Rt. 232	1999	No. Sample Days	9	9	-	9	-
		Mean	20.4	8.1	-	-	-
		Minimum	17.5	7.7	-	6.8	-
		Maximum	23.0	8.5	-	7.1	-
Rt. 232	1995	No. Sample Days	11	11	-	-	-
		Mean	18.1	8.9	-	-	-
		Minimum	12.0	7.8	-	-	-
		Maximum	23.0	11.6	-	-	-

Site	Year (June - September)	Parameter	Water temperature	DO (ppm)	DO (%)	pH	Specific Conductance (microsiemens per centimeter [µS/cm])
AR6 – Rumford Boat Launch	2017	No. Sample Days	7	7	7	-	7
		Mean	20.1	8.2	89.9	-	32
		Minimum	16.1	7.5	84.2	-	22
		Maximum	21.7	9.3	98.0	-	38
Veterans Bridge Mexico, ME	2008	No. Sample Days	-	4	4	4	4
		Mean	-	6.7	75.0	-	42
		Minimum	-	6.5	73.5	6.0	27
		Maximum	-	6.9	76.8	6.3	55
Minimum			12.0	6.1	71.4	6.0	20.0
Maximum			23.0	11.6	98.0	7.1	55.3

TABLE 5.3-5
WATER QUALITY DATA COLLECTED DURING THE DEPLOYMENT (7/23/2018) AND RETRIEVAL (8/20/2018) OF MACROINVERTEBRATE ROCK BASKETS

Parameter	7/23/2018	8/20/2018
Water temperature (degrees Celsius)	23.2	22.8
Dissolved oxygen (mg/L)	9.3	10.0
Dissolved oxygen (%)	107.2	114.3
Specific conductance (µS/cm)	79.4	70.3
pH	7.3	7.3

5.3.8 Impoundment Information

The normal maximum surface area of the Upper Dam impoundment is 419 acres, with a corresponding normal maximum surface elevation of 601.24 feet above msl (Rumford Falls Power Co. 1991). Depths in the Upper Dam impoundment are unknown.

The normal maximum surface area of the Middle Dam impoundment is 21 acres, with a corresponding normal maximum surface elevation of 502.74 feet above msl. Depths in the Middle Dam impoundment vary from 10 to 20 feet (Rumford Falls Power Co. 1991).

Refer to Section 5.4-1 for additional information on impoundment habitat.

5.3.9 Downstream Reach Gradients

Immediately downstream of the Upper Dam, the Androscoggin River drops from elevation 566 feet above msl to elevation 502 feet above msl at the top of the Lower Station Dam, a distance of approximately 0.34 RM or 1,817 feet, with an average river gradient of 3.5 percent (188.2 feet per mile).

The next downstream river reach, beginning immediately downstream of the Middle Dam, through the bypassed reach to the Lower Station Powerhouse, drops in elevation from 479 feet above msl to 423 feet above msl over approximately 0.59 RM or 3,121 feet, with a river gradient of 1.8 percent (94.9 feet per mile).

Downstream of the Lower Station Powerhouse, the river has a more gradual slope and drops from elevation 423 feet above msl to 410 feet above msl over approximately 2 RM or 10,534 feet, having an average river gradient of 0.1 percent (6.5 feet per mile).

5.4 Fish and Aquatic Resources

The Androscoggin River has a steep gradient, dropping more than 1,200 vertical feet from its origin at Lake Umbagog to tidewater. Five major cascades in the drainage (Great Falls, Lewiston Falls, Rumford Falls, Snow Falls, and Biscoe Falls) exist as natural barriers to diadromous fish movement upstream within the watershed. Historically, Atlantic Sturgeon, Shortnose Sturgeon, and Rainbow Smelt likely did not pass beyond Great Falls in Brunswick. Lewiston Falls stopped the upstream migration of Alewife, American Shad, Blueback Herring, Striped Bass, and possibly Sea Lamprey, while Rumford Falls was the natural barrier to Atlantic Salmon (Foster and Atkins 1868; as cited in MDMR et al. 2017). Given the addition of the downstream man-made barriers on the river, Atlantic Salmon have not been caught upstream of Lewiston Falls since 1815. Upstream and downstream fish passage exists at the first three dams on the Androscoggin River (i.e., Brunswick, Pejepscot, and Worumbo), but the MDMR only monitors Atlantic Salmon returns at Brunswick – where there were no returns in 2017, and from 2012 – 2016 a total of 13 returns (MDMR et al. 2017).

Historically, Rumford Falls is believed to be the upstream limit for American eel (MDMR and MDEP 2008; as cited in Moore and Reblin 2010). In 2019, the MDIFW indicated that there are no confirmed occurrences of this species on the mainstem of the Androscoggin River or tributaries to the river upstream of the city of Auburn (MDIFW 2019a), which is well downstream of the Project. However, the MDIFW also noted that there was one confirmed occurrence of American Eel in 2001 in Joe's Pond, which is located upstream of the Project dams on an unnamed tributary to the Androscoggin River in the town of Rumford. However, additional consultation with the regional office regarding this occurrence was associated with a pond that is not tributary to the Androscoggin River (MDIFW 2019a).

During the previous relicensing, and in coordination with the USFWS and MDIFW, a study was conducted to assess flows within the bypassed reaches of the Project (Rumford Falls Power Co. 1991). Habitat within the bypass reaches is poor to non-existent. The upper bypassed reach is steep and consists predominantly of bedrock substrate. Habitat within the lower bypassed reach is also steep with cascades over bedrock and boulders. Based on the affected habitat and assessment of flows, the study found that modifying the flow regime within the bypassed reaches would not enhance instream habitat. The USFWS concurred with these findings and agreed to limit recommendations regarding minimum flows to the Project's tailrace areas, which are primarily driven by inflow to the Project given that the Project is operated as a run-of-river facility. The MDIFW also concurred that altering the existing flow regime was not warranted (Rumford Falls Power Co. 1991).

Additionally, based on results from the water quality study conducted for the previous relicensing of the Project, the USFWS specified that the DO and percent saturation levels in the impoundments and tailraces were sufficiently high and water quality standards were consistently exceeded and "therefore, spillage, turbine venting or other measures to increase DO do not appear to be necessary to protect and enhance fish and wildlife resources" (Rumford Falls Power Co. 1991). The MDIFW also concluded "…little benefit to fisheries resources or their utilization would be gained by additional releases into the bypassed reaches, and that present dissolved oxygen conditions are above the water quality classification standards and adequate to sustain aquatic resources within and below the project area" (Rumford Falls Power Co. 1991).

5.4.1 Existing Fish and Aquatic Resources

In August and September 1986, a comprehensive survey was conducted along the Androscoggin River at various locations from the Upper Dam impoundment downstream approximately 60 RM to the Lewiston Falls impoundment (Rumford Falls Power Co. 1991). Multiple gear types were used in the study including electrofishing, gill nets, seines, and trap (fyke) nets. Table 5.4-1 provides a list of species collected in the Upper Dam impoundment, which provides good habitat for a variety of warmwater and coldwater fishes. A total of 1,810 fish were collected (Rumford Falls Power Co. 1991).

TABLE 5.4-1
PERCENT COMPOSITION OF FISH SPECIES COLLECTED (GEARS COMBINED) IN THE UPPER DAM IMPOUNDMENT AT THE RUMFORD FALLS PROJECT IN AUGUST AND SEPTEMBER 1986 (RUMFORD FALLS POWER CO. 1991)

Species	Scientific Name	Percent Composition
Fallfish	*Semotilus corporalis*	44.1
Common shiner	*Luxilus cornutus*	30.1
White sucker	*Catostomus commersonii*	7.1
Golden shiner	*Notemigonus crysoleucas*	6.3
Yellow perch	*Perca flavescens*	4.6
Chain pickerel	*Esox niger*	4.6
Brown bullhead	*Ameiurus nebulosus*	1.2
White perch	*Morone americana*	1.2
Lake chub	*Couesius plumbeus*	0.6
Burbot	*Lota lota*	0.1
Pumpkinseed	*Lepomis gibbosus*	0.1
	TOTAL	100

Sampling to assess the fish assemblage along the entire Androscoggin River was conducted in August of 2003, using boat-mounted electrofishing methods (Yoder 2006). Electrofishing was conducted at two locations upstream of the Upper Station Development (RM 81.0), at RMs 83.1 and 88.7. Habitat was assessed at each electrofishing site using the Qualitative Habitat Evaluation Index (QHEI) (Rankin 1995) as modified for application to large rivers. Habitat at RM 83.1 was characterized as having (1) moderate to extensive cover; (2) maximum depth greater than one

meter; (3) moderate to high silt cover; (4) slow or no flow; (5) moderate to high overall embeddedness; and (6) no riffles or runs present (Yoder 2006). A total of 486 fish representing 12 different species were collected in a 1,000-meter sampling area upstream of the Rumford Falls Project at RM 83.1.

Habitat at RM 88.7 was characterized as having (1) boulder, cobble, gravel substrates; (2) five or more substrate types; (3) moderate to extensive cover; (4) low to normal embeddedness; (5) maximum depth greater than one meter; and (6) low to normal riffle/run embeddedness (Yoder 2006). A total of 509 fish representing 11 different species were collected in a 1,000-meter sampling area further upstream of the Project at RM 88.7.

The data collected at these two sampling locations are presented in Table 5.4-2. A few Brown Trout (*Salmo trutta*) were collected at the sampling location at RM 88.7 during these surveys, and both Brown Trout and Rainbow Trout (*Oncorhynchus mykiss*) were found in several sampling locations further upstream. Therefore, it is likely that Brown and Rainbow Trout are present within the Rumford Falls Project Boundary.

TABLE 5.4-2
LIST OF FISH SPECIES COLLECTED AT RIVER MILE 83.1 AND 88.7 UPSTREAM OF THE RUMFORD FALLS PROJECT IN AUGUST 2003

Species	Scientific Name	Number of Fish Collected		Percent Composition	
		RM 83.1	RM 88.7	RM 83.1	RM 88.7
Black Crappie	*Pomoxis nigromaculatus*	1	0	0.2	0.0
Brown Bullhead	*Ameiurus nebulosus*	3	1	0.6	0.2
Brown Trout	*Salmo trutta*	0	3	0.0	0.6
Burbot	*Lota lota*	2	3	0.4	0.6
Chain Pickerel	*Esox niger*	14	2	2.9	0.4
Common Shiner	*Luxilus cornutus*	2	25	0.4	4.9
Creek Chub	*Semotilus atromaculatus*	0	1	0.0	0.2
Fallfish	*Semotilus corporalis*	9	192	1.9	37.7
Golden Shiner	*Notemigonus crysoleucas*	17	0	3.5	0.0
Pumpkinseed	*Lepomis gibbosus*	28	0	5.8	0.0
Smallmouth Bass	*Micropterus dolomieu*	33	107	6.8	21.0
Spottail Shiner	*Notropis hudsonius*	359	5	73.9	1.0

Species	Scientific Name	Number of Fish Collected		Percent Composition	
		RM 83.1	RM 88.7	RM 83.1	RM 88.7
White Sucker	*Catostomus commersonii*	2	125	0.4	24.6
Yellow Perch	*Perca flavescens*	16	45	3.3	8.8
Total Number of Fish/Percentage		**486**	**509**	**100**	**100**

Source: Yoder 2006.

Electrofishing was also conducted at two locations downstream of the Lower Station development (RM 80.0), at RMs 79.3 and 78.5. Habitat at both RM 79.3 and 78.5 were characterized as having (1) boulder, cobble, gravel substrate; (2) silt free substrate; (3) moderate to extensive cover; (4) fast current/eddies; (5) low to normal overall embeddedness; (6) maximum depth greater than one meter; and (6) low to normal riffle/run embeddedness (Yoder 2006). A total of 630 fish representing 9 different species were collected in a 1,000-meter sampling area downstream of the Rumford Falls Project at RM 79.3. A total of 388 fish representing 10 different species were collected in a 1,000-meter sampling area further downstream from the Project at RM 78.5. The data collected at these two sampling locations are presented in Table 5.4-3.

TABLE 5.4-3
LIST OF FISH SPECIES COLLECTED AT RIVER MILE 79.3 AND 78.5 DOWNSTREAM OF THE RUMFORD FALLS PROJECT IN AUGUST 2003

Species	Scientific Name	Number of Fish Collected		Percent Composition	
		RM 79.3	RM 78.5	RM 79.3	RM 78.5
Burbot	*Lota lota*	10	3	1.6	0.8
Brown Trout	*Salmo trutta*	8	5	1.3	1.3
Chain Pickerel	*Esox niger*	2	0	0.3	0.0
Fallfish	*Semotilus corporalis*	2	3	0.3	0.8
Golden Shiner	*Notemigonus crysoleucas*	0	3	0.0	0.8
Longnose Dace	*Rhinichthys cataractae*	5	2	0.8	0.5
Rainbow Trout	*Oncorhynchus mykiss*	2	1	0.3	0.3
Smallmouth Bass	*Micropterus dolomieu*	570	290	90.5	74.6
White Perch	*Morone americana*	0	1	0.0	0.3
White Sucker	*Catostomus commersonii*	27	75	4.3	19.3
Yellow Perch	*Perca flavescens*	4	5	0.6	1.3
Total Number of Fish/Percentage		**630**	**388**	**100**	**100**

Source: Yoder 2006.

In June of 2008, MDIFW conducted fish surveys from Rumford Falls to the Riley Impoundment, the next impoundment downstream of the Project. The purpose of these surveys was to collect information on the Smallmouth Bass (*Micropterus dolomieu*) population in this reach of the river. Approximately 43 hours of experimental angling was performed from June 9 through June 18, 2008 (MDIFW 2019b). The results of the sampling effort are presented in Table 5.4-4.

TABLE 5.4-4
LIST OF FISH SPECIES COLLECTED DURING 2008 SURVEYS BETWEEN RUMFORD FALLS AND THE RILEY IMPOUNDMENT

Species	Number of Fish Caught	Percent Hatchery
Smallmouth Bass	95	*
Rainbow Trout	6	100
Brown Trout	3	100
Fallfish	37	*

Source: MDIFW 2019b.
* Not Applicable.

Compared to previous sampling that was conducted in 1996, where approximately 3.8 fish were caught per hour, catch rates were significantly lower in 2008 with approximately 1.6 fish caught per hour. The 2008 catch rates suggest that the density of Smallmouth Bass declined considerably. However, high flows and low temperatures negatively influenced angling success in 2008, whereas the 1996 sampling effort occurred during ideal conditions (MDIFW 2019b).

The historical assemblage of native fish in the Androscoggin River is not known with certainty; however, Smallmouth Bass, Brown Trout, and Rainbow Trout found in the upper Androscoggin are not indigenous to Maine. The present recreational trout fishery is dependent upon annual stocking of hatchery Brook Trout, Rainbow Trout, and Brown Trout (MDIFW 2014). Brown Trout and Rainbow Trout have been the focus of MDIFW's trout management on the upper river, partly because these species are more tolerant of elevated water temperatures that occur during much of the angling season. Habitat within the Gilead to Bethel reach, which is upstream of the Project, has been considered more suitable for Rainbow Trout, while habitat from Bethel to Rumford Falls has been considered more suitable for Brown Trout and bass (MDIFW 2014). MDIFW performs annual fish stocking of Brook, Brown, and Rainbow trout in the mainstem of the upper Androscoggin River at three locations upstream of the Project (Gilead, Bethel, and Hanover) and

one location downstream of the Project (Mexico). Fish stocking records for the last five years are presented in Table 5.4-5 below.

TABLE 5.4-5
MDIFW FISH STOCKING IN THE MAINSTEM OF THE ANDROSCOGGIN RIVER FOR THE LAST 5 YEARS IN GILEAD, BETHEL, HANOVER, AND MEXICO, MAINE

City/Town	Species	Number of Fish Stocked Each Year				
		2015	2016	2017	2018	2019[1]
Gilead	Brook Trout	1,145	1,700	1,100	1,075	700
Gilead	Brown Trout	750	750	750	750	500
Gilead	Rainbow Trout	1,000	1,180	1,105	1,300	1,000
Bethel	Brook Trout	675	745	700	675	300
Bethel	Brown Trout	1,600	1,600	1,600	1,600	1,350
Bethel	Rainbow Trout	700	616	595	700	500
Hanover	Brook Trout	1,000	1,150	1,100	1,000	1,000
Hanover	Brown Trout	2,000	2,000	2,000	2,000	2,000
Mexico	Brook Trout	250	260	270	250	--
Mexico	Brown Trout	250	250	250	250	--
Mexico	Rainbow Trout	1,350	1,188	1,148	1,350	940

Source: MDIFW 2019c.
[1] Stocking has only occurred in May and June; there may be additional stocking efforts later in 2019.

5.4.2 Essential Fish Habitat

According to a letter dated September 19, 2019, NMFS indicated that the Middle and Upper dams of the Project are within the listed area of the federally endangered distinct population segment (DPS) of Atlantic Salmon. Essential Fish Habitat (EFH) as designated under the Magnuson-Stevens Fishery Conservation and Management Act or established by the NMFS has been identified as existing downstream of the Upper Dam of the Rumford Falls Project. The area upstream of the Upper Dam of the Project is considered outside of the DPS (NMFS 2019).

5.4.3 Temporal and Spatial Distribution/Life History Information of Fish Communities

The distribution and life history information of important management and game species are described below.

5.4.3.1 Smallmouth Bass

Smallmouth Bass are present upstream and downstream of the Project, with a larger abundance downstream of the Project. Smallmouth Bass can be found in almost all manner of aquatic habitat, but are most abundant in cool large rivers and lakes. They prefer slow to moderate current and select areas of rocky shorelines. Smallmouth Bass are opportunistic feeders and generally feed during daylight hours on aquatic invertebrates, crustaceans, and small fish (Smith 1985). Smallmouth Bass sexually mature at age three to six years. Spawning usually occurs in late spring/early summer when water temperatures reach 62°F to 65°F. Spawning occurs in 2 to 20 feet of water, but average spawning depth is approximately three feet. Males build and maintain a nest in gravelly substrate until the fry emerge and disperse. Multiple females may visit a nest over a 30- to 36-hour period. Eggs hatch between seven and 21 days, depending on the water temperature (Smith 1985).

5.4.3.2 Brown Trout

Brown Trout prefer medium-to-large streams with swift riffles and large, deep pools, but can be found inhabiting a wide range of water bodies from small streams to large lakes and reservoirs. Similar to Brook Trout, they require well-oxygenated cold water, though they are tolerant of warmer temperatures. Brown Trout generally grow faster and live longer than native Brook Trout and compete with them for food and habitat (Hartel et al. 2002). Spawning times and habitat are similar to Brook Trout. Juvenile trout can inhabit a variety of habitats, from riffles to pools, feeding primarily on invertebrates. Adult Brown Trout inhabit deep pools with deep cover and are highly piscivorous, including preying on their own young or young of other trout species. This trout species typically spawns in the fall in tributary streams and small rivers, over gravel to small cobble substrate ranging in size from 0.25 to 3 inches in diameter (Hartel et al. 2002).

5.4.3.3 Rainbow Trout

In contrast to Brown Trout, Rainbow Trout spawn in the spring, from March to May when water temperatures are rising. Other life history habits and spawning requirements are similar to Brown Trout (Hartel et al. 2002).

5.4.4 Macroinvertebrates

In 2018, macroinvertebrate sampling was conducted in the Androscoggin River in the town of Mexico. Results from sampling are included in Appendix E.

5.5 Wildlife and Botanical Resources

Terrestrial land within the Project Boundary is limited. Site-specific survey data describing wildlife and botanical resources within the Project Boundary are unavailable; therefore, this section generally describes the wildlife and botanical resources that may occur in the general Project vicinity.

5.5.1 Wildlife

5.5.1.1 Mammals

Table 5.5-1 provides mammals that may exist or may utilize habitat in the vicinity of the Project. Since terrestrial portions of the Project are limited, it is likely that many of the species identified in the table below may not occur within the Project Boundary.

TABLE 5.5-1
LIST OF MAMMALS POTENTIALLY OCCURRING IN THE VICINITY OF THE RUMFORD FALLS PROJECT

Species	Scientific Name	Habitat Preference
Masked Shrew	*Sorex cinereus*	Damp woodlands with structures
Water Shrew	*Sorex palustris*	Riparian and wetland areas in coniferous areas
Smoky Shrew	*Sorex fumeus*	Moist, bouldery upland areas with moss, clear cuts
Long-tailed Shrew	*Sorex dispar*	Deep coniferous/mixed forests, with moss covered rocks
Northern Short-tailed Shrew	*Blarina brevicauda*	Variety of open wooded habitats
Pygmy Shrew	*Sorex minutus*	Variety of wooded habitats
Hairy-tailed Mole	*Parascalops breweri*	Open wooded areas, fields
Star-nosed Mole	*Condylura cristata*	Moist, open areas
Little Brown Bat	*Myotis lucifugus*	Near waterbodies and wetlands, tree cavities
Northern Long-eared Bat	*Myotis septentrionalis*	Mixed forested landscapes
Silver-haired Bat	*Lasionycteris noctivagans*	Wooded areas with loose bark near watercourses
Keen's Myotis	*Myotis keenii*	Wooded areas, under bark

Species	Scientific Name	Habitat Preference
Eastern Small-footed Bat	*Myotis leibii*	In or near woodland in caves, mine tunnels, buildings, crevices in rocks
Tri-colored Bat	*Perimyotis subflavus*	Open woods near water, crevices in cliffs, buildings, caves
Big Brown Bat	*Eptesicus fuscus*	Wooded areas, tree cavities
Red Bat	*Lasiurus borealis*	Edge of wooded areas
Hoary Bat	*Lasiurus cinereus*	Wooded coniferous areas
New England Cottontail	*Sylvilagus transitionalis*	Brushy areas, open woodlands, swamps, mountains
Snowshoe Hare	*Lepus americanus*	Woodlands with dense cover, clear cuts, regeneration
Eastern Chipmunk	*Tamias striatus*	Deciduous woodlands, right-of way (ROW) edge
Woodchuck	*Marmota monax*	Woodland edges, open areas
Gray Squirrel	*Sciurus carolinensis*	Deciduous and mixed forest
Red Squirrel	*Sciurus vulgaris*	Coniferous forests
Northern Flying Squirrel	*Glaucomys sabrinus*	Deciduous and mixed forest above 1,000 feet
Beaver	*Castor canadensis*	Slow moving waterbodies, wetlands
Deer Mouse	*Peromyscus maniculatus*	Coniferous or mixed forests, edges and clear cuts
Southern Red-backed Vole	*Myodes gapperi*	Cool, moist forest with mossy rocks, clear cuts
Meadow Vole	*Microtus pennsylvanicus*	Open areas such as fields, marshes and clear cuts
Rock Vole	*Microtus chrotorrhinus*	Coniferous and mixed forests at higher elevations
Muskrat	*Ondatra zibethicus*	Marshes and slow waterbodies with cattail
Southern Bog Lemming	*Synaptomys cooperi*	Marshes, meadows and mixed woodlands with duff
Northern Bog Lemming	*Synaptomys borealis*	Sphagnum bogs, black spruce and hemlock areas
Norway Rat	*Rattus norvegicus*	Industrial, farm and residential areas
House Mouse	*Mus musculus*	Buildings, fields, corncribs
Meadow Jumping Mouse	*Zapus hudsonius*	Moist, open meadows, shrub swamps and wooded uplands
Woodland Jumping Mouse	*Napaeozapus insignis*	Meadows, marshes, clear cuts and wooded areas
Porcupine	*Hystricomorph Hystricidae*	Mixed or coniferous forest
Coyote	*Canis latrans*	Forest edge, existing ROW
Red Fox	*Vulpes vulpes*	Forest edge, existing ROW, meadows
Gray Fox	*Urocyon cinereoargenteus*	Dense northern hardwood or mixed forests
Black Bear	*Ursus americanus*	Mixed Forest and swamps
Raccoon	*Procyon lotor*	Wooded areas along waterbodies
Marten	*Martes americana*	Deciduous and coniferous forest
Fisher	*Martes pennanti*	Mixed and coniferous forest

Species	Scientific Name	Habitat Preference
Ermine	*Mustela erminea*	Variety of brushy, wooded habitats, close to waterbodies
Long-tailed Weasel	*Mustela frenata*	Open areas, forest edge, existing ROW
Mink	*Neovison vison*	Riparian and wetland areas
Striped Skunk	*Mephitis mephitis*	Open woodlands, meadows
River Otter	*Lontra canadensis*	Riparian areas and wetlands
Lynx	*Felis lynx*	Extensive forest
Bobcat	*Lynx rufus*	Mixed and deciduous forest, brushy fields, swamps
White-tailed Deer	*Odocoileus virginianus*	Forest edge, coniferous swamps
Moose	*Alces alces*	Emergent wetlands, waterbodies edges, forest

Source: Devine Tarbell and Association (DTA) 2002; DeGraaf and Rudis 1983.

According to the MDIFW's *Wildlife Habitat Data Web Mapping Application* (MDIFW 2019d), there is a Deer Wintering Area[3] towards the upstream end of the Project Boundary near Rumford Center. However, this is located approximately 0.2 mile outside of the Project Boundary.

5.5.1.2 Birds

A wide range of bird species, including both resident and migratory species, may occur in the Project vicinity. Table 5.5-2 provides those bird species that may exist or may utilize habitat in the vicinity of the Project.

TABLE 5.5-2
LIST OF BIRD SPECIES POTENTIALLY OCCURRING IN THE VICINITY OF THE RUMFORD FALLS PROJECT

Species	Scientific Name	Habitat Preference
Common Loon	*Gavia immer*	Large waterbodies
Pied-billed Grebe	*Podilymbus podiceps*	Ponds, marshes with heavy emergent vegetation
American Bittern	*Botaurus lentiginosus*	Marshes, bogs, and waterbodies
Great Blue Heron	*Ardea herodias*	Shallow shores of marshes and waterbodies
Wood Duck	*Aix sponsa*	Shallow water ponds, lakes and wetlands near wooded areas

[3] Deer Wintering Areas are forested areas used by deer when snow gets more than 12 inches deep in the open and in hardwood stands, when the depth that deer sink into the snow exceeds 8 inches in the open and in hardwood stands, and when mean daily temperature is below 32 degrees (MDIFW 2019d).

Species	Scientific Name	Habitat Preference
American Black Duck	*Anas rubripes*	Emergent and shrub wetlands, flowages, rivers and lakes
Mallard	*Anas platyrhynchos*	Emergent and shrub wetlands, rivers and lakes
Ring-necked Duck	*Aythya collaris*	Marshes, bogs, and flowages
Common Goldeneye	*Bucephala clangula*	Ponds, lakes and rivers near wooded areas
Hooded Merganser	*Lophodytes cucullatus*	Wooded ponds, lakes and rivers
Common Merganser	*Mergus merganser*	Rivers and lakes
Red-breasted Merganser	*Mergus serrator*	Rivers and lakes
Osprey	*Pandion haliaetus*	Near large waterbodies
Bald Eagle	*Haliaeetus leucocephalus*	Near large waterbodies
Northern Harrier	*Circus cyaneus*	Meadows, emergent wetlands, bogs
Sharp-shinned Hawk	*Accipiter striatus*	Isolated forested areas, edges
Cooper's Hawk	*Accipiter cooperii*	Extensive forests
Northern Goshawk	*Accipiter gentilis*	Extensive forests
Red-shouldered Hawk	*Buteo lineatus*	Woodlands, forested wetlands
Broad-winged Hawk	*Buteo platypterus*	Woodlands, forested wetlands
Red-tailed Hawk	*Buteo jamaicensis*	Woodlands, ROW corridors, old fields
Rough-legged Hawk	*Buteo lagopus*	Open fields, marshes
American Kestrel	*Falco sparverius*	ROW edges, old fields near tree cavities
Ruffed Grouse	*Bonasa umbellus*	Forested areas with herbaceous openings, ROW edges
Spruce Grouse	*Falcipennis canadensis*	Dense interior coniferous forest, cedar bogs
Sora	*Porzana carolina*	Marshes, ponds, swamps, bogs, wet grassy meadows, sloughs having abundant and dense vegetation
Spotted Sandpiper	*Actitis macularius*	Edges of lakes and rivers
Killdeer	*Charadrius vociferus*	Barren areas, pastures, gravel pits
Common Snipe	*Gallinago gallinago*	Marshes, emergent bogs
Herring Gull	*Larus argentatus*	Large waterbodies
Rock Dove	*Columba livia*	Near human dwellings
Eastern Screech Owl	*Otus asio*	Shade trees in towns, orchards, small woodlots, and open woodlands
Great Horned Owl	*Bubo virginianus*	Interior woodlands, forest edges, wetlands
Barred Owl	*Strix varia*	Forested wetlands, bottomlands
Long-eared Owl	*Asio otus*	Dense (usually coniferous) forests or groves
Boreal Owl	*Aegolius funereus*	Dense coniferous and mixed hardwood forests
Northern Saw-whet Owl	*Aegolius acadicus*	Woodlands, edges
Common nighthawk	*Chordeiles minor*	Open woodlands, railroad beds, clearings

Species	Scientific Name	Habitat Preference
Ruby-throated Hummingbird	*Archilochus colubris*	Woodlands, edges, swamps
Hairy Woodpecker	*Picoides villosus*	Forests
Three-toed Woodpecker	*Picoides dorsalis*	Coniferous forest, clear cuts with dead timber
Black-backed Woodpecker	*Picoides arcticus*	Coniferous forest, clear cuts with dead timber
Pileated Woodpecker	*Dryocopus pileatus*	Interior second growth forest, forested wetlands
Eastern Wood Pewee	*Contopus virens*	Forest interior
Alder Flycatcher	*Empidonax alnorum*	Shrub wetlands with openings
Least Flycatcher	*Empidonax minimus*	Deciduous woodlands, edges, forested wetlands
Eastern Phoebe	*Sayornis phoebe*	Wooded or shrub areas near waterbodies
Great crested Flycatcher	*Myiarchus crinitus*	Woodlands, forested swamps
Eastern Kingbird	*Tyrannus tyrannus*	Open woodlands, shrub wetlands
Horned Lark	*Eremophila alpestris*	Open areas, fields, pastures
Tree Swallow	*Tachycineta bicolor*	Open areas near water, beaver flowages
Bank Swallow	*Riparia riparia*	Riverbanks, gravel pits
Cliff Swallow	*Hirundo pyrrhonota*	Farmlands, villages, cliffs, bridges, dams, fresh or salt water areas, open forests
Blue Jay	*Cyanocitta cristata*	Woodlands, towns
Gray Jay	*Perisoreus canadensis*	Coniferous forest, cedar bogs
American Crow	*Corvus brachyrhynchos*	Woodlands, ROW corridors
Black-capped Chickadee	*Poecile atricapillus*	Woodlands, towns
Boreal Chickadee	*Poecile hudsonicus*	Coniferous forest, spruce bogs
White-breasted Nuthatch	*Sitta carolinensis*	Deciduous woodlands
Red-breasted Nuthatch	*Sitta canadensis*	Coniferous Forest
Brown Creeper	*Certhia americana*	Dense woodlands
House Wren	*Troglodytes aedon*	Near human dwellings, brushy clearings
Winter Wren	*Troglodytes hiemalis*	Dense coniferous undergrowth, bog edges
Sedge Wren	*Cistothorus platensis*	Sedge meadows, shallow sedge marshes with scattered shrubs and little or no standing water, coastal brackish marshes
Marsh Wren	*Cistothorus palustris*	Marshes
Golden-crowned Kinglet	*Regulus satrapa*	Coniferous forest
Ruby-crowned Kinglet	*Regulus calendula*	Coniferous forest, edges
Eastern Bluebird	*Sialia sialis*	Open woodlands, clearings, edges
Veery	*Catharus fuscescens*	Moist deciduous woodlands
Swainson's Thrush	*Catharus ustulatus*	Coniferous forest, near water
Hermit Thrush	*Catharus guttatus*	Wooded swamps, coniferous edges

Species	Scientific Name	Habitat Preference
Wood Thrush	*Hylocichla mustelina*	Mature lowland forests, shady, cool, mature upland forests, often near a swamp, pond, stream, or lake
American Robin	*Turdus migratorius*	Open woodlands, clearings pastures
Gray Catbird	*Dumetella carolinensis*	Brushy edges, shrub wetlands, clear cuts
Brown Thrasher	*Toxostoma rufum*	Bushes, low trees, tangle of vines in open pastures or woodland edges and clearings in early stages of second growth
Bohemian Waxwing	*Bombycilla garrulus*	Unreported
Cedar Waxwing	*Bombycilla cedrorum*	Open woodlands, open orchards, towns
Northern Shrike	*Lanius excubitor*	Open woodlands, brushy areas
Loggerhead Shrike	*Lanius ludovicianus*	Open country with scattered trees, shrubs, roadside hedges
European Starling	*Sturnus vulgaris*	Towns, farms and fields
Solitary Vireo	*Vireo solitarius*	Mixed woodlands with dense understory
Yellow-throated Vireo	*Vireo flavifrons*	Tall deciduous trees in woodlands with partially opened canopy, seldom in dense forests, rarely in conifers
Philadelphia Vireo	*Vireo philadelphicus*	Forests, edges, ROW corridors
Red-eyed Vireo	*Vireo olivaceus*	Open deciduous forest
Nashville Warbler	*Vermivora ruficapilla*	Moist deciduous forest, edges
Northern Parula	*Setophaga americana*	Mix forest with old man's beard, forested wetlands
Yellow-rumped Warbler	*Dendroica coronata*	Coniferous forest, edges
Black-throated Green Warbler	*Dendroica virens*	Mixed forest, forested wetlands
Blackburnian Warbler	*Dendroica fusca*	Deep coniferous woods or swampy woods
Palm Warbler	*Dendroica palmarum*	Bogs and bog edges
Bay-breasted Warbler	*Dendroica castanea*	Coniferous forest, coniferous shrub areas
Black-and-white Warbler	*Mniotilta varia*	Forest and second growth
American Redstart	*Setophaga ruticilla*	Deciduous woodlands, forested wetlands
Ovenbird	*Seiurus aurocapillus*	Mature deciduous forest, no undergrowth
Northern Waterthrush	*Parkesia noveboracensis*	Forested wetlands near waterbodies
Mourning Warbler	*Oporornis philadelphia*	ROW corridors, clear-cuts
Common Yellowthroat	*Geothlypis trichas*	Shrub wetlands, brushy areas
Wilson's Warbler	*Wilsonia pusilla*	Bogs, shrub wetlands
Canada Warbler	*Wilsonia canadensis*	Moist forest with undergrowth, forested wetlands
Scarlet Tanager	*Piranga olicacea*	Mature deciduous and mixed wood lands, roadside shade trees
Chipping Sparrow	*Spizella passerina*	Towns, farms, fields

Species	Scientific Name	Habitat Preference
White-throated Sparrow	*Zonotrichia albicollis*	Brushy areas, clear-cuts, bogs
Dark-eyed Junco	*Junco hyemalis*	Forest, clearings, ROW edges
Lapland Longspur	*Calcarius lapponicus*	Cultivated fields, open weedy meadows, beaches, sandy waste places with sparse vegetation
Snow Bunting	*Plectrophenax nivalis*	Lake shores, salt marshes, open beaches, cultivated fields and windswept grasslands
Bobolink	*Dolichonyx oryzivorus*	Hayfields, meadows, marshes, fallow fields
Eastern Meadowlark	*Sturnella magna*	Open farmlands, especially pastures, hayfields and grassy meadows
Common Grackle	*Quiscalus quiscula*	Farmlands, suburbs, marshes, swamps, meadows at low elevations
Pine Grosbeak	*Pinicola enucleator*	Northern spruce-fir forests
Purple Finch	*Carpodacus purpureus*	Edges of coniferous forests, evergreen plantations, ornamental conifers in residential areas, parks, open mixed woodlands
Red Crossbill	*Loxia curvirostra*	Coniferous forests from wooded marine islands to mountain tops
Common Redpoll	*Carduelis flammea*	Near alders and birches
Hoary Redpoll	*Carduelis hornemanni*	Old fields, pastures, and birch or alder swamps
Pine Siskin	*Carduelis pinus*	Coniferous forests, natural conifer stands or evergreen plantations, alder thickets, weed patches adjacent to forests
American Goldfinch	*Carduelis tristis*	Open weedy fields, pastures with scattered trees near villages and farms, forest edges, open swamps
Evening Grosbeak	*Coccothraustes vespertinus*	Coniferous forests
House Sparrow	*Passer domesticus*	Villages, farms, cities, parks

Source: DTA 2002; DeGraaf and Rudis 1983.

According to the MDIFW's *Wildlife Habitat Data Web Mapping Application* (MDIFW 2019d), bald eagles have been observed approximately 2 RM downstream of the Project Boundary (MDIFW 2019d). Bald eagles prefer large bodies of water containing abundant fish resources and large trees for nesting and perching (DeGraaf and Yamasaki 2001). Although the bald eagle is no longer listed as federally threatened or endangered, protection continues under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and the Lacey Act (MDIFW 2010). The bald eagle was delisted by the State of Maine in 2009.

MDIFW's database also identified one Inland Waterfowl/Wading Bird Habitat that is located upstream of the Upper Station Development and outside of the Project Boundary (MDIFW 2019d). The habitat is located on Logan Brook, a tributary to the Androscoggin River, less than half a mile upstream of the Project Boundary. These habitats typically include nesting and feeding areas for waterfowl and wading birds.

No Essential Habitats are known to exist within the Project Boundary or vicinity. Essential Habitats are defined as MDIFW as "areas currently or historically providing physical or biological features essential to the conservation of an endangered or threatened species in Maine and which may require special management considerations" (MDIFW 2019d).

5.5.1.3 Amphibians and Reptiles

A wide range of amphibian and reptile species may occur in the Project vicinity. Table 5.5-3 provides those amphibian and reptile species that may exist or may utilize habitat in the vicinity of the Project.

TABLE 5.5-3
LIST OF AMPHIBIANS AND REPTILES POTENTIALLY OCCURRING IN THE VICINITY OF THE RUMFORD FALLS PROJECT

Species	Scientific Name	Habitat Preference
Jefferson Salamander	*Ambystoma jeffersonianum*	Terrestrial, undisturbed damp, shady deciduous or mixed woods, bottomlands, swamps, ravines, moist pastures, or lakeshores
Blue-spotted Salamander	*Ambystoma laterale*	Moist areas such as vernal pools and forested wetlands
Spotted Salamander	*Ambystoma macultaum*	Moist forested areas, vernal pools, marshy areas, mixed woods
Red-spotted Newt	*Notophthalmus viridescens*	Juveniles (red efts) in moist forested areas, adults in slow moving waters
Northern Dusky Salamander	*Desmognathys fuscus*	Cool running waters at forest margin
Redback Salamander	*Plethodon cinereus*	Mixed deciduous woodlands; under decaying logs, rocks and litter
Four-toed Salamander	*Hemidactylium scutatum*	Wet forested areas with sphagnum moss, bogs
Northern Spring Salamander	*Gyrinophilius porphyriticus*	Forested areas with clear, cold water, springs, mountain streams, creeks, boggy areas

Species	Scientific Name	Habitat Preference
Northern Two-lined Salamander	*Eurycea bislineata*	Floodplains, moist forests near seeps
Eastern American Toad	*Bufo a. americanus*	Forested habitats, existing ROW
Northern Spring Peeper	*Hyla crucifer*	Wetlands such emergent and scrub-shrub, edges of waterbodies
Gray Treefrog	*Hyla versicolor*	Forested areas, scrub-shrub swamps
Bullfrog	*Rana catesbeiana*	Shorelines of large waterbodies
Green Frog	*Rana clamitans melanota*	Riparian areas along waterbodies and shallow pools
Mink Frog	*Rana septentrionalis*	Margins of ponds, waterbodies
Wood Frog	*Rana sylvatica*	Forested areas, vernal pools
Northern Leopard Frog	*Rana pipiens*	Wet open fields, emergent wetlands
Pickerel Frog	*Rana palustris*	Wet open areas, waterbodies and pond margins
Common Snapping Turtle	*Chleydra serpentina*	Permanent waterbodies
Wood Turtle	*Glyptemys insculpta*	Slow-moving sandy/gravel bottom waterbodies, fields and woods
Eastern Painted Turtle	*Chrysemys picta*	Slow, quiet waterbodies
Midland Painted Turtle	*Chrysemys picta marginata*	Quiet water, preferably shallow areas with dense vegetation
Northern Water Snake	*Nerodia sipedon*	Permanently flooded wetlands, waterbodies
Northern Redbelly Snake	*Storeria occipitomaculata occipitomaculata*	Moist woodlands, bogs with sphagnum
Eastern Garter Snake	*Thamnophis sirtalis*	Variety of terrestrial habitats
Maritime Garter Snake	*Thamnophis sirtalis pallidula*	Mature hardwood stands and fir stands with mixed understory,
Northern Ribbon Snake	*Thamnophis sauritus septentrionalis*	Sunny areas with low dense vegetation near bodies of shallow quiet water
Northern Ringneck Snake	*Diadophis punctatus edwardsii*	Shady woodlands and under logs, rocks
Eastern Smooth Green Snake	*Opheodrys vernalis vernalis*	Upland areas, scrublands, existing ROW
Eastern Milk Snake	*Lampropeltis tiangulum*	Variety of habitats such as scrublands, woodlands and ROW edge

Sources: DTA 2002; DeGraaf and Rudis 1983.

5.5.2 Botanical Resources

Botanical resources of the Project vicinity are typical of rural river valleys with alluvial deposits and rugged hillsides. Portions of the Project vicinity near the Upper Station and Lower Station

Developments have been heavily developed for paper production and related industries. The majority of the land adjacent to the Project Boundary upstream of the Upper Dam is pasture and forested lands. The botanical resources within the Project Boundary were evaluated in 1987 and 1988 and are included in Appendix F (Rumford Falls Power Co. 1991).

5.5.2.1 Invasive Species

Invasive species are defined as non-indigenous plant or animal species that aggressively compete with native species. The University of Georgia Center for Invasive Species and Ecosystem Health (Center) tracks invasive species distribution throughout the country. According to the Center, Oxford County has 297 invasive species reported (University of Georgia 2011). Table 5.5-4 lists invasive botanical species that may occur in the Project Boundary or Project vicinity.

TABLE 5.5-4
INVASIVE BOTANICAL SPECIES THAT OCCUR IN MAINE

Common Name	Scientific Name	Maine Status
Aquatic Species		
Brazilian Waterweed	*Egeria densa*	Invasive, not currently known from Maine
Curly Pondweed	*Potamogeton crispus L.*	Currently considered invasive in Maine
Eurasian Water Milfoil	*Myriophyllum spicatum*	Currently considered invasive in Maine
European Frog's Bit	*Hydrocharis morsus-ranae*	Invasive, not currently known from Maine
Fanwort	*Cabomba caroliniana*	Invasive, not currently known from Maine
Hydrilla	*Hydrilla verticillata*	Currently considered invasive in Maine
Parrot Feather	*Myriophyllum aquaticum*	Invasive, not currently known from Maine
Variable-leaf Water Milfoil	*Myriophyllum heterophyllum*	Currently considered invasive in Maine
Slender-leaved Naiad	*Najas minor*	Invasive, not currently known from Maine
Yellow Floating Heart	*Nymphoides peltata*	Invasive, not currently known from Maine
Water Chestnut	*Trapa natans*	Invasive, not currently known from Maine
Wetland Species[1]		
Glossy Buckthorn	*Frangula alnus*	Currently considered invasive in Maine
Purple Loosestrife	*Lythrum salicaria*	Currently considered invasive in Maine

Common Name	Scientific Name	Maine Status
Japanese Silt Grass	*Microstegium vimineum*	Invasive, not currently known from Maine
False Indigo	*Amorpha fruticosa*	Probably invasive in Maine
Flowering Rush	*Butomus umbellatus*	Probably invasive in Maine
Ornamental Jewelweed	*Impatiens glandulifera*	Currently considered invasive in Maine
Yellow Iris	*Iris pseudoacorus*	Probably invasive in Maine
Perennial Pepperweed	*Lepidium latifolium*	Probably invasive in Maine
Watercress	*Nasturtium officinale*	Probably invasive in Maine
Common Reed	*Phragmites australis*	Currently considered invasive in Maine
Upland Species		
Garlic Mustard	*Alliaria petiolata*	Currently considered invasive in Maine
Japanese Barberry	*Berberis thunbergii*	Currently considered invasive in Maine
Japanese Knotweed	*Fallopia japonica*	Currently considered invasive in Maine
Morrow Honeysuckle	*Lonicera morrowii*	Currently considered invasive in Maine
Tartarian Honeysuckle	*Lonicera tartarica*	Currently considered invasive in Maine
Mile-a-minute Weed	*Polygonum perfoliatum*	Invasive, not currently known from Maine
Multiflora Rose	*Rosa multiflora*	Currently considered invasive in Maine
Norway Maple	*Acer platanoides*	Probably invasive in Maine
Tree of Heaven	*Ailanthus altissima*	Probably invasive in Maine
Common Barberry	*Berberis vulgaris*	Probably invasive in Maine
Common Mugwort	*Artemisia vulgaris*	Probably invasive in Maine
Bull Thistle	*Cirsium vulgare*	Probably invasive in Maine
Giant Knotweed	*Fallopia sachalinensis*	Probably invasive in Maine
Giant Hogweed	*Heracleum mantegazzianum*	Probably invasive in Maine
Dame's Rocket	*Hesperis matronalis*	Probably invasive in Maine
Japanese Hops	*Humulus japonicus*	Probably invasive in Maine
Common Privet	*Ligustrum vulgare*	Probably invasive in Maine
Japanese Honeysuckle	*Lonicera japonica*	Probably invasive in Maine
Bella Honeysuckle	*Lonicera x bella*	Invasive, not currently known from Maine
Western Lupine	*Lupinus polyphyllus*	Probably invasive in Maine
Canada Thistle	*Cirsium arvense*	Probably invasive in Maine
Wood Blue Grass	*Poa nemoralis*	Currently considered invasive in Maine
Kudzu	*Pueraria lobata*	Invasive, not currently known from Maine
Black Locust	*Robinia pseudoacacia*	Probably invasive in Maine
Princess Tree	*Paulownia tomentosa*	Invasive, not currently known in Maine
Rugosa Rose	*Rosa rugosa*	Probably invasive in Maine

Common Name	Scientific Name	Maine Status
Wineberry	*Rubus phoenicolasias*	Invasive, not currently known from Maine
Coltsfoot	*Tussilago farfara*	Probably invasive in Maine
Non-Indicator Species		
Porcelainberry	*Ampelopsis brevipendunculata*	Invasive, not currently known from Maine
Asiatic Bittersweet	*Celastrus orbiculata*	Currently considered invasive in Maine
Black Swallowwort	*Cynanchum louiseae*	Currently considered invasive in Maine
Autumn Olive	*Eleagnus umbellata*	Currently considered invasive in Maine
Lesser Celandine	*Ranunculus ficaria*	Probably invasive in Maine
Goutweed	*Aegopodium podagraria*	Probably invasive in Maine
Starwort	*Callitriche stagnalis*	Probably invasive in Maine
Cuckoo Flower	*Cardamine impatiens*	Probably invasive in Maine
Spotted Knapweed	*Centaurea maculosa*	Probably invasive in Maine
Pale Swallowort	*Cynanchum rossicum*	Probably invasive in Maine
Burning Bush	*Euonymous alatus*	Probably invasive in Maine
Cypress Spurge	*Euphorbia cyparissias*	Probably invasive in Maine
Chinese Bindweed	*Fallopia baldschuanica*	Invasive, not currently known from Maine
English Water Grass	*Glyceria maxima*	Invasive, not currently known from Maine
Amur Honeysuckle	*Lonicera mackaii*	Invasive, not currently known from Maine
Amur Cork Tree	*Phellodendron amurense*	Invasive, not currently known from Maine
White Cottonwood	*Populus alba*	Invasive, not currently known from Maine
Wild Thyme	*Thymus pulegioides*	Probably invasive in Maine
Common Buckthorn	*Rhamnus cathartica*	Currently considered invasive in Maine

[1]Species found in the riparian zone are grouped under wetland species.
Source: Maine Department of Agriculture, Conservation and Forestry 2013.

The Project has not experienced any operational or other issues related to any of the species listed above.

5.6 Wetlands, Riparian, and Littoral Habitat

Wetlands are generally defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. Most formal wetland definitions emphasize three primary components

that define wetlands: the presence of water, unique soils, and hydrophytic vegetation. The USFWS (Cowardin et al. 1979) defines wetlands as follows:

> *Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.*

MDEP's wetland definition is consistent with the USFWS. The USFWS, MDEP, and the U.S. Army Corps of Engineers (USACE) each have jurisdiction over wetlands within the State of Maine and specifically within the vicinity of the Rumford Falls Project.

5.6.1 Wetland and Riparian Vegetation

Based a field survey conducted for the previous relicensing in 1987 and 1988, the vegetation along the upstream portion of the Upper Dam impoundment is comprised of shoreline riparian cover types. Due to the stable water level regime of the impoundment, shoreline vegetation is not usually subject to flooding. Silver maple, red maple, speckled alder, red-osier dogwood, and pickerelweed were some of the prevalent species in the riparian shorelines. Some of the shoreline is not vegetated and there are small sections of upland herbaceous cover including grasses, goldenrod, and other typical old field species (Rumford Falls Power Co. 1991).

The upland cover types along the Upper Dam impoundment shoreline include a mixture of northern hardwood forest and shrubland. Red maple, black cherry, paper birch, and slippery elm are the dominant overstory trees in these upland hardwood forests, whereas witch hazel, red raspberry, and speckled alder are the major shrubland species. Upland old fields, shrublands, and northern hardwood forest are more prevalent upslope of the western shorelines (Rumford Falls Power Co. 1991).

The shoreline vegetation of the Androscoggin River from the Upper Dam to the Railroad Street Bridge was dominated by forest cover types. Since most of this shoreline is not subject to flooding, upland slope forests are prevalent. Yellow birch, paper birch, red maple, quaking aspen, black willow, red oak, white ash, black cherry, box-elder, hemlock, white pine, and big-toothed aspen are the principal overstory trees in these forests. Forested areas do not extend far beyond the river's edge for the most part due to extensive business, industrial, and residential development in this area (Rumford Falls Power Co. 1991).

5.6.2 Wetland and Riparian Wildlife

Lists of wildlife known to occur in wetland and riparian habitats in the Project vicinity are not available; however, many of the species likely to occur in the Project vicinity typically use wetland or riparian habitats at some time during their lives. Many of the amphibians and reptiles described in Section 5.5.1 may occur in the Project Boundary. Other wildlife likely to occur in the wetland habitats of the Project vicinity include mammals listed in Table 5.5-1 and birds listed in Table 5.5-2.

5.6.3 Wetland, Riparian, and Littoral Mapping

A map of wetland habitats in the Project vicinity is presented in Figure 5.6-1. Table 5.6-1 defines USFWS' National Wetland Inventory's (NWI) classification system used on the wetlands map and provides the acreage of each classification of wetlands within the Project Boundary. There are approximately 465 acres of NWI-mapped wetlands within the Project Boundary, about 430 of which are permanently flooded, lower perennial riverine habitat with unconsolidated bottom.

FIGURE 5.6-1
NWI WETLANDS MAPPED WITHIN THE PROJECT BOUNDARY

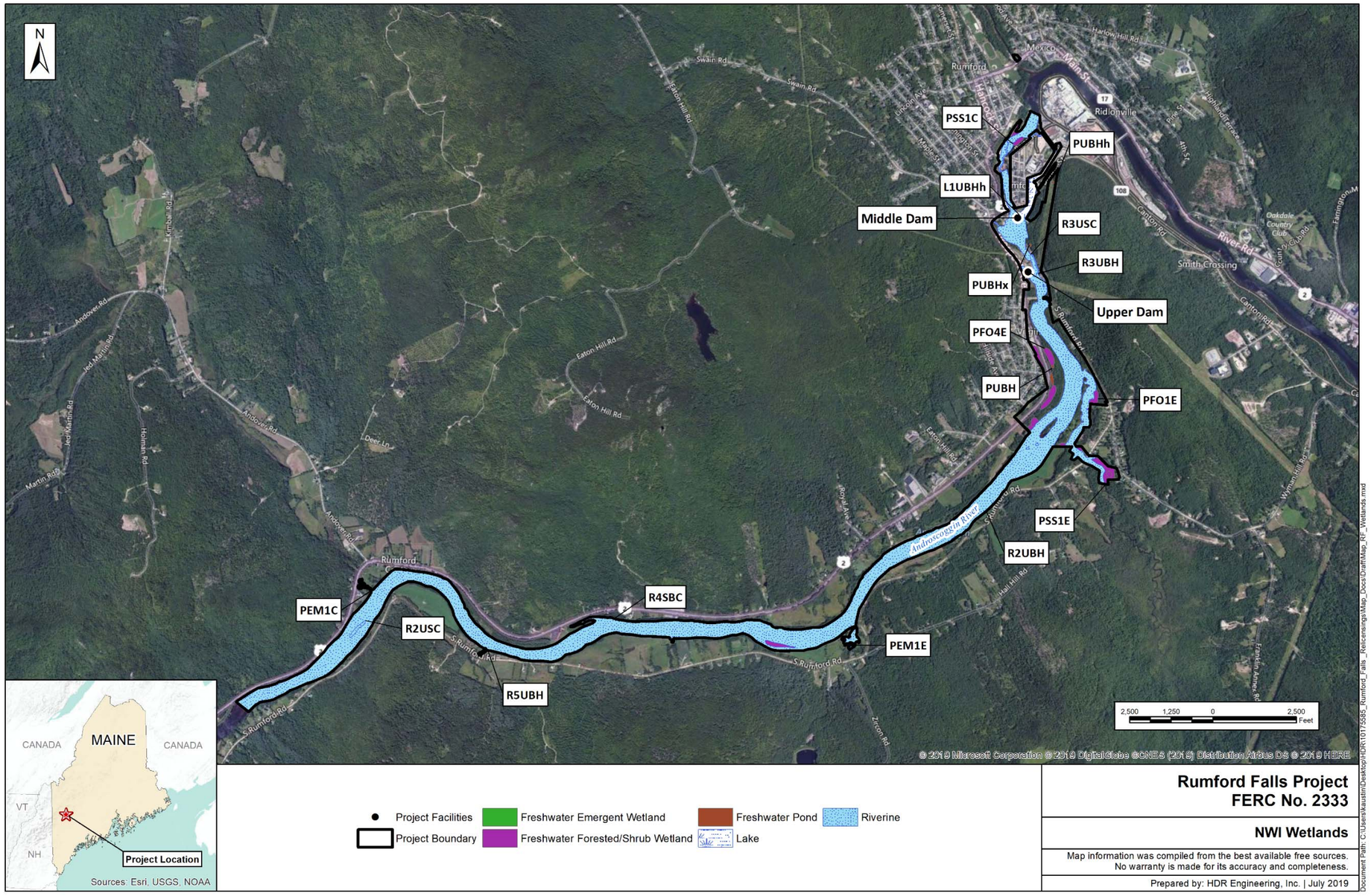


TABLE 5.6-1
NATIONAL WETLANDS INVENTORY CLASSIFICATION SYSTEM

Wetlands Code	System	Subsystem	Class	Subclass	Regime	Qualifier	Estimated Acres
L1UBHh	Lacustrine	Limnetic	Unconsolidated Bottom	N/A	Permanently Flooded	Diked/Impounded	7.33
PEM1C	Palustrine	N/A	Emergent	Persistent	Seasonally Flooded	--	0.12
PEM1E	Palustrine	N/A	Emergent	Persistent	Seasonally Flooded/Saturated	--	0.11
PFO1E	Palustrine	N/A	Forested	Broad-Leaved Deciduous	Seasonally Flooded/Saturated	--	2.90
PFO4E	Palustrine	N/A	Forested	Needle-Leaved Evergreen	Seasonally Flooded/Saturated	--	3.40
PSS1C	Palustrine	N/A	Scrub-Shrub	Broad-Leaved Deciduous	Seasonally Flooded	--	1.75
PSS1E	Palustrine	N/A	Scrub-Shrub	Broad-Leaved Deciduous	Seasonally Flooded/Saturated	--	11.57
PUBH	Palustrine	N/A	Unconsolidated Bottom	N/A	Permanently Flooded	--	0.71
PUBHh	Palustrine	N/A	Unconsolidated Bottom	N/A	Permanently Flooded	Diked/Impounded	0.10
PUBHx	Palustrine	N/A	Unconsolidated Bottom	N/A	Permanently Flooded	Excavated	0.11
R2UBH	Riverine	Lower Perennial	Unconsolidated Bottom	N/A	Permanently Flooded	--	430.26
R2USC	Riverine	Lower Perennial	Unconsolidated Shore	N/A	Seasonally Flooded	--	4.17
R3UBH	Riverine	Upper Perennial	Unconsolidated Bottom	N/A	Permanently Flooded	--	0.56
R3USC	Riverine	Upper Perennial	Unconsolidated Shore	N/A	Seasonally Flooded	--	1.80
R4SBC	Riverine	Intermittent	Streambed	N/A	Seasonally Flooded	--	0.01
R5UBH	Riverine	Unknown Perennial	Unconsolidated Bottom	N/A	Permanently Flooded		0.35

Sources: USFWS 2016; Cowardin et al. 1979.

5.7 Rare, Threatened, and Endangered Species

This section discusses rare, threatened, and endangered (RTE) species found within the Project Boundary and vicinity.

5.7.1 Federally-Listed Threatened, Endangered, and Candidate Species

On July 23, 2019, HDR, on behalf of RFH, requested information on species listed under the Endangered Species Act (ESA) and critical habitat from the USFWS. HDR also requested information on ESA species and EFH from NMFS. The USFWS responded in a letter dated July 25, 2019, and directed the request to the Maine Field Office *Species List and Project Reviews* website (Appendix A). Based on guidance provided on this website, information obtained on July 3, 2019, from the Information Planning and Consultation (IPaC) system was used to confirm there are no listed or candidate species or critical habitat present in the Project (USFWS 2017) (Appendix G). In response to this query, the USFWS (2019a) identified a total of two threatened, endangered, or candidate species identified as potentially occurring within the Project area (Table 5.7-1).

According to a letter dated September 19, 2019, NMFS indicated that the Middle and Upper dams of the Project are within the listed area of the federally endangered distinct population segment (DPS) of Atlantic Salmon. EFH designated under the Magnuson-Stevens Fishery Conservation and Management Act or established by the NMFS has been identified as existing downstream of the Upper Dam of the Rumford Falls Project. The area upstream of the Upper Dam of the Project is considered outside of the DPS (NMFS 2019).

Given that the IPaC search indicated that Atlantic Salmon could potentially occur in the Project area and that NMFS has designated EFH downstream of the Upper Dam, this species is being included in Table 5.7-1. However, given the number of natural and man-made barriers located on the river downstream of the Project, as well as there being no record of Atlantic Salmon being caught in the river upstream of Lewiston Falls since 1815, for the purpose of this relicensing, Atlantic Salmon is not considered a species potentially occurring within the Project Boundary.

TABLE 5.7-1
FEDERALLY-LISTED SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT BOUNDARY

Common Name	Scientific Name	Status	Critical Habitat in the Project Boundary
Northern Long-eared Bat	*Myotis septentrionalis*	Threatened	None
Atlantic Salmon	*Salmo salar*	Endangered	None

Source: USFWS IPaC consultation (USFWS 2019a).

5.7.2 State-Listed Threatened, Endangered, and Candidate Species

On July 23, 2019, HDR, on behalf of RFH, requested information on threatened, endangered, and special concern species and habitats from the MDIFW and MDOC (Appendix A). On August 16, 2019, MDIFW responded to the request for information on RTE species and habitats. MDIFW indicated that the species listed in Table 5.7-2 have been documented in the general vicinity of the Rumford Falls Project. No response was received from MDOC.

TABLE 5.7-2
STATE-LISTED SPECIES AND SPECIES OF CONCERN POTENTIALLY OCCURRING WITHIN THE PROJECT BOUNDARY

Common Name	Scientific Name	Status
Creeper	*Strophitus undulatus*	Special Concern
Little Brown Bat	*Myotis lucifugus*	Endangered
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Eastern Small-footed Myotis	*Myotis leibii*	Threatened
Big Brown Bat	*Eptesicus fuscus*	Special Concern
Red Bat	*Lasiurus borealis*	Special Concern
Hoary Bat	*Lasiurus cinereus*	Special Concern
Silver-haired Bat	*Lasionycteris noctivagans*	Special Concern
Tri-colored Bat	*Perimyotis subflavus*	Special Concern

Source: personal communication, Rebecca Settele, MDIFW, 2019.

5.7.3 Threatened and Endangered Species Habitat Requirements for Federally-Listed Species

5.7.3.1 Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is found across much of eastern and north-central United States and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and British Columbia (USFWS 2019b). It is a medium-sized bat, measuring

3 - 3.7 inches, with a wingspan of 9 or 10 inches. Its fur color can be medium to dark brown on the back and tawny to pale-brown on the underside (USFWS 2019b). The bat is distinguished by its long ears relative to other bats in the genus *Myotis* (USFWS 2019b).

The northern long-eared bat spends winters hibernating in caves and mines, preferring hibernacula with very high humidity. During the summer months, the northern long-eared bat prefers to roost singly or in colonies underneath bark, in cavities, or in the crevices of live or dead trees (USFWS 2019b). Breeding begins in late summer or early fall when males swarm near hibernacula. After a delayed fertilization, pregnant females migrate to summer colonies where they roost and give birth to a single pup. Young bats start flying 18 – 21 days after birth, and adult northern long-eared bats can live up to 19 years (USFWS 2019b).

Northern long-eared bats emerge at dusk and fly through the understory of forested hillsides feeding on moths, flies, leafhoppers, caddisflies, and beetles. They also feed by gleaning motionless insects from vegetation and water (USFWS 2019b).

Similar to the Indiana bat, white-nose syndrome is the greatest immediate threat for the northern long-eared bat. As a result of this disease, numbers have declined by 99 percent in the northeast. Other significant sources of mortality include impacts to hibernacula from human disturbance. Loss or degradation of summer habitat as a result of highway or commercial development, timber management, surface mining, and wind facility construction and operation also contribute to mortality (USFWS 2019b).

5.7.3.2 Atlantic Salmon

Historically, Rumford Falls was known as the natural barrier to Atlantic Salmon, which have not been caught upstream of Lewiston Falls since 1815. Therefore, this species is not discussed in greater detail.

5.7.4 Biological Opinions, Status Reports, and Recovery Plans

Several biological opinions, status reports, and recovery plans have been developed for Atlantic Salmon, and several biological opinions have been developed for the northern long-eared bat;

however, none of these biological opinions, status reports, or recovery plans for northern long-eared bats are specific to the Project vicinity. Atlantic Salmon are not found within the Project vicinity.

5.7.5 Critical Habitat

When a species is proposed for listing as endangered or threatened under the ESA, the USFWS or NMFS must consider whether there are areas of habitat believed to be essential to the species' conservation. Those areas may be proposed for designation as critical habitat. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Based on a review of USFWS' IPaC report, no critical habitat has been designated within the Project Boundary for either of the identified species (USFWS 2019a). NMFS stated in their September 19, 2019 letter that the Project does not occupy any listed critical habitat for Atlantic Salmon (NMFS 2019).

5.7.6 Temporal and Spatial Distribution of Rare, Threatened, and Endangered Species

Little information exists regarding the temporal and spatial distribution of RTE species within the Project Boundary or adjacent to the Project.

5.8 Recreation and Land Management

5.8.1 Existing Recreation Facilities and Opportunities

Boating and fishing are the primary recreational activities that occur in the Project Boundary; however, recreational use in the Project vicinity is limited and typically comprised of local residents. Due to the size of the Middle Dam impoundment, most of the recreational use occurs on the Upper Dam impoundment (FERC 1993).

Under the current license, RFH developed a carry-in canoe facility at the Carlton Bridge site, located on the eastern edge of the Swift River just upstream of its confluence with the Androscoggin River, which includes a parking area and a launching ramp with ADA access (RFH 2007). RFH currently operates and maintains the facility.

The previous licensee, Rumford Falls Power Company, also installed a boat launch facility in Hanover, Maine, the town just to the east of the Town of Rumford. The Project was a cooperative venture between the MDIFW, Town of Hanover, and the original licensee. Rumford Falls Power Company purchased the land on January 27, 1999, but conveyed half of the site to the MDIFW on December 15, 1999 and the other half of the site to the Town of Hanover on February 2, 2000. The facility was designed by MDIFW and is operated and maintained by the Town of Hanover (Rumford Falls Power Company 2000).

There is also a trailer-accessible public boat ramp, which is not owned by RFH, located approximately 2 miles south of the Project on the Androscoggin River along Route 2. It has a concrete ramp and parking (Bureau of Parks and Lands 2019).

RFH owns the Veteran's Park, off of Bridge Street in downtown Rumford. RFH owns an ATV trail within the Project Boundary, which is used solely as a recreation trail to pass by foot, ATV, or snowmobile. Rumford Riders ATV Club maintains the trail and posts signage.

Fishing access to the Middle Dam impoundment is obtained via informal access at J. Eugene Boivin Park. Due to the relatively small size of the Middle Dam impoundment and the close proximity to the Lower Station Development, the Licensee discourages in-water recreational activities in this area due to access and safety concerns. Access to the tailrace areas and bypassed reaches is limited to shoreline fishing along the western shoreline at the Lower Station tailrace (FERC 1993).

The previous licensee investigated the need for additional public access for fishing in the tailrace area, but due to safety concerns related to the steep and rocky slopes along both banks and the poor fishing opportunities resulting from the discontinuation of trout stocking it was not recommended (FERC 1993).

Wheeler Island

Wheeler Island is located approximately one mile upstream of the Upper Dam in the Project impoundment. It appears to be a popular recreational area used by locals for camping and other activities.

J. Eugene Boivin Park

J. Eugene Boivin Park is an area immediately downstream of the Upper Station Development on river left (looking downstream), and adjacent to the Lower Station Development that offers views of Rumford Falls and the Project dams. It also provides informal access to the Middle Dam impoundment.

Rumford Falls Trail

The Rumford Falls Trail is a 1.6-mile loop consisting of sidewalks and a gravel road. The trail begins at the visitor center off of Bridge Street in downtown Rumford near the Middle Dam impoundment. Heading in a counter-clockwise direction from the visitor center, the route goes moderately uphill on the sidewalk along U.S. Route 2 for 0.5 mile. The trail then heads east onto South Rumford Road where it crosses the Androscoggin River on a high bridge and offers great views of the dam and Rumford in the background. On the opposite side of the bridge, a gated gravel road heads northwards (downstream) parallel to the river. Along this section are lookouts that provide views of the dam and Rumford Falls. After approximately 0.7 mile, the gravel road intersects Bridge Street (ME Route 108). The trail heads left on the sidewalk and continues over two additional bridges and past Veteran's Park before returning to the visitor center parking lot (Maine Trail Finder 2019). Due to rock slides along the gravel road portion of the trail, the trail has been closed to visitors.

5.8.2 Current Project Recreation Use Levels

Recreation use levels have been documented as previously required in the FERC Licensed Hydropower Development Recreation Report (FERC Form 80). The most recent FERC Form 80 was filed with FERC in 2015 for Reporting Year 2014. The number of annual visits to the recreation areas at the Rumford Falls Project was estimated to be 5,410 daytime and zero nighttime visits in 2014. The licensed recreation facilities do not appear to be utilized to the maximum capacity, with 30 percent utilization or less at all sites.

5.8.3 Existing Shoreline Buffer Zones within the Project Boundary

RFH maintains a buffer zone above the Upper Dam impoundment that extends about one mile along both shorelines. The buffer zone is 10 to 800 feet wide and is accessible to the public from either U.S. Route 2 or Maine Route 120. Most of the remaining land adjacent to the shoreline and within the Project Boundary is owned by private individuals and the Town of Rumford. In addition, the state of Maine has a mandatory shoreline zoning ordinance that regulates a 250-foot buffer zone (FERC 1993).

5.8.4 Recreation Needs Identified in Management Plans

The 2014-2019 Maine State Comprehensive Outdoor Recreation Plan (SCORP) identifies recreation needs for both the State and New England as a whole. The SCORP identifies recreation aspects of statewide importance and which of those will be addressed through Maine's share of the Federal Land and Water Conservation Fund (LWCF) grants. The SCORP reports that Maine residents participate in outdoor recreation activities at an overall higher rate than both national and regional averages. Maine participation rates are especially high in nature-based activities (Maine Bureau of Parks and Land [BPL] 2015).

In April 2014, an online resident survey on outdoor recreation was administered to inform the SCORP planning process. The survey examined recreational preferences in terms of outdoor recreation activities, amenities, and settings and Maine State Park use and perceptions of services offered. In terms of preferred recreational settings, residents and non-residents both found undeveloped and developed outdoor settings to be highly desirable, with water-related outdoor settings in particular being the most popular setting for both residents and non-residents. Survey respondents rated the top eight settings preferred by Maine recreationists using a five-part scale ranging from "Very Desirable" to "Very Undesirable" (Maine BPL 2015). The percentage of survey respondents that rated each setting as "Very Desirable" are provided below.

- Lakes/ ponds (69.4 percent)
- Mountains (53 percent)
- Forests (50.3 percent)

- Rivers (49.2 percent)
- Beaches (44.8 percent)
- Coastal trails (40.2 percent)
- Backcountry trails (39.9 percent)
- Cultural landmarks (32.5 percent)

Perhaps one of the most essential functions of this study was to assess the types of outdoor activities that respondents participate in. Participants were asked to select all of the outdoor recreation activities they had participated in from 2012 to 2014 from a comprehensive list of 32 options (Maine BPL 2015). Table 5.8-1 lists the top five most popular recreational activities and the percentage of survey participants who participated in those activities from 2012 to 2014 in the three primary survey segments.

TABLE 5.8-1
TOP FIVE MOST POPULAR MAINE RECREATIONAL ACTIVITIES FOR THE THREE PRIMARY SURVEY SEGMENTS FROM 2012 TO 2014

Most Popular Recreation Activities[1]	Maine General Population (%)	Maine Resident/ Recreationists (%)	Non-Resident Recreationists (%)
#1 Most Popular	Driving for Pleasure (85.8)	Enjoying Nature (79.9)	Enjoying Nature (64.3)
#2 Most Popular	Fairs/Community Events (79.9)	Fairs/Community Events (75.7)	Viewing Wildlife (58.6)
#3 Most Popular	Enjoying Nature (78.9)	Viewing Wildlife (74.2)	Driving for Pleasure (56.7)
#4 Most Popular	Swimming (69.1)	Swimming (73.9)	Fishing on Open Water (56.2)
#5 Most Popular	Viewing Wildlife (68.6)	Fishing on Open Water (73.3)	Hiking (52.2)

Source: Maine BPL 2015.

The plan identifies recommendations of statewide significance that would aid Maine in connecting more Mainers of all ages with the benefits of outdoor recreation. These recommendations are (Maine BPL 2015):

1. Encourage increased participation in outdoor activities by raising awareness of outdoor recreation's health and wellness benefits.

2. Improve awareness of existing outdoor recreation opportunities.

3. Support programs and expand opportunities that provide youth with experiences that connect them with nature.

4. Provide a broad range of outdoor opportunities to meet the varied interests and abilities of adults, especially the older and less-abled public.

5. Connect Mainers with close to home outdoor recreation opportunities.

5.8.5 Licensee's Shoreline Permitting Policies

RFH owns minimal land in the Project vicinity surrounding the impoundment. Zoning along the impoundment is regulated by municipal zoning ordinances as required by State Law. The land within 250 feet of the impoundment is within the area affected by each town's Shoreline Zoning Ordinance.

5.8.6 Specially Designated Recreation Areas in or Adjacent to the Rumford Falls Project or in the Project Vicinity

5.8.6.1 Wild and Scenic River System

The Androscoggin River is not designated as part of, and is not under study for inclusion in, the National Wild and Scenic River System.

5.8.6.2 Nationwide Rivers Inventory

The Androscoggin River upstream and downstream of the Rumford Falls Project has been listed by the National Park Service (NPS) on the Nationwide Rivers Inventory (NRI). The description of the river reach and outstandingly remarkable values identified by the NPS for these sections of the river are detailed below.

The reach from Hastings Island to South of Rumford Center (upstream of the Project) has been listed in the NRI for its hydrologic value. The 17-mile reach of river is a sparsely-developed, high-order river. Segments in this reach include the Lovejoy Bridge and the Sunday River Bridge, both are National Historic Register Sites. A small portion (<1 mile) of this reach of the Androscoggin River is included within the Project Boundary (NPS 2019).

A 16-mile reach from Southeast of Dixfield to Bean Island (downstream of the Project) has also been listed in the NRI for its hydrologic value as a sparsely-developed, high-order river. This reach of the Androscoggin River is outside of the Project Boundary (NPS 2019).

5.8.6.3 National Trails System and Wilderness Areas

The Rumford Falls Project is not located within or adjacent to lands included in, or under study for inclusion in, the National Trails System or designated as, or under study for inclusion as, a Wilderness Area.

5.8.6.4 Scenic Byways

There are no federally designated scenic byways in the vicinity of the Project.

5.8.7 Recreational and Non-Recreational Land Use and Management Adjacent to the Project Boundary

Land use in the general vicinity of the Project facilities is considered urban, and use is primarily industrial and commercial. Along the Upper Dam impoundment the land is rural, and primarily used for agriculture. There is limited recreational land use adjacent to the Project Boundary.

5.8.8 Non-Recreational Land Use and Management within the Project Boundary

Beyond lands needed for Project operations, RFH owns minimal land associated with the Project or located within the Project Boundary. There is no “non-recreational land use” within the Project Boundary.

5.9 Aesthetic Resources

The Project facilities and the Middle Dam impoundment are situated in a relatively developed river setting and have been part of the Rumford, Maine environment for over 100 years. The Upper Dam impoundment is bordered by forested areas and farmlands, which offer scenic views from the water or nearby roads.

The 650-foot-long bypassed reach below the Upper Dam consists of exposed bedrock over which water, from spillage and leakage, flows at a steep gradient and is known as Rumford Falls. The

2,865-foot-long bypassed reach below the Middle Dam includes a narrow pool, bedrock outcroppings, and steep cascades. The natural cascades within the bypassed reaches are the prominent aesthetic resources at the Project and offer scenic views below the Upper and Middle Dam. Views from the road of the cascades within the upper bypassed reach are obstructed because of the Upper Dam and forebay wall along Route 2. Rumford Falls are visible from various locations within the Project vicinity including the J. Eugene Boivin Park and Rumford Falls Trail. The cascades within the Middle Dam bypassed reach can be viewed from the Memorial Bridge, looking both upstream and downstream (FERC 1993).

In 1989, the previous licensee conducted a study to evaluate the appropriate flow requirements needed to protect the physical quality of the bypassed reaches. Minimum flows in the bypassed reaches were shown to meet aesthetic management objectives and it was determined that increased flows would not result in an appreciable aesthetic benefit (FERC 1993).

Over the past 100 years, the Project has become integrated with the environmental and visual setting of the surrounding area. There are no changes being proposed to the Project that would affect aesthetic resources in the Project vicinity.

5.10 Cultural Resources

In considering a new license for the Project, FERC has the lead responsibility for compliance with applicable federal laws, regulations, and policies pertaining to historic properties, including the National Historic Preservation Act of 1966 (NHPA), as amended[4]. Section 106 of the NHPA (Section 106)[5] requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.

The Section 106 process (defined at 36 CFR Part 800) is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, State Historic Preservation Officers (SHPO), federally recognized Indian

[4] 54 USC §300101 et seq.
[5] 54 USC §306108.

Tribes, and other parties with a potential interest in an undertaking's effects on historic properties. The goals of the Section 106 process are to:

- Identify historic properties that may be affected (directly and/or indirectly) by an undertaking;
- Assess the effects of an undertaking on historic properties; and
- Seek ways to avoid, minimize, or mitigate adverse effects on historic properties through consultation.

Historic properties are defined in 36 CFR Part 800 as any pre-contact or historic period district, site, building, structure, or individual object listed in or eligible for inclusion in the National Register of Historic Places (NRHP). This term includes artifacts, records, and remains that are related to and located within historic properties, as well as properties of traditional religious and cultural importance (often referred to as "traditional cultural properties" or TCPs) that meet the NRHP criteria.

The Secretary of the Interior has established the criteria for evaluating properties for inclusion in the National Register (36 CFR Part 60). In accordance with the criteria, properties are eligible if they are significant in American history, architecture, archaeology, engineering, or culture. Historic properties that are considered significant possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Are associated with the lives of persons significant in our history; or
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant or distinguishable entity whose components may lack individual distinction; or

- Have yielded or may be likely to yield information important in prehistory or history.

Historical and archaeological resources at the Project were evaluated since the previous relicensing, as described below in Sections 5.10.2 and 5.10.3.

5.10.1 Area of Potential Effects

The area of potential effects (APE) is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The Commission has not yet defined an APE for the Project. In the context of the relicensing process, FERC generally defines the APE as follows: "The APE includes all lands within the Project Boundary. The APE also includes any lands outside the Project Boundary where cultural resources may be affected by Project-related activities that are conducted in accordance with the FERC license."

Because the Project Boundary encompasses all lands that are necessary for Project purposes, all Project-related operations, potential enhancement measures, and routine maintenance activities associated with the implementation of a license issued by the Commission are expected to take place within the Project Boundary. The proposed APE, therefore, is the Project Boundary. This APE is consistent with the potential scope of Project effects and the manner in which the Commission has defined the APEs for similar hydroelectric relicensings.

5.10.2 Archaeological Resources

A Phase I Archaeological Investigation was conducted in 1988 (Putnam, Baker, and Petersen 1989). During the Phase I survey, 31 sites were identified (25 unequivocal aboriginal sites and six possible aboriginal sites) within the Project Boundary, and Phase II testing was recommended at all 31 sites; however testing was only conducted at 29 of the sites, because landowner permission was denied at the other two sites. Follow-up Phase II investigations were completed in 1989 to evaluate whether any of the sites were eligible for listing in the NRHP (Hamilton et al. 1990).

Results of the Phase II investigations determined that eight of the 29 tested prehistoric sites examined were National Register-eligible.

In 1991, the Licensee filed a Cultural Resources Management Plan (CRMP) with FERC for the treatment of archaeological properties. The CRMP, along with the 1993 Programmatic Agreement (PA) between FERC, the ACHP, and the Maine Historic Preservation Commission (MHPC), stated that Phase III procedures were required for six of the eight NRHP-eligible archaeological sites. Phase III procedures consisted of further study and excavation of the six sites. In addition to the CRMP, the PA required that the Licensee develop a Cultural Resources Contingency Plan (CRCP) to address matters not adequately covered in the CRMP. On March 10, 1997, the Licensee filed a CRCP, which was approved by the Commission on May 2, 1997.

The PA requires the Licensee to file an annual report summarizing the cultural resource activities conducted during the previous year and the cultural resource activities to be conducted in the following year. On January 29, 2019, the Licensee proposed that the annual monitoring and reporting be modified to a biennial cycle based on eight years of erosion monitoring without seeing any changes in erosion at any of the NRHP-eligible sites at the Project. On March 26, 2019 (followed by an errata notice on March 27, 2019), FERC issued an Order Amending License Article 406, which modified the PA and approved CRCP to require the Licensee to file biennial reports by January 31 summarizing the cultural resource activities conducted during the previous two years and the cultural resource activities to be conducted in the following two years. The next report is due on January 31, 2021.

5.10.3 Historic Architectural Resources

No historic properties listed on or eligible for listing on the NRHP have been identified in the Project Boundary. The Project's hydroelectric facilities were evaluated during the previous relicensing and were determined not eligible for listing on the NRHP (MHPC 1993).

5.10.4 Existing Discovery Measures

Article 406 of the license for the Project includes measures to protect and manage historic properties:

> Article 406. The Licensee shall implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties Affected by the Rumford Falls Hydroelectric Project."

The CRCP required by the PA addresses periodic monitoring of the reservoir shoreline, unscheduled development and ground disturbance, and unanticipated discoveries. The CRCP includes aerial photographic monitoring once every five years and bi-yearly visual monitoring for vandalism and erosion. The CRCP also describes consultation procedures with the MHPC for any unscheduled development or ground disturbance and for any unanticipated discoveries.

5.11 Socioeconomic Resources

The Rumford Falls Project is located in Oxford County. The 2010 census reported that 57,830 people reside in Oxford County. The estimated 2018 population of Oxford County was 57,618, reflecting a 0.4 percent decrease over the eight-year period between. The community is mainly comprised of rural, small towns. In 2017, the median household income in Oxford County was $44,582 (U.S. Census Bureau undated*a*). The statewide median household income was $53,024 the same year (U.S. Census Bureau undated*b*).

Oxford County has an area of approximately 2,077 square miles and a population density of 27.8 persons per square mile as of 2010 (U.S. Census Bureau undated*a*). The Town of Rumford is located adjacent to the Project and is the most populated community in Oxford County, with a land area of 68.55 square miles and a population of 5,839 persons (85.2 persons per square mile) in 2010 (U.S. Census Bureau undated*c*).

In 2018, the civilian labor force was estimated to be approximately 26,683, with 25,618 employed persons and 1,065 unemployed persons (Maine Department of Labor 2019). The top ten private employers, by average monthly employment, in Oxford County in 2018 are listed in Table 5.11-1 below.

TABLE 5.11-1
TOP TEN PRIVATE EMPLOYERS IN OXFORD COUNTY IN 2018

Employer Name	Number of Employees	Business Description
ND Paper Inc.*	501 to 1,000	Paper, except newsprint, mills
Stephens Memorial Hospital	501 to 1,000	General medical and surgical hospitals
Oxford Casino	1 to 500	Casinos, except casino hotels
Walmart/Sam's Club	1 to 500	Warehouse Clubs and Supercenters
Sunday River Skiway	1 to 500	Skiing facilities
Irving Forest Products Inc.	1 to 500	Sawmills
Central Maine Healthcare Corp	1 to 500	General medical and surgical hospitals
C N Brown Co.*	1 to 500	Fuel dealers
Hannaford Bros Co*	1 to 500	Supermarkets and other grocery stores
Hunting Dearborn Inc.	1 to 500	Machine shops

Source: Maine Department of Labor 2019.
*Located in the Town of Rumford.

The estimated unemployment rate for Oxford County in May 2019 was 4.0 percent, compared to 3.3 percent unemployment in Maine and a national unemployment rate of 3.6 percent for the same time period. Although the unemployment rate for Oxford County has increased 0.3 percent from 2018, it has been steadily decreasing since 2014, where the unemployment rate was 7.9 percent (Main Department of Labor 2019).

5.12 Tribal Resources

The Project includes no Tribal lands. Per 18 CFR §5.7, FERC will hold an initial tribal consultation meeting no later than 30 days of filing of the NOI and PAD. No impacts to tribal cultural or economic interests associated with the Project have been identified.

Section 6
Preliminary Issues and Potential Studies List

6.1 Preliminary Issues, Studies, and Potential Protection, Mitigation, and Enhancement (PM&E) Measures

As discussed in Section 2 of this PAD, parties with an interest in the Project were identified and sent a PAD questionnaire to identify resource areas of interest. The resource areas of interest identified during this preliminary consultation are presented by resource area in this section.

The Project is operated in a run-of-river mode within 1 foot of full pond elevations and is required to minimize the fluctuations of the reservoirs surface elevations at all times. The upper bypass reach is 650 feet long and is steep with exposed bedrock. Based on the results of the previous licensing effort, a minimum flow of approximately 1 cfs is provided to the upper bypassed reach. The Middle Dam bypassed reach is 2,865 feet long and consists of bedrock outcroppings and steep cascades. Based on the results of the previous licensing effort, a minimum flow of approximately 21 cfs is provided to the Middle Dam bypassed reach. Previous studies of the Project's operations have demonstrated that under the current operations (1) water quality standards have been met throughout the Project area and significant DO increases could not be realized from modifying the operating mode of the Project; (2) modifying the flow regime within the bypassed reaches would not enhance instream habitat due to the existing quality of the habitat (i.e., steep with bedrock); and (3) minimum flows in the bypassed reaches were shown to meet aesthetic management objectives and increased flows would not result in an appreciable aesthetic benefits.

6.1.1 Geology and Soils

6.1.1.1 Potential Issues

No potential issues related to geology and soils have been identified.

6.1.1.2 Proposed Studies

No studies are being proposed for geologic or soil resources.

6.1.1.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to geology and soils would be expected, and thus, no PM&E measures are proposed at this time.

6.1.2 Water Resources

6.1.2.1 Potential Issues

The Androscoggin River has a history of industrial and municipal use over the last 200 years; however, water quality has since improved substantially. In support of the previous relicensing, a water quality study showed that due to the Project's run-of-river operations and the impoundment's limited retention time, DO concentrations were consistently within the applicable water quality standards for the entire Project vicinity and there was little, if any, horizontal or vertical stratification of DO within the Project vicinity. The MDEP, USFWS, and MDIFW concurred with the results of the study. Since the velocity of the Androscoggin River is swift within the Project vicinity, natural aeration is good (Rumford Falls Power Co. 1991). More recent water quality data collected within the Project vicinity also met water quality standards and a water quality certificate was issued (to upgrade the Project's turbine-generator capacity) by the MDEP in 2009.

During initial outreach to resource agencies, MDIFW indicated it would like to review minimum flow provisions, impoundment water level fluctuations, and discharge patterns of the Project. However, a study was not requested.

6.1.2.2 Proposed Studies

RFH will coordinate with the MDEP and other stakeholders to identify the potential need for water quality information and will obtain the data necessary to support issuance of a water quality certificate.

6.1.2.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to water resources would be expected, and thus, no PM&E measures are proposed at this time.

6.1.3 Fish and Aquatic Resources

6.1.3.1 Potential Issues

Diadromous fish do not occur within the Project vicinity. The Androscoggin River includes a number of steeper gradient stretches with numerous downstream natural and man-made barriers for diadromous fishes. In addition, prior to establishment of the Project, Rumford Falls was the natural barrier to Atlantic Salmon (Foster and Atkins 1868; as cited in MDMR et al. 2017). Furthermore, there are no records of Atlantic Salmon being caught upstream of the downstream Lewiston Falls since the early 1800s.

Rumford Falls is also believed to be the upstream natural limit of American Eel (MDMR and MDEP 2008; as cited in Moore and Reblin 2010) and the MDIFW have recently indicated that there are no confirmed occurrences of American eel on the mainstem of the Androscoggin River or its associated tributaries upstream of the city of Auburn (MDIFW 2019a).

In response to the PAD questionnaire, the MDIFW indicated a creel survey and a salmonid tracking study may be requested as a study. However, RFH believes that sufficient data exists to characterize the fish community as described in Section 5.4 of this PAD.

6.1.3.2 Proposed Studies

Given the number of natural and man-made barriers associated with the downstream portions of the river, as well as the existing data that characterizes the local fish community, RFH is not proposing any fishery studies.

6.1.3.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to fish and aquatic resources would be expected, and thus, no PM&E measures are proposed at this time.

6.1.4 Wildlife and Botanical Resources (including T&E species)

6.1.4.1 Potential Issues

No potential issues related to wildlife or botanical resources have been identified.

6.1.4.2 Proposed Studies

No studies are being proposed for wildlife and botanical resources.

6.1.4.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to wildlife and botanical resources would be expected, and thus, no PM&E measures are proposed at this time.

6.1.5 Recreation and Land Use

6.1.5.1 Potential Issues

In response to the PAD questionnaire, the MDIFW expressed interest in exploring recreational access opportunities to the Project vicinity including access to the headponds and tailrace areas for angling. The MDIFW also indicated an angler use area may be requested as a study. The Town of Rumford expressed interest in improving recreational resource condition/access throughout the Project vicinity, specifically for Falls Hill Trail, Wheeler Island, the Rumford boat launch, and Androscoggin River frontage.

6.1.5.2 Proposed Studies

RFH appreciates the comments it received regarding recreational resources within the Project vicinity. Based on this interest, RFH proposes to conduct a recreational facility inventory of the existing formal Project sites. The inventory will consist of a description of available access, site ownership and management, the number and types of facilities and amenities, site conditions, and observed activities and recreational use of each formal Project recreation site. This information will be used to summarize the existing recreational resources, determine the current use capacity of recreation sites, and to develop an estimate of recreation use and demand at the Project for the term of the new license.

6.1.5.3 Potential PM&E Measures

The License will continue to provide for public use and access of Project lands and waters consistent with its FERC license.

6.1.6 Aesthetic Resources

6.1.6.1 Potential Issues

No issues have been identified related to aesthetic resources. The Project has been present for over 100 years and has become integrated with the environmental and visual setting of the surrounding area. The previous licensee conducted a study to evaluate the appropriate flow requirements needed to protect the physical quality of the bypassed reaches. Minimum flows in the bypassed reaches were shown to meet aesthetic management objectives and it was determined that increased flows would not result in an appreciable aesthetic benefit.

6.1.6.2 Proposed Studies

No studies are being proposed for aesthetic resources.

6.1.6.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to aesthetic resources would be expected, and thus, no PM&E measures are proposed at this time.

6.1.7 Cultural and Tribal Resources

6.1.7.1 Potential Issues

As a result of the previous relicensing, a Project-specific PA, CRMP, and CRCP was developed and implemented. Consistent with the requirements of these documents, archaeological resource areas of interest within the Project's APE have been routinely monitored since issuance of the Project's existing license. Upon commencement of the monitoring program, the monitoring was performed on an annual basis. Following eight years of monitoring, the applicable parties agreed that the monitoring schedule could be adjusted to a biennial cycle. RFH continues to perform this monitoring, which includes the development of a report that is filed with FERC on a routine basis.

Based on the previous relicensing, the Project's structural and architectural sites were determined not to be eligible for listing on NRHP. In addition, no impacts to tribal, cultural, or economic interests associated with the Project have been identified to date.

6.1.7.2 Proposed Studies

Given the historical architectural and archaeological resource surveys that have been performed to date, RFH is not proposing any studies.

6.1.7.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to cultural or Tribal resources would be expected, and thus, no PM&E measures are proposed at this time.

6.1.8 Socioeconomic Resources

6.1.8.1 Potential Issues

No potential issues related to socioeconomic resources have been identified.

6.1.8.2 Proposed Studies

No studies are being proposed for socioeconomic resources.

6.1.8.3 Potential PM&E Measures

No changes are proposed to current Project operations; therefore, no change to socioeconomic resources would be expected, and thus, no PM&E measures are proposed at this time.

Section 7
Comprehensive Plans and Resource Management Plans

RFH reviewed FERC's May 2019 List of Comprehensive Plans applicable to Maine and adopted by FERC under Section 10(a)(2)(A) of the FPA, 16 USC §803(a)(2)(A). Of the 38 comprehensive plans relevant to Maine, 7 are considered potentially applicable to the Project. Based on a review of the seven potentially relevant comprehensive plans, RFH believes that the Project, as currently operated, is consistent with each of the plans listed below.

- Maine Department of Agriculture, Conservation, & Forestry. Maine State Comprehensive Outdoor Recreation Plan (SCORP): 2014-2019. Augusta, Maine.

- Maine Department of Conservation. 1982. Maine Rivers Study-final report. Augusta, Maine. May 1982.

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Section 8
Summary of Contacts

In support of preparing this PAD, RFH distributed the PAD questionnaires to request information related to the Project, the Project vicinity, and the region. The PAD questionnaires were distributed via email on May 30, 2019 and a follow-up email was sent on June 19, 2019, to a number of parties. This email and responses to the questionnaire are included in Appendix A.

Additional consultation was conducted with the MDIFW, MDOC, NMFS, and USFWS regarding RTE species, critical habitat, EFH, and unique or exemplary natural communities, as applicable. Consultation with the Maine Coastal Program was conducted to ensure the Project is not located in the coastal zone as identified by the State's coastal zone management plan. This consultation has been compiled into Appendix A of this PAD.

Notice of the filing of the NOI and this PAD has been provided to representatives of state and federal resource agencies, local governments, Indian tribes, NGOs, and members of the public that may have an interest in participating in the relicensing of the Project. These stakeholders are identified in the associated distribution list.

Section 9
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APPENDICES

APPENDIX A
CONSULTATION

Rumford Falls Correspondence Log

Date	To	From	Subject
May 30, 2019	Stakeholders	Rumford Falls Hydro	Distribution of PAD questionnaire.
May 31, 2019	Rumford Falls Hydro	USFWS	Response to PAD questionnaire.
June 3, 2019	Rumford Falls Hydro	MDIFW	Response to PAD questionnaire.
June 4, 2019	Rumford Falls Hydro	MDMR	Response to PAD questionnaire.
June 5, 2019	Rumford Falls Hydro	NOAA	Response to PAD questionnaire.
June 19, 2019	Stakeholders	Rumford Falls Hydro	Reminder for return of PAD questionnaire.
July 8, 2019	Brookfield	Town of Rumford	Request for Information Regarding the Relicensing of the Rumford Falls Hydroelectric Project (FERC No. 2333).
July 23, 2019	MDIFW	HDR	Request for information on threatened, endangered, and special concerns species and habitats.
July 23, 2019	MDOC	HDR	Request for information on threatened, endangered, and special concerns species and critical habitats.
July 23, 2019	NMFS	HDR	Request for information on species listed under the Endangered Species Act and essential fish habitat.
July 23, 2019	USFWS	HDR	Request for information on species listed under the Endangered Species Act and critical habitats.
July 25, 2019	HDR	USFWS	Request for Information Regarding the Relicensing of the Rumford Falls Hydroelectric Project (FERC No. 2333).

Date	To	From	Subject
July 25, 2019	HDR	MNAP	Rare and exemplary botanical features in proximity to: FERC No. 2333, Rumford Falls Hydroelectric Project, Rumford, Maine.
August 2, 2019	HDR	Maine Coastal Program	Request for concurrence Project is not within the coastal zone and CZMA is not required.
August 16, 2019	HDR	DMR	Request for concurrence Project is not within the coastal zone and CZMA is not required.
August 16, 2019	HDR	MDIFW	Request for information on species listed under the Endangered Species Act and essential fish habitat.
September 19, 2019	HDR	NMFS	Request for information on species listed under the Endangered Species Act and essential fish habitat.

From:	Dorman, Randy
To:	Murphy,Kyle; Gregg, Shawn
Bcc:	sean.mcdermott@noaa.gov; matt.buhyoff@noaa.gov; donald.dow@noaa.gov; sean.mcdermott@noaa.gov; Richard.C.Kristoff@usace.army.mil; jay.l.clement@usace.army.mil; Harold.Peterson@bia.gov; antonio_bentivoglio@fws.gov; bryan_sojkowski@fws.gov; mprout@fs.fed.us; kevin_mendik@nps.gov; nstasuli@usgs.gov; michael.scarzello@eaglecreekre.com; kevin@americanwhitewater.org; mzakutansky@outdoors.org; smahoney@clf.org; abeahm@maineaudubon.org; tom.christopher@comcast.net; Kathy.Howatt@maine.gov; john.perry@maine.gov; James.Pellerin@maine.gov; Gail.Wippelhauser@maine.gov; paul.christman@maine.gov; casey.clark@maine.gov; kathleen.leyden@maine.gov; townmanager@rumfordme.org; info@oxfordcounty.org
Subject:	Rumford Falls Hydro Relicensing Questionnaire
Date:	May-30-19 5:26:00 PM
Attachments:	Rumford PAD Questionnaire Project Maps.pdf Rumford PAD Questionnaire Mailing List.pdf Rumford PAD Questionnaire 05-30-19.pdf

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The **Rumford Falls Hydro Project** is a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in Rumford, Maine. **Brookfield Renewable** is about to begin the relicensing process for the Project, which is under the jurisdiction of the **Federal Energy Regulatory Commission** (FERC).

As part of the relicensing, Brookfield Renewable is preparing a **Pre-Application Document** (PAD), which will be filed on or before September 30, 2019. The PAD provides stakeholders with the summaries of existing, relevant, and reasonably available information related to the Project.

The attached **Questionnaire** is an important part of our due diligence process. We kindly ask you to review and respond to this document within the next 30 days, or by **July 1, 2019**. Your participation will greatly assist the relicensing process by helping us update our contact lists and identifying information sources for development of the PAD.

Best,

Randy

Randy Dorman
Licensing Specialist

Brookfield Renewable
150 Main Street, Lewiston, Maine 04240
T 207-755-5605 **C** 207-402-0481
Randy.Dorman@BrookfieldRenewable.com
www.brookfieldrenewable.com

Brookfield

Rumford Falls Hydro Project (FERC No. 2333)
PAD Questionnaire Distribution List
May 31, 2019

Federal Agencies

Sean McDermott
Hydropower Program Coordinator
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930-2298

Matt Buhyoff
Atlantic Salmon Recovery Coordinator
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
17 Godfrey Dr.
Orono, ME 04473

Don Dow
Hydro/Fish Passage Engineer
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
17 Godfrey Dr.
Orono, ME 04473

William McDavitt
Environmental Specialist
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
HCD, 55 Great Republic Dr.
Gloucester, MA 01930

Richard Kristoff
U.S. Army Corps of Engineers
New England District/Regulatory Branch
696 Virginia Rd
Concord, MA 01742-2718

Jay Clement
U.S. Army Corps of Engineers
675 Western Avenue
Manchester, ME 04351

Harold Peterson
Natural Resources Officer
U.S. Bureau of Indian Affairs
545 Marriott Drive Ste 700
Nashville, TN 37214

Antonio Bentivoglio
U.S. Fish & Wildlife Service
Maine Field Office
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Falmouth, ME 04105

Bryan Sojkowski
Civil Engineer
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Hadley, MA 01035

Mark Prout
Forest Fish Biologist
U.S. Forest Service
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White Mountain National Forest
Campton, NH 03223

Kevin Mendik
Hydro Program Coordinator
U.S. National Park Service
15 State Street
10th floor
Boston, MA 02109

Nicholas Stasulis
Data Section Chief
USGS New England Water Science Center
196 Whitten Rd.
Augusta, ME 04333

State Agencies

Kathy Davis Howatt
Hydropower Coordinator
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

John Perry
Environmental Coordinator
Maine Department of Inland Fisheries and Wildlife
284 State Street
41 SHS
Augusta, ME 04333-0041

Jim Pellerin
Regional Biologist
Maine Department of Inland Fisheries and Wildlife
Region A
15 Game Farm Road
Gray, ME 04039

Gail Wippelhauser
Marine Resources Scientist
Maine Department of Marine Resources
21 State House Station
Augusta, ME 04333

Paul Christman
Maine Department of Marine Resources
21 State House Station
Augusta, ME 04333-0021

Casey Clark
Maine Department of Marine Resources
21 State House Station
Augusta, ME 04333-0021

Kathleen Leyden
Dir., Maine Coastal Program
Maine Dept. of Agriculture, Cons. & Forestry
Dept. of Agr., Conserv. & Forestry
93 State House Station
Augusta, ME 04333-0038

Hydropower Owners

Michael Scarzello
Eagle Creek Renewable Energy
65 Madison Avenue, Suite 500
Morristown, NJ 07960

Local Government

Nichole Cargnino
Commissioners Clerk
Board of Oxford County Commissioners
26 Western Ave
South Paris, ME 04281-1431

Scott Cole
Town Manager
Rumford, Town of
145 Congress Street
Rumford, ME 04276

Non-Governmental Organizations

Kevin Richard Colburn
National Stewardship Director
American Whitewater
1035 Van Buren Street
Missoula, MT 59802

Mark Zakutansky
Director of Conservation Policy Engagement
Appalachian Mountain Club
100 Illick's Mill Rd.
Bethlehem, PA 18017

Sean Mahoney
Executive Vice President and Director
Conservation Law Foundation Maine
53 Exchange Street, Ste 200
Portland, ME 04101

Andrew Beahm
Executive Director
Maine Audubon Society
20 Gilsland Farm Rd
Falmouth, ME 04105-2100

Thomas J Christopher
Principal
New England FLOW
252 Fort Pond Inn Rd
Lancaster, MA 01523-3230

Rumford Falls Hydro LLC, a subsidiary of Brookfield Renewable, is the licensee for the Rumford Falls Hydro Project, a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in Rumford, Maine. The Project is operated in run-of-river mode. The Project works consist of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the project is 44.5 megawatts (MW) and the project's maximum hydraulic capacity is 7,546 cubic feet per second (cfs).

Upper Station Development: The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The development has a total installed nameplate capacity of 29.30 MW, a maximum hydraulic capacity of 4,550 cfs, and an average annual generation of about 182,407 MWh per year.

Lower Station Development: The Lower Station Development's principal features consist of the Middle Dam, the Middle Canal headgate structure with a waste weir section, the Middle Canal, a gatehouse, two penstocks (each with a surge tank), a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 15.20 MW and a total maximum hydraulic capacity of 2,996 cfs, and an average annual generation of about 108,977 MWh per year.

Project Boundary maps showing the location of these two developments are being distributed along with this questionnaire.

Under the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") administers the relicensing of this project. The existing FERC license expires on September 30, 2024, and Rumford Falls Hydro LLC is beginning the relicensing process soon. Rumford Falls Hydro LLC will be using the Integrated Licensing Process (ILP), as described at 18 CFR §5.0. Accordingly, Rumford Falls Hydro LLC is preparing a Notice of Intent (NOI) to relicense the Rumford Falls Project and a Pre-Application Document (PAD) to be filed by September 30, 2019. The PAD will provide FERC and other entities with existing, relevant, and reasonably available information pertaining to the Rumford Falls Project as well as resources within the vicinity of the project.

This PAD Questionnaire is being used to help identify sources of existing, relevant, and reasonably available information pertinent to the Rumford Falls Project that are not currently in the possession of Rumford Falls Hydro LLC. This information will help to identify any data collection needs or potential resource issues early in the relicensing process. Our intent is to include results of this information request questionnaire in the PAD.

We respectfully request that you please return this PAD questionnaire to Randy Dorman via email at randy.dorman@brookfieldrenewable.com. This will allow for any follow-up contacts that may be needed by Rumford Falls Hydro LLC.

If we do not receive a response within 30 days, this will indicate that:

- you are not aware of any existing, relevant, and reasonably available information that describes the existing Project environment; and
- unless you are the representative of an Indian tribe or federal or state agency, you (and your organization) are not interested in receiving any further correspondence regarding this proceeding and you will be removed from the distribution list.

We greatly appreciate your response and your assistance in this effort to identify information resources and interested parties in this proceeding.

1. Please provide the following information about the person completing this questionnaire.

Name & Title	
Organization	
Address	
Phone	
Email Address	

2. Do you or your organization plan to participate in the relicensing proceeding for the Rumford Falls Hydro Project?

☐ Yes *(if yes, please complete information below)* ☐ No *(if no, please go to No. 3)*

Please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process for these projects. ***(Additional contacts may be provided on a separate page.)***

Name & Title	
Organization	
Address	
Phone	
Email Address	

3. If you and the entity you represent do not want to receive any further correspondence associated with this proceeding, please indicate so here:

____Please remove me and the entity I represent from the mailing list.

4. Do you or your organization know of any existing, relevant, and reasonably available information that describes the existing projects' existing or historical environment (i.e., Project area, adjacent Project vicinity, or areas upstream or downstream of the Rumford Falls Hydro Project)?

☐ Yes *(if yes, please complete Nos. 4a through 4d)* ☐ No *(if no, please go to No. 5)*

a. If yes, please circle the specific resource area(s) that the information relates to:

- Geology and soils
- Water resources
- Fish and aquatic resources
- Wildlife and botanical resources
- Wetlands, riparian, and littoral habitat
- Rare, threatened, and endangered species
- Recreation and land use
- Aesthetic resources
- Cultural resources
- Socioeconomic resources
- Tribal resources
- Other resource information

b. Please briefly describe the information referenced above and/or list available documents *(additional information may be provided on page 5 of this questionnaire).*

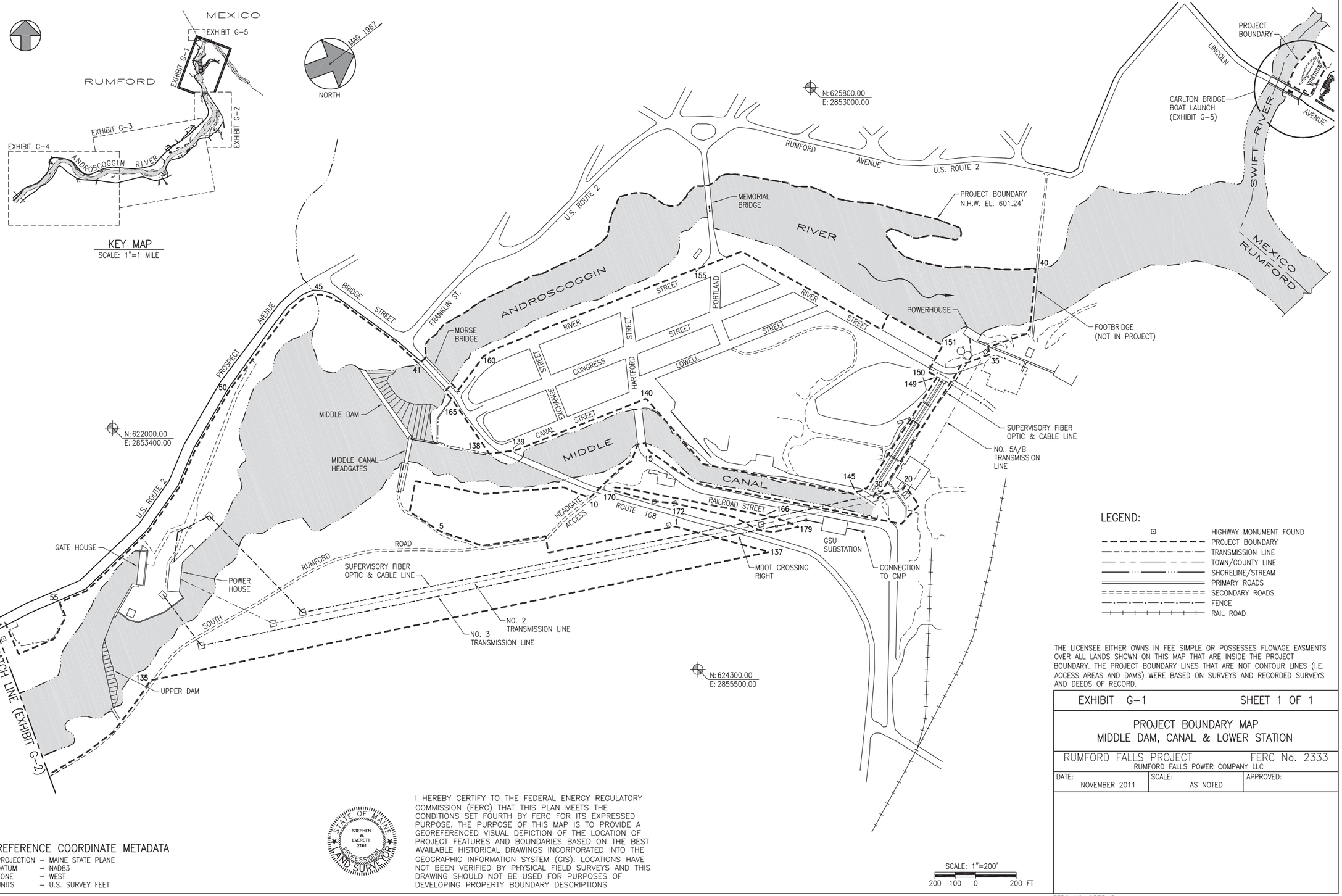
c. Please provide referenced document, source website link, or description of where Rumford Falls Hydro LLC can obtain this information, if available.

d. Based on the specific resources listed in 4a, are you aware of any specific issues related to the identified resource area(s)?

☐ Yes *(please list specific issues below)* ☐ No *(if no, please go to No. 5)*

Resource Area	Description of Issue

5. If you have additional comments and/or questions regarding the Rumford Falls Hydro Project, or the relicensing process, please provide them below.



THE LICENSEE EITHER OWNS IN FEE SIMPLE OR POSSESSES FLOWAGE EASMENTS OVER ALL LANDS SHOWN ON THIS MAP THAT ARE INSIDE THE PROJECT BOUNDARY. THE PROJECT BOUNDARY LINES THAT ARE NOT CONTOUR LINES (I.E. ACCESS AREAS AND DAMS) WERE BASED ON SURVEYS AND RECORDED SURVEYS AND DEEDS OF RECORD.

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN W. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

EXHIBIT G-1 SHEET 1 OF 1

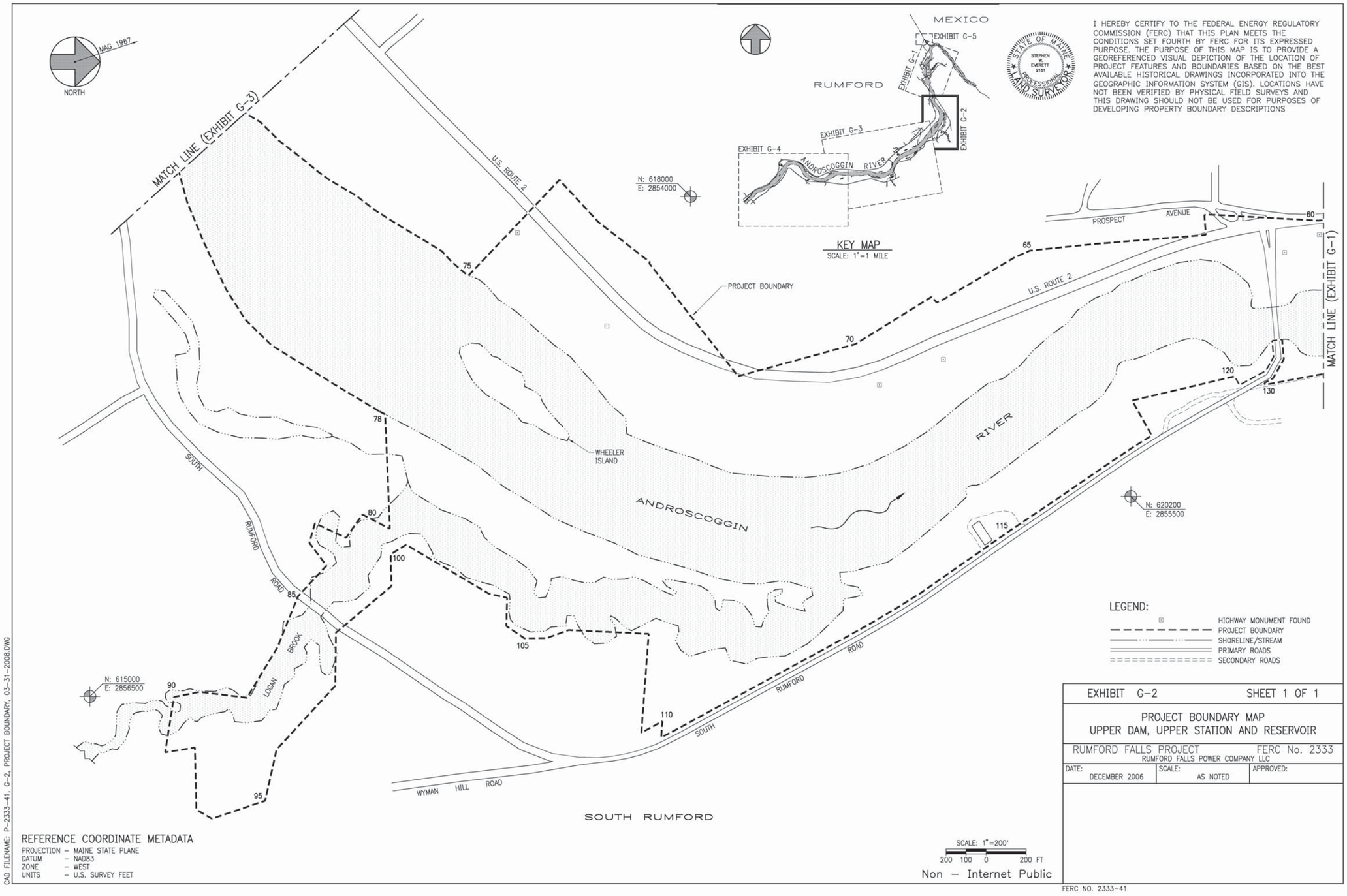
PROJECT BOUNDARY MAP
MIDDLE DAM, CANAL & LOWER STATION

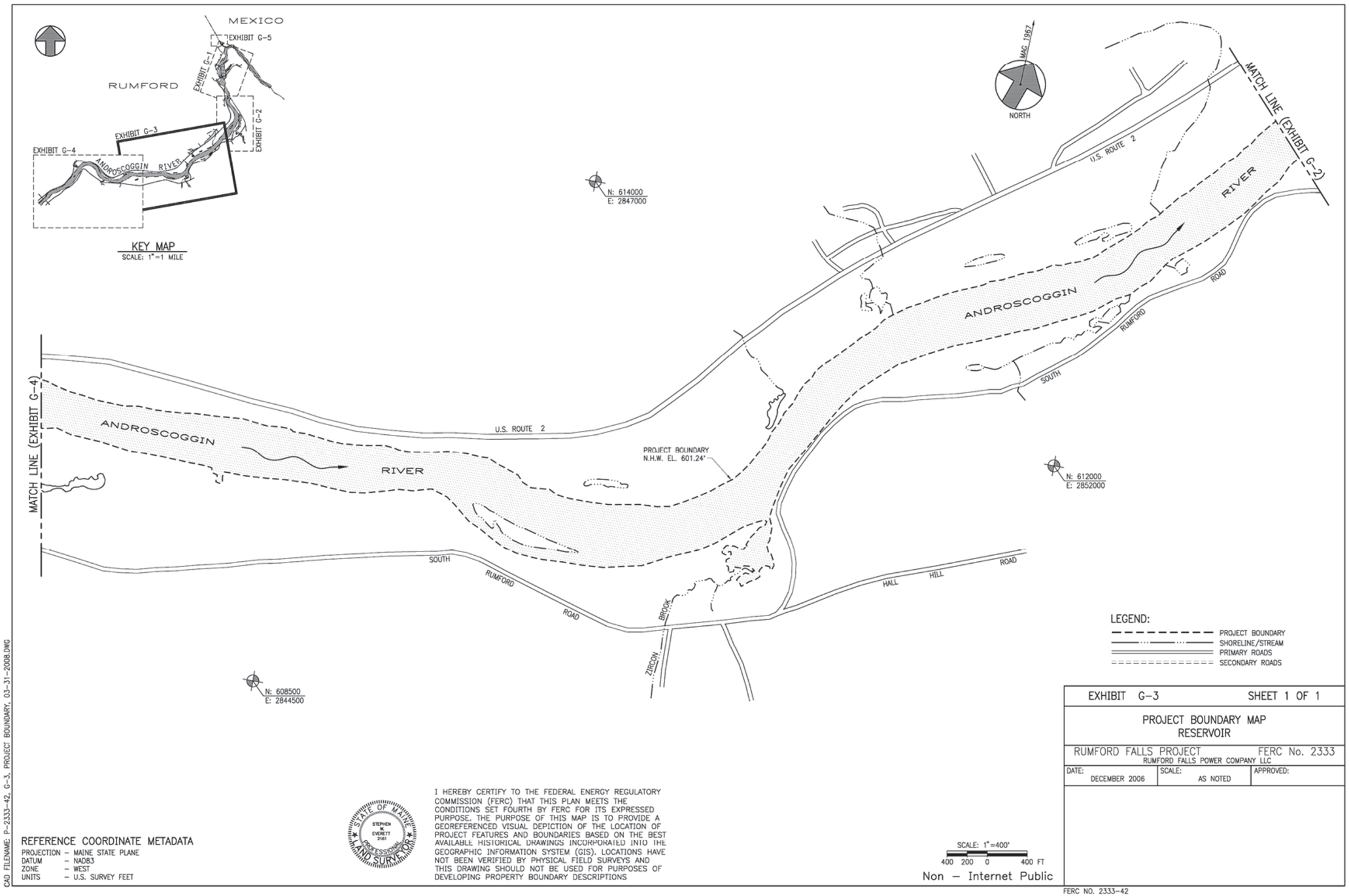
RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
NOVEMBER 2011	AS NOTED	

CAD FILENAME: P-2333-51, G-1, PROJECT BOUNDARY, 02-07-2012.DWG

FERC NO. 2333-51


MAG 1967
NORTH
MATCH LINE (EXHIBIT G-3)
U.S. ROUTE 2
PROJECT BOUNDARY
WHEELER ISLAND
ANDROSCOGGIN RIVER
SOUTH RUMFORD ROAD
RUMFORD ROAD
LOGAN BROOK
WYMAN HILL ROAD
SOUTH RUMFORD
PROSPECT AVENUE
MATCH LINE (EXHIBIT G-1)
N: 618000
E: 2854000
N: 620200
E: 2855500
N: 615000
E: 2856500
75
78
80
85
90
95
100
105
110
115
120
130
65
70
60
MEXICO
RUMFORD
EXHIBIT G-1
EXHIBIT G-2
EXHIBIT G-3
EXHIBIT G-4
EXHIBIT G-5
KEY MAP
SCALE: 1"=1 MILE
STATE OF MAINE
STEPHEN W. EVERETT 2181
PROFESSIONAL LAND SURVEYOR
I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS
LEGEND:
HIGHWAY MONUMENT FOUND
PROJECT BOUNDARY
SHORELINE/STREAM
PRIMARY ROADS
SECONDARY ROADS
REFERENCE COORDINATE METADATA
PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET
SCALE: 1"=200'
200 100 0 200 FT
Non – Internet Public
EXHIBIT G-2 SHEET 1 OF 1
PROJECT BOUNDARY MAP
UPPER DAM, UPPER STATION AND RESERVOIR
RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC
DATE: DECEMBER 2006
SCALE: AS NOTED
APPROVED:
FERC NO. 2333-41
CAD FILENAME: P-2333-41, G-2, PROJECT BOUNDARY, 03-31-2008.DWG



CAD FILENAME: P-2333-42, G-3, PROJECT BOUNDARY, 03-31-2008.DWG

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE · STEPHEN W. EVERETT 2161 · PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

SCALE: 1"=400'
400 200 0 400 FT

Non – Internet Public

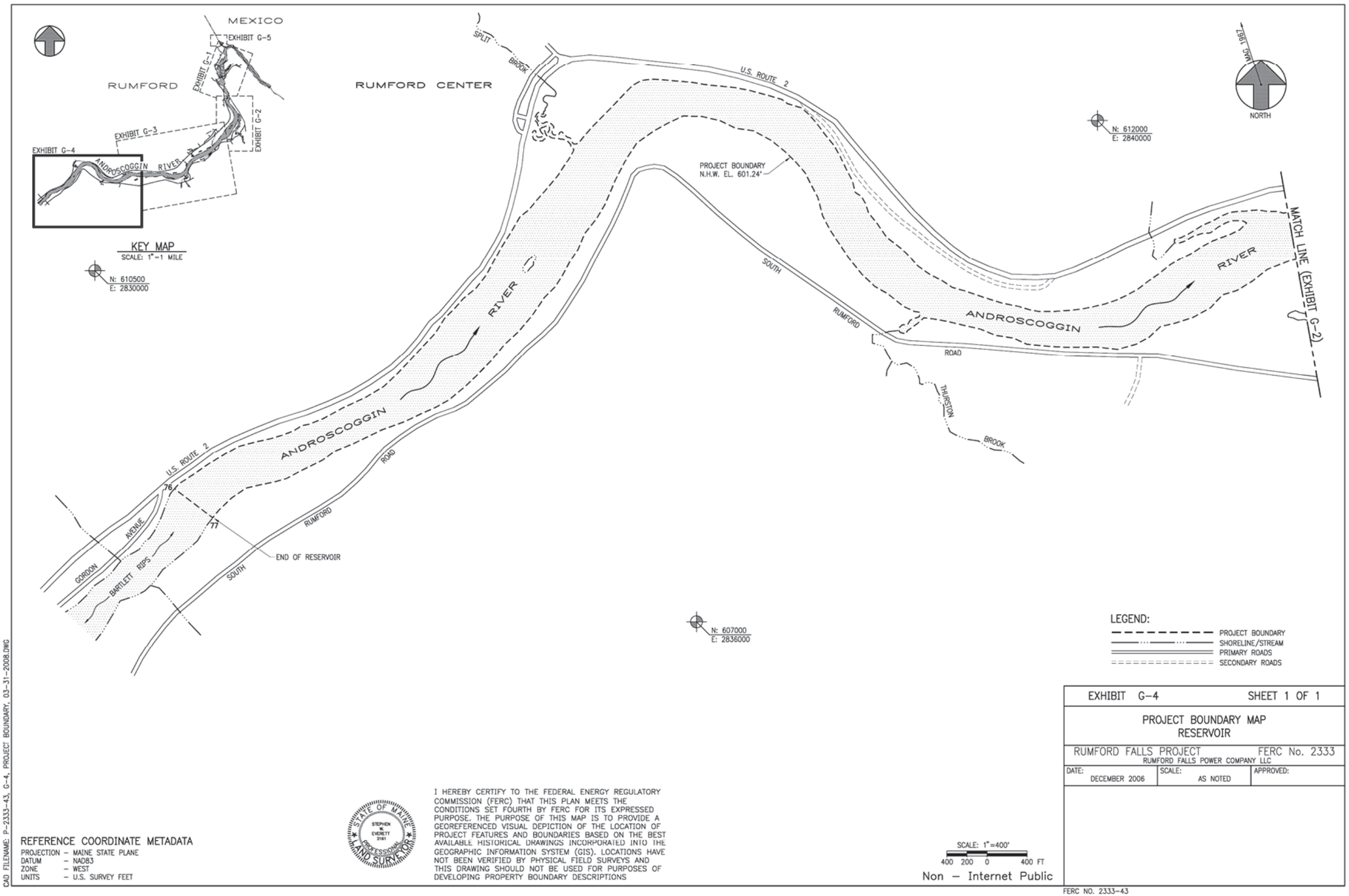
EXHIBIT G-3 SHEET 1 OF 1

PROJECT BOUNDARY MAP
RESERVOIR

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
DECEMBER 2006	AS NOTED	

FERC NO. 2333-42



CAD FILENAME: P-2333-43, G-4, PROJECT BOUNDARY, 03-31-2008.DWG

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE · STEPHEN K. EVERETT 2181 · PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

SCALE: 1"=400'
400 200 0 400 FT

Non – Internet Public

EXHIBIT G-4 SHEET 1 OF 1

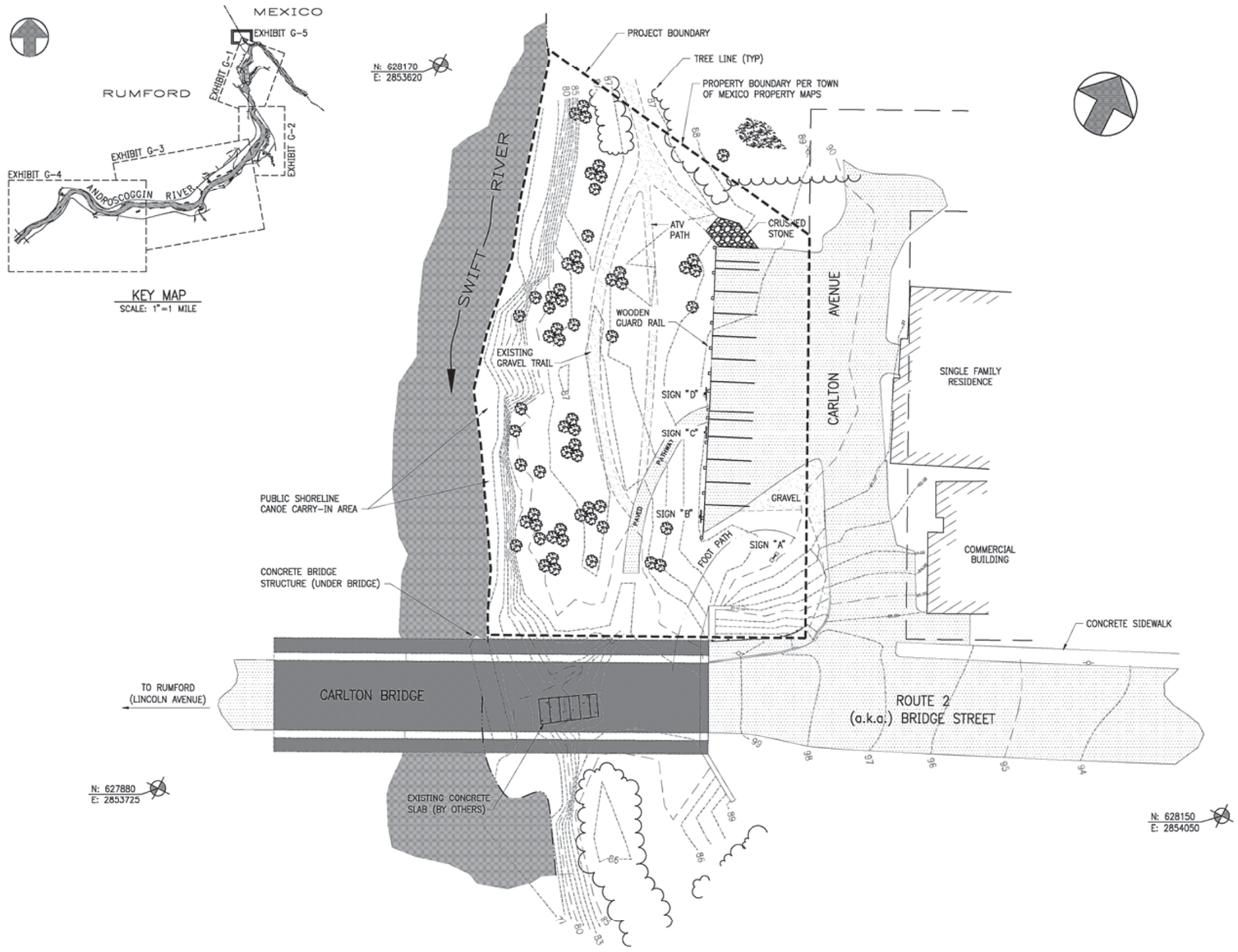
PROJECT BOUNDARY MAP
RESERVOIR

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
DECEMBER 2006	AS NOTED	

FERC NO. 2333-43

KEY MAP
SCALE: 1"=1 MILE



SIGN DESCRIPTION TABLE:

SIGN "A"

Rumford Falls Hydro, LLC
FERC Project No. 2333-ME

This project is licensed by the Federal Energy Regulatory Commission
For further information Contact:
Rumford falls Hydro, LLC
at 207-723-4341

Recreation facilities are open to all members of the public

SIGN "B"

CANOE ACCESS PARKING ONLY

SIGN "C"

PARKING ONLY

SIGN "D"

PUBLIC BOAT ACCESS

MEXICO SITE

LEGEND:

- HIGHWAY MONUMENT FOUND
- PROJECT BOUNDARY
- TRANSMISSION LINE
- TOWN/COUNTY LINE
- SHORELINE/STREAM
- PRIMARY ROADS
- SECONDARY ROADS
- FENCE
- RAIL ROAD

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN K. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

SCALE: 1"=20'
20 10 0 20 FT

Non – Internet Public

EXHIBIT G-5 SHEET 1 OF 1

PROJECT BOUNDARY MAP
CARLTON BRIDGE BOAT LAUNCH

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
JANUARY 2008	AS NOTED	

CAD FILENAME: P-2333-44, G-5, PROJECT BOUNDARY, 03-31-2008.DWG

FERC NO. 2333-44

From: Bentivoglio, Antonio <antonio_bentivoglio@fws.gov>
Sent: Friday, May 31, 2019 8:59 AM
To: Dorman, Randy
Subject: Re: [EXTERNAL] Rumford Falls Hydro Relicensing Questionnaire
Attachments: 20190530 Rumford-FWS Response to PAD Questionnaire.pdf

Randy,
here is my form. I will be the POC for this project for the FWS.

--
Antonio

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

Rumford Falls Hydro LLC, a subsidiary of Brookfield Renewable, is the licensee for the Rumford Falls Hydro Project, a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in Rumford, Maine. The Project is operated in run-of-river mode. The Project works consist of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the project is 44.5 megawatts (MW) and the project's maximum hydraulic capacity is 7,546 cubic feet per second (cfs).

Upper Station Development: The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The development has a total installed nameplate capacity of 29.30 MW, a maximum hydraulic capacity of 4,550 cfs, and an average annual generation of about 182,407 MWh per year.

Lower Station Development: The Lower Station Development's principal features consist of the Middle Dam, the Middle Canal headgate structure with a waste weir section, the Middle Canal, a gatehouse, two penstocks (each with a surge tank), a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 15.20 MW and a total maximum hydraulic capacity of 2,996 cfs, and an average annual generation of about 108,977 MWh per year.

Project Boundary maps showing the location of these two developments are being distributed along with this questionnaire.

Under the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") administers the relicensing of this project. The existing FERC license expires on September 30, 2024, and Rumford Falls Hydro LLC is beginning the relicensing process soon. Rumford Falls Hydro LLC will be using the Integrated Licensing Process (ILP), as described at 18 CFR §5.0. Accordingly, Rumford Falls Hydro LLC is preparing a Notice of Intent (NOI) to relicense the Rumford Falls Project and a Pre-Application Document (PAD) to be filed by September 30, 2019. The PAD will provide FERC and other entities with existing, relevant, and reasonably available information pertaining to the Rumford Falls Project as well as resources within the vicinity of the project.

This PAD Questionnaire is being used to help identify sources of existing, relevant, and reasonably available information pertinent to the Rumford Falls Project that are not currently in the possession of Rumford Falls Hydro LLC. This information will help to identify any data collection needs or potential resource issues early in the relicensing process. Our intent is to include results of this information request questionnaire in the PAD.

We respectfully request that you please return this PAD questionnaire to Randy Dorman via email at randy.dorman@brookfieldrenewable.com. This will allow for any follow-up contacts that may be needed by Rumford Falls Hydro LLC.

If we do not receive a response within 30 days, this will indicate that:

- you are not aware of any existing, relevant, and reasonably available information that describes the existing Project environment; and
- unless you are the representative of an Indian tribe or federal or state agency, you (and your organization) are not interested in receiving any further correspondence regarding this proceeding and you will be removed from the distribution list.

We greatly appreciate your response and your assistance in this effort to identify information resources and interested parties in this proceeding.

1. Please provide the following information about the person completing this questionnaire.

Name & Title	Antonio Bentivoglio
Organization	USFWS
Address	4 Fundy Road #R, Falmouth, ME. 04105
Phone	207 781 8364 x18
Email Address	Antonio_Bentivoglio@fws.gov

2. Do you or your organization plan to participate in the relicensing proceeding for the Rumford Falls Hydro Project?

☑ Yes *(if yes, please complete information below)* ☐ No *(if no, please go to No. 3)*

Please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process for these projects. ***(Additional contacts may be provided on a separate page.)***

Name & Title	Same as above
Organization	
Address	
Phone	
Email Address	

3. If you and the entity you represent do not want to receive any further correspondence associated with this proceeding, please indicate so here:

____Please remove me and the entity I represent from the mailing list.

4. Do you or your organization know of any existing, relevant, and reasonably available information that describes the existing projects' existing or historical environment (i.e., Project area, adjacent Project vicinity, or areas upstream or downstream of the Rumford Falls Hydro Project)?

☐ Yes *(if yes, please complete Nos. 4a through 4d)* ☑ No *(if no, please go to No. 5)*

a. If yes, please circle the specific resource area(s) that the information relates to:

- Geology and soils
- Water resources
- Fish and aquatic resources
- Wildlife and botanical resources
- Wetlands, riparian, and littoral habitat
- Rare, threatened, and endangered species
- Recreation and land use
- Aesthetic resources
- Cultural resources
- Socioeconomic resources
- Tribal resources
- Other resource information

b. Please briefly describe the information referenced above and/or list available documents *(additional information may be provided on page 5 of this questionnaire).*

c. Please provide referenced document, source website link, or description of where Rumford Falls Hydro LLC can obtain this information, if available.

d. Based on the specific resources listed in 4a, are you aware of any specific issues related to the identified resource area(s)?

☐ Yes *(please list specific issues below)* ☑ No *(if no, please go to No. 5)*

Resource Area	Description of Issue

5. If you have additional comments and/or questions regarding the Rumford Falls Hydro Project, or the relicensing process, please provide them below.

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Project Boundary maps showing the location of these two developments are being distributed along with this questionnaire.

Under the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") administers the relicensing of this project. The existing FERC license expires on September 30, 2024, and Rumford Falls Hydro LLC is beginning the relicensing process soon. Rumford Falls Hydro LLC will be using the Integrated Licensing Process (ILP), as described at 18 CFR §5.0. Accordingly, Rumford Falls Hydro LLC is preparing a Notice of Intent (NOI) to relicense the Rumford Falls Project and a Pre-Application Document (PAD) to be filed by September 30, 2019. The PAD will provide FERC and other entities with existing, relevant, and reasonably available information pertaining to the Rumford Falls Project as well as resources within the vicinity of the project.

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We greatly appreciate your response and your assistance in this effort to identify information resources and interested parties in this proceeding.

1. Please provide the following information about the person completing this questionnaire.

Name & Title	James Pellerin, Regional Fisheries Bio.
Organization	ME Dept. Inland Fisheries & Wildlife
Address	15 Game Farm Rd. Gray, Maine 04039
Phone	207-657-5765
Email Address	james.pellerin@maine.gov

2. Do you or your organization plan to participate in the relicensing proceeding for the Rumford Falls Hydro Project?

☑ Yes *(if yes, please complete information below)* ☐ No *(if no, please go to No. 3)*

Please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process for these projects. ***(Additional contacts may be provided on a separate page.)***

Name & Title	Above & John Perry
Organization	ME Dept. Inland Fisheries & Wildlife
Address	284 State St. SHS 41 Augusta, ME 04333
Phone	207-287-5254
Email Address	john.perry@maine.gov

3. If you and the entity you represent do not want to receive any further correspondence associated with this proceeding, please indicate so here:

____Please remove me and the entity I represent from the mailing list.

4. Do you or your organization know of any existing, relevant, and reasonably available information that describes the existing projects' existing or historical environment (i.e., Project area, adjacent Project vicinity, or areas upstream or downstream of the Rumford Falls Hydro Project)?

☑ Yes *(if yes, please complete Nos. 4a through 4d)* ☐ No *(if no, please go to No. 5)*

a. If yes, please circle the specific resource area(s) that the information relates to:

- Geology and soils
- Water resources
- Fish and aquatic resources
- Wildlife and botanical resources
- Wetlands, riparian, and littoral habitat
- Rare, threatened, and endangered species
- Recreation and land use
- Aesthetic resources
- Cultural resources
- Socioeconomic resources
- Tribal resources
- Other resource information

b. Please briefly describe the information referenced above and/or list available documents *(additional information may be provided on page 5 of this questionnaire).*

MDIW has some limited sampling data from the area, as well as anecdotal informat

c. Please provide referenced document, source website link, or description of where Rumford Falls Hydro LLC can obtain this information, if available.

Contact MDIFW.

d. Based on the specific resources listed in 4a, are you aware of any specific issues related to the identified resource area(s)?

☑ Yes *(please list specific issues below)* ☐ No *(if no, please go to No. 5)*

Resource Area	Description of Issue
	MDIFW will be interested in exploring recreational access opportunies to the head ponds and tailrace areas for angling.
	MDIFW will be interested in reviewing minimum flow provisions within the tailrace, stability of impoundment water levels, and discharge patterns.
	Creel survey and angler use of area, as well as salmonid tracking may be requested as a study.

5. If you have additional comments and/or questions regarding the Rumford Falls Hydro Project, or the relicensing process, please provide them below.

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We greatly appreciate your response and your assistance in this effort to identify information resources and interested parties in this proceeding.

1. Please provide the following information about the person completing this questionnaire.

Name & Title	Gail Wippelhauser, MR Scientist III
Organization	Department of Marine Resources
Address	#173 State House Station Augusta, ME 04333
Phone	207-624-6349
Email Address	gail.wippelhauser@maine.gov

2. Do you or your organization plan to participate in the relicensing proceeding for the Rumford Falls Hydro Project?

☐ Yes *(if yes, please complete information below)* ☑ No *(if no, please go to No. 3)*

Please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process for these projects. ***(Additional contacts may be provided on a separate page.)***

Name & Title	
Organization	
Address	
Phone	
Email Address	

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X Please remove me and the entity I represent from the mailing list.

4. Do you or your organization know of any existing, relevant, and reasonably available information that describes the existing projects' existing or historical environment (i.e., Project area, adjacent Project vicinity, or areas upstream or downstream of the Rumford Falls Hydro Project)?

☑ Yes *(if yes, please complete Nos. 4a through 4d)* ☐ No *(if no, please go to No. 5)*

a. If yes, please circle the specific resource area(s) that the information relates to:

- Geology and soils
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- Aesthetic resources
- Cultural resources
- Socioeconomic resources
- Tribal resources
- Other resource information

b. Please briefly describe the information referenced above and/or list available documents *(additional information may be provided on page 5 of this questionnaire).*

Lewiston Falls was the upstream limit of American shad and alewife and Rumford F

c. Please provide referenced document, source website link, or description of where Rumford Falls Hydro LLC can obtain this information, if available.

d. Based on the specific resources listed in 4a, are you aware of any specific issues related to the identified resource area(s)?

☐ Yes *(please list specific issues below)* ☑ No *(if no, please go to No. 5)*

Resource Area	Description of Issue

5. If you have additional comments and/or questions regarding the Rumford Falls Hydro Project, or the relicensing process, please provide them below.

From: Matt Buhyoff - NOAA Federal <matt.buhyoff@noaa.gov>
Sent: Wednesday, June 5, 2019 1:53 PM
To: Dorman, Randy
Cc: Murphy,Kyle; Gregg, Shawn
Subject: Re: Rumford Falls Hydro Relicensing Questionnaire

Good Afternoon,

NOAA's Protected Resources Division will not be involved in this project. You can remove my name from the mailing list.

If you have any questions, please let me know.

--

_____
Matt Buhyoff
Atlantic Salmon Recovery Coordinator | Merrymeeting Bay
NOAA - Fisheries
17 Godfrey Dr., Orono, ME
207.866.4238

From: Dorman, Randy <Randy.Dorman@brookfieldrenewable.com>
Sent: Wednesday, June 19, 2019 9:41 AM
To: Murphy,Kyle; Gregg, Shawn; Browne, Peter
Cc: sean.mcdermott@noaa.gov; Richard.C.Kristoff@usace.army.mil; jay.l.clement@usace.army.mil; Harold.Peterson@bia.gov; mprout@fs.fed.us; kevin_mendik@nps.gov; nstasuli@usgs.gov; michael.scarzello@eaglecreekre.com; kevin@americanwhitewater.org; mzakutansky@outdoors.org; smahoney@clf.org; abeahm@maineaudubon.org; tom.christopher@comcast.net; Kathy.Howatt@maine.gov; kathleen.leyden@maine.gov; townmanager@rumfordme.org; info@oxfordcounty.org; bgraber@americanrivers.org
Subject: RE: Rumford Falls Hydro Relicensing Questionnaire

All,

Just a reminder that we are hoping to receive all relicensing questionnaires by July 1, 2019. Thank you so much for your assistance.

Best,

Randy

Randy Dorman
Licensing Specialist

Brookfield Renewable
150 Main Street, Lewiston, Maine 04240
T 207-755-5605 **C** 207-402-0481
Randy.Dorman@BrookfieldRenewable.com
www.brookfieldrenewable.com

Brookfield

RUMFORD FALLS HYDRO PROJECT
PRE-APPLICATION DOCUMENT INFORMATION QUESTIONNAIRE

Rumford Falls Hydro LLC, a subsidiary of Brookfield Renewable, is the licensee for the Rumford Falls Hydro Project, a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in Rumford, Maine. The Project is operated in run-of-river mode. The Project works consist of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the project is 44.5 megawatts (MW) and the project's maximum hydraulic capacity is 7,546 cubic feet per second (cfs).

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We respectfully request that you please return this PAD questionnaire to Randy Dorman via email at randy.dorman@brookfieldrenewable.com. This will allow for any follow-up contacts that may be needed by Rumford Falls Hydro LLC.

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We greatly appreciate your response and your assistance in this effort to identify information resources and interested parties in this proceeding.

1. Please provide the following information about the person completing this questionnaire.

Name & Title	Scott Cole, Town Manager
Organization	Town of Rumford
Address	145 Congress Street Rumford, ME 04276
Phone	(207) 364-4576
Email Address	townmanager@rumfordme.org

2. Do you or your organization plan to participate in the relicensing proceeding for the Rumford Falls Hydro Project?

☑ Yes *(if yes, please complete information below)* ☐ No *(if no, please go to No. 3)*

Please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process for these projects. ***(Additional contacts may be provided on a separate page.)***

Name & Title	Scott Cole, Town Manager
Organization	Town of Rumford
Address	145 Congress Street Rumford, ME 04276
Phone	(207) 364-4576
Email Address	townmanager@rumfordme.org

3. If you and the entity you represent do not want to receive any further correspondence associated with this proceeding, please indicate so here:

____Please remove me and the entity I represent from the mailing list.

4. Do you or your organization know of any existing, relevant, and reasonably available information that describes the existing projects' existing or historical environment (i.e., Project area, adjacent Project vicinity, or areas upstream or downstream of the Rumford Falls Hydro Project)?

☑ Yes *(if yes, please complete Nos. 4a through 4d)* ☐ No *(if no, please go to No. 5)*

a. If yes, please circle the specific resource area(s) that the information relates to:

- Geology and soils
- Water resources
- Fish and aquatic resources
- Wildlife and botanical resources
- Wetlands, riparian, and littoral habitat
- Rare, threatened, and endangered species
- (•) Recreation and land use
- Aesthetic resources
- Cultural resources
- Socioeconomic resources
- Tribal resources
- Other resource information

b. Please briefly describe the information referenced above and/or list available documents *(additional information may be provided on page 5 of this questionnaire).*

Upstream and downstream recreation and hiking sites (one currently closed)

c. Please provide referenced document, source website link, or description of where Rumford Falls Hydro LLC can obtain this information, if available.

Exhibit G-1, G-2, G-3, G-4 & USGS "Rumford Quadrangle", 7.5 Minute Map - 2014

d. Based on the specific resources listed in 4a, are you aware of any specific issues related to the identified resource area(s)?

☑ Yes *(please list specific issues below)* ☐ No *(if no, please go to No. 5)*

Resource Area	Description of Issue
Falls Hill Trail	Currently closed due to rock falls, previously open to public
Wheeler Island	Ongoing recreational access sought for overnight camping, fishing and general recreational use
Androscoggin River frontage	Upstream and downstream access sought for multi use trails
Rumford Boat Launch	Existing access with planned improvement project

5. If you have additional comments and/or questions regarding the Rumford Falls Hydro Project, or the relicensing process, please provide them below.

None

July 23, 2019

Mr. John Perry
Maine Department of Inland Fisheries and Wildlife
284 State St. SHS 41
Augusta, ME 04333

VIA U.S. MAIL

Subject: **Request for Information on Threatened, Endangered, and Special Concern Species and Habitats – Rumford Falls Hydroelectric Project (FERC No. 2333)**

Dear Mr. Perry:

Rumford Falls Hydro, LLC (RFH), a subsidiary of Brookfield Renewable, is the licensee of the Rumford Falls Hydroelectric Project (Project), a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in the Town of Rumford, Maine. HDR is assisting RFH to obtain a new Federal Energy Regulatory Commission (FERC) license for the continued operation of the Project. The Project's current license expires on September 30, 2024.

We would like to request information regarding state listed rare, threatened, and endangered species and special concern species and/or significant habitats that may occur within or near the Project site. A map showing the Project area is provided with this letter.

For project documentation purposes, we request that a written response to this letter be provided within 30 days via the U.S. Postal Service or email. Please feel free to contact me by phone (207-775-4495) or email (Dawn.Cousens@hdrinc.com) if there are any questions regarding the Project or this request. Thank you in advance for your response.

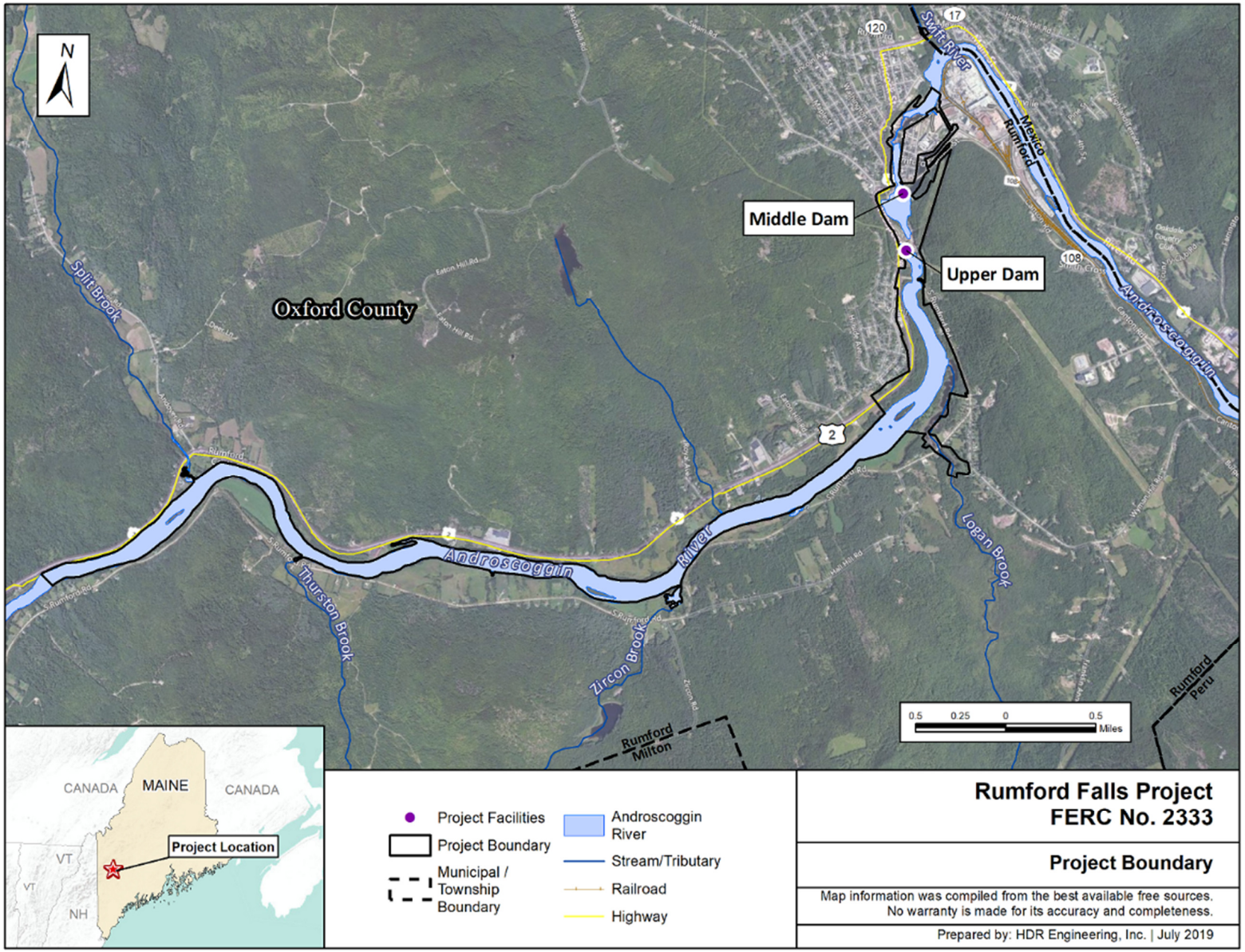
Sincerely,
HDR

Dawn Cousens
Aquatic Scientist

Enclosure
cc: R. Dormen (Brookfield Renewable)
P. Browne (HDR)

hdrinc.com

970 Baxter Boulevard, Suite 301, Portland, ME 04103-5346
(207) 775-4495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Stream/Tributary
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FERC No. 2333
Project Boundary
Map information was compiled from the best available free sources.
No warranty is made for its accuracy and completeness.
Prepared by: HDR Engineering, Inc. | July 2019
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July 23, 2019

Ms. Lisa St. Hilaire
Maine Department of Conservation
Natural Areas Program
93 State House Station
Augusta, ME 04333

VIA U.S. MAIL

Subject: **Request for Information on Threatened, Endangered, and Special Concern Species and Critical Habitats – Rumford Falls Hydroelectric Project (FERC No. 2333)**

Dear Ms. St. Hilaire:

Rumford Falls Hydro, LLC (RFH), a subsidiary of Brookfield Renewable, is the licensee of the Rumford Falls Hydroelectric Project (FERC No. 2333) (Project), a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in the Town of Rumford, Maine. HDR is assisting RFH to obtain a new Federal Energy Regulatory Commission (FERC) license for the continued operation of the Project. The Project's current license expires on September 30, 2024.

We would like to request information from the Maine Department of Conservation's Natural Areas Program regarding state listed threatened, endangered, and special concern species, critical habitats, and other important natural communities that may occur within or near the Project site. A map showing the Project area is provided with this letter.

For project documentation purposes, we request that a written response to this letter be provided within 30 days via the U.S. Postal Service or email. Please feel free to contact me by phone (207-775-4495) or email (Dawn.Cousens@hdrinc.com) if there are any questions regarding the Project or this request. Thank you in advance for your response.

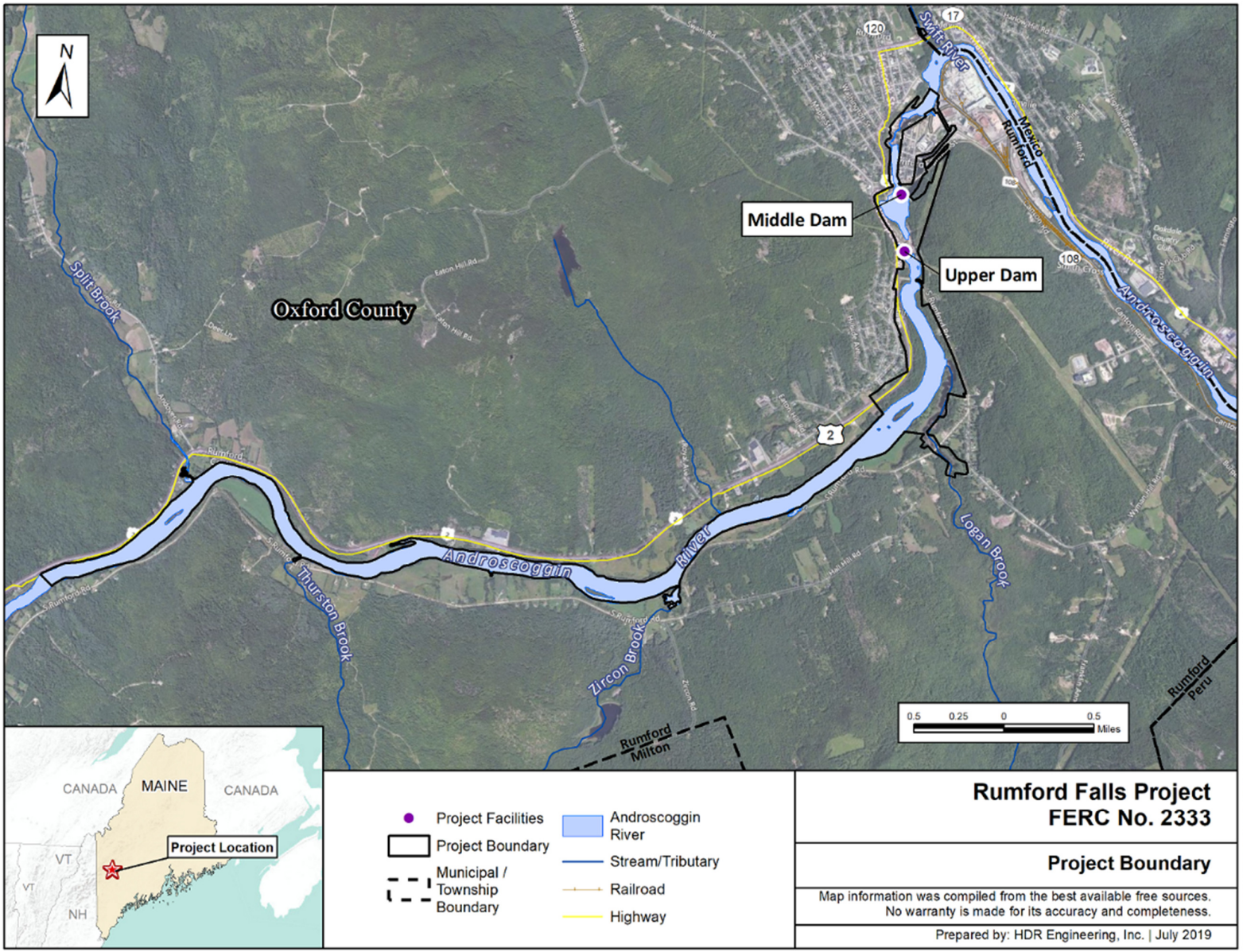
Sincerely,
HDR

Dawn Cousens
Aquatic Scientist

Enclosure
cc: R. Dormen (Brookfield Renewable)
P. Browne (HDR)

hdrinc.com

970 Baxter Boulevard, Suite 301, Portland, ME 04103-5346
(207) 775-4495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July 23, 2019

Mr. Lou Chiarella
NOAA/National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930

VIA U.S. MAIL

Subject: **Request for Information on Species Listed Under the Endangered Species Act and Essential Fish Habitat – Rumford Falls Hydroelectric Project (FERC No. 2333)**

Dear Mr. Chiarella:

Rumford Falls Hydro, LLC (RFH), a subsidiary of Brookfield Renewable, is the licensee of the Rumford Falls Hydroelectric Project (Project), a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in the Town of Rumford, Maine. HDR is assisting RFH to obtain a new Federal Energy Regulatory Commission (FERC) license for the continued operation of the Project. The Project's current license expires on September 30, 2024.

We would like to request information from the National Marine Fisheries Service regarding federally listed rare, threatened, and endangered species and essential fish habitat that may occur within or near the Project site. A map showing the Project area is provided with this letter.

For project documentation purposes, we request that a written response to this letter be provided within 30 days via the U.S. Postal Service or email. Please feel free to contact me by phone (207-775-4495) or email (Dawn.Cousens@hdrinc.com) if there are any questions regarding the Project or this request. Thank you in advance for your response.

Sincerely,
HDR

Dawn Cousens
Aquatic Scientist

Enclosure
cc: R. Dormen (Brookfield Renewable)
P. Browne (HDR)

hdrinc.com

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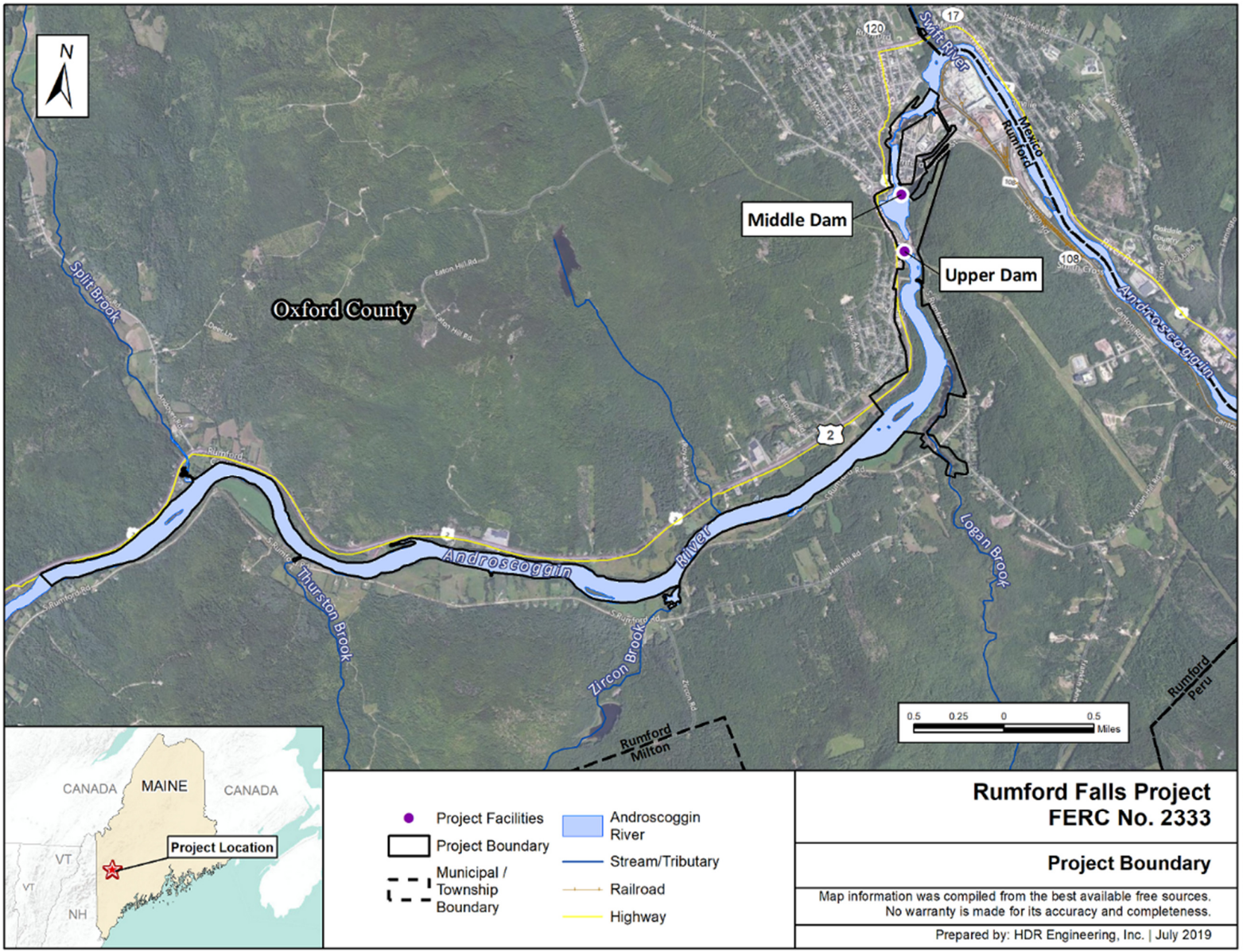
(207) 775-4495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July 23, 2019

Antonio Bentivoglio
U.S. Fish and Wildlife Service
Ecological Services
Maine Field Office
306 Hatchery Way
East Orland, ME 04431

VIA U.S. MAIL

Subject: **Request for Information on Species Listed Under the Endangered Species Act and Critical Habitats – Rumford Falls Hydroelectric Project (FERC No. 2333)**

Dear Mr. Bentivoglio:

Rumford Falls Hydro, LLC (RFH), a subsidiary of Brookfield Renewable, is the licensee of the Rumford Falls Hydroelectric Project (Project), a multi-development hydroelectric facility located on the Androscoggin River in Oxford County in the Town of Rumford, Maine. HDR is assisting RFH to obtain a new Federal Energy Regulatory Commission (FERC) license for the continued operation of the Project. The Project's current license expires on September 30, 2024.

We would like to request information from the U.S. Fish and Wildlife Service regarding federally listed rare, threatened, and endangered species and critical habitats that may occur within or near the Project site. A map showing the Project area is provided with this letter.

For project documentation purposes, we request that a written response to this letter be provided within 30 days via the U.S. Postal Service or email. Please feel free to contact me by phone (207-775-4495) or email (Dawn.Cousens@hdrinc.com) if there are any questions regarding the Project or this request. Thank you in advance for your response.

Sincerely,
HDR

Dawn Cousens
Aquatic Scientist

Enclosure
cc: R. Dormen (Brookfield Renewable)
P. Browne (HDR)

hdrinc.com

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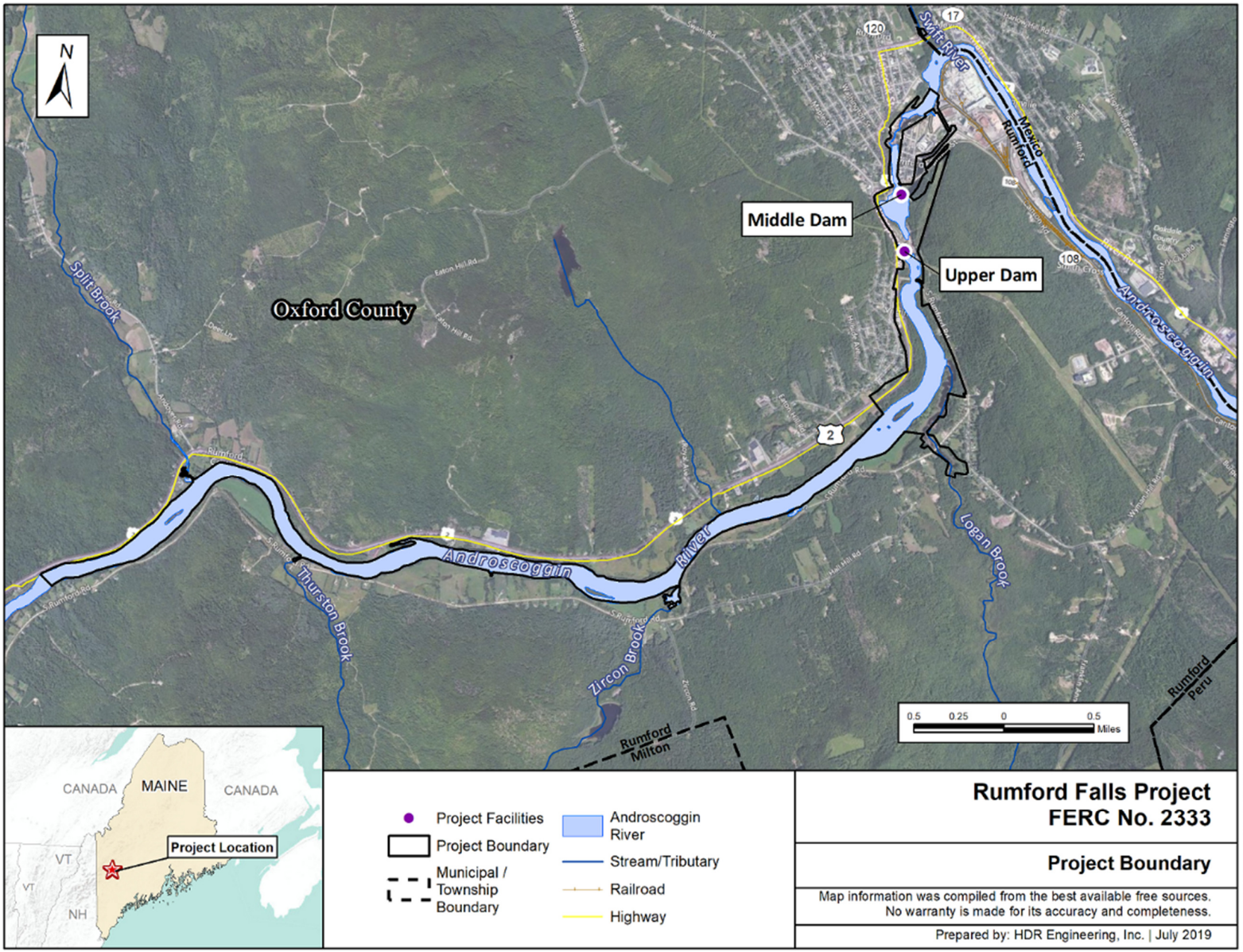
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Fish and Wildlife Service Complex
Ecological Services
Maine Field Office
306 Hatchery Road
East Orland, Maine 04431
207/469-7300 Fax: 207/902-1588

July 25, 2019

Dawn Cousens
HDR
970 Baxter Boulevard, Suite 301
Portland, Maine 04103-5346

REF: Request for Information Regarding the Relicensing of the Rumford Falls Hydroelectric Project (FERC No. 2333)

Dear Ms. Cousens:

We have received your request for information on any species listed under the Endangered Species Act (ESA) in relation to the initiation of relicensing of the Rumford Falls Project (Project). For information regarding the occurrence of federally listed threatened and endangered species within the vicinity of the above referenced project/property. **In an effort to streamline project reviews in a time of increasing workloads, we are directing all species list requests to our Web site:** ***http://www.fws.gov/mainefieldoffice/Project%20reviews.html.*** Please click or copy and paste this link into your browser and follow the instructions at **Species Lists and Project Reviews**. Step-by-step instructions are provided. For communication tower projects follow the self- certification procedure by clicking the link on the Intro page. Using this Web-based process will allow you to print an ***Official species list response*** from the Ecological Services Maine Field Office. Once you have received your official species list response *please send your entire package to the Federal Agency you are working with, (e.g. U.S. Army Corp of Engineers, Federal Energy Regulation Commission, etc.).* If you have questions, or you are not working with a Federal Agency, then by all means feel free to send us the entire review package with your request for a Federal section 7 review.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to both Federal and non-federal activities. Additionally, endangered and threatened species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative effects is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorization from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

1

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding our Web-based **Species List and Project Reviews** process, please contact Shay White at: *Shay_White@fws.gov* or by telephone at 207/902-1568. If you have questions about Canada lynx, please contact Mark McCollough at: *Mark_McCollough@fws.gov* or by telephone at 207/902-1570. For questions about Atlantic salmon, please contact Wende Mahaney at: *Wende_Mahaney@fws.gov* or by telephone at 207/902-1569. **For questions about your request in relation to the initiation of relicensing of the Rumford Falls Project please contact Antonio Bentivoglio at: *Antonio_Bentivoglio@fws.gov* or by telephone at 207/781-8364 Extension 18.**

Thank you.

Drew Becker
Acting Project Leader
Ecological Services Maine Field Office
Maine Fish and Wildlife Service Complex

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to ***take*** (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

From: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Sent: Thursday, August 8, 2019 12:52 PM
To: Cousens, Dawn
Cc: Browne, Peter
Subject: RE: Rumford Falls Project - Request for Information
Attachments: hdr_rumford_ferc2333.pdf

Hi Dawn,

MNAP comments attached. Please note our current department name and address. We received the hard copy from you a week or more after the email… it went to our old State House Station number. Also, you can just send the email request, no need to also send hard copy.

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: Cousens, Dawn <Dawn.Cousens@hdrinc.com>
Sent: Tuesday, July 23, 2019 10:15 AM
To: St.Hilaire, Lisa <Lisa.St.Hilaire@maine.gov>
Cc: Browne, Peter <Peter.Browne@hdrinc.com>
Subject: Rumford Falls Project - Request for Information

Good Morning,

On behalf of Rumford Falls Hydro LLC, please find the attached letter requesting information regarding state listed threatened, endangered, and special concern species, critical habitats, and other important natural communities within or near the Rumford Falls Hydroelectric Project (FERC No. 2333). A hard copy of the attached letter is also being sent in the mail. As specified in the attached, we request that a written response to this letter be provided within 30 days via mail or email.

Please feel free to contact me by phone or email if there are any questions.

Thanks,

Dawn Cousens
Aquatic Scientist

HDR
970 Baxter Boulevard
Portland, ME 04103
O 207.775.4495 **D** 207.239.3791
dawn.cousens@hdrinc.com

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

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

July 25, 2019

Dawn Cousens
HDR
970 Baxter Blvd, Suite 301
Portland, ME 04103

Via email: dawn.cousens@hdrinc.com

Re: Rare and exemplary botanical features in proximity to: FERC No. 2333, Rumford Falls Hydroelectric Project, Rumford, Maine

Dear Ms. Cousens:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received July 23, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Rumford, 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. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

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.

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

DEPARTMENT OF Agriculture Conservation & Forestry

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

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.

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

Rare and Exemplary Botanical Features within 4 miles of Project: FERC No. 2333, Rumford Falls Hydroelectric Project, Rumford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Auricled Twayblade						
	T	S2	G3G4	1887-06	19	Non-tidal rivershore (non-forested, seasonally wet),Forested wetland
Fern-leaved False Foxglove						
	SC	S3	G5	1889-07	8	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Few-flowered Spikerush						
	SC	S2	G5TNRQ	1933-08	2	Non-tidal rivershore (non-forested, seasonally wet)
Fragrant Wood Fern						
	SC	S3	G5	1885-07	25	Rocky summits and outcrops (non-forested, upland),Alpine or subalpine (non-forested, upland)
Sandbar Willow						
	E	S1	G5	2003-09-17	3	Non-tidal rivershore (non-forested, seasonally wet)
Slippery Elm						
	PE	SH	G5	1935-06	3	Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

From: Cousens, Dawn
Sent: Friday, August 2, 2019 12:48 PM
To: 'todd.burrowes@maine.gov'
Cc: Browne, Peter
Subject: Rumford Falls Project
Attachments: Rumford Falls Project Map.pdf

Good Afternoon,

As we discussed, we are providing relicensing support for the Rumford Falls Hydroelectric Project (FERC No. 2333) on behalf of Rumford Falls Hydro LLC. The Project is located on the Androscoggin River in Oxford County in Rumford, Maine (map attached). It is our understanding that the Project is not located in the coastal zone and that a CZMA review is not necessary. Could you please confirm this is correct?

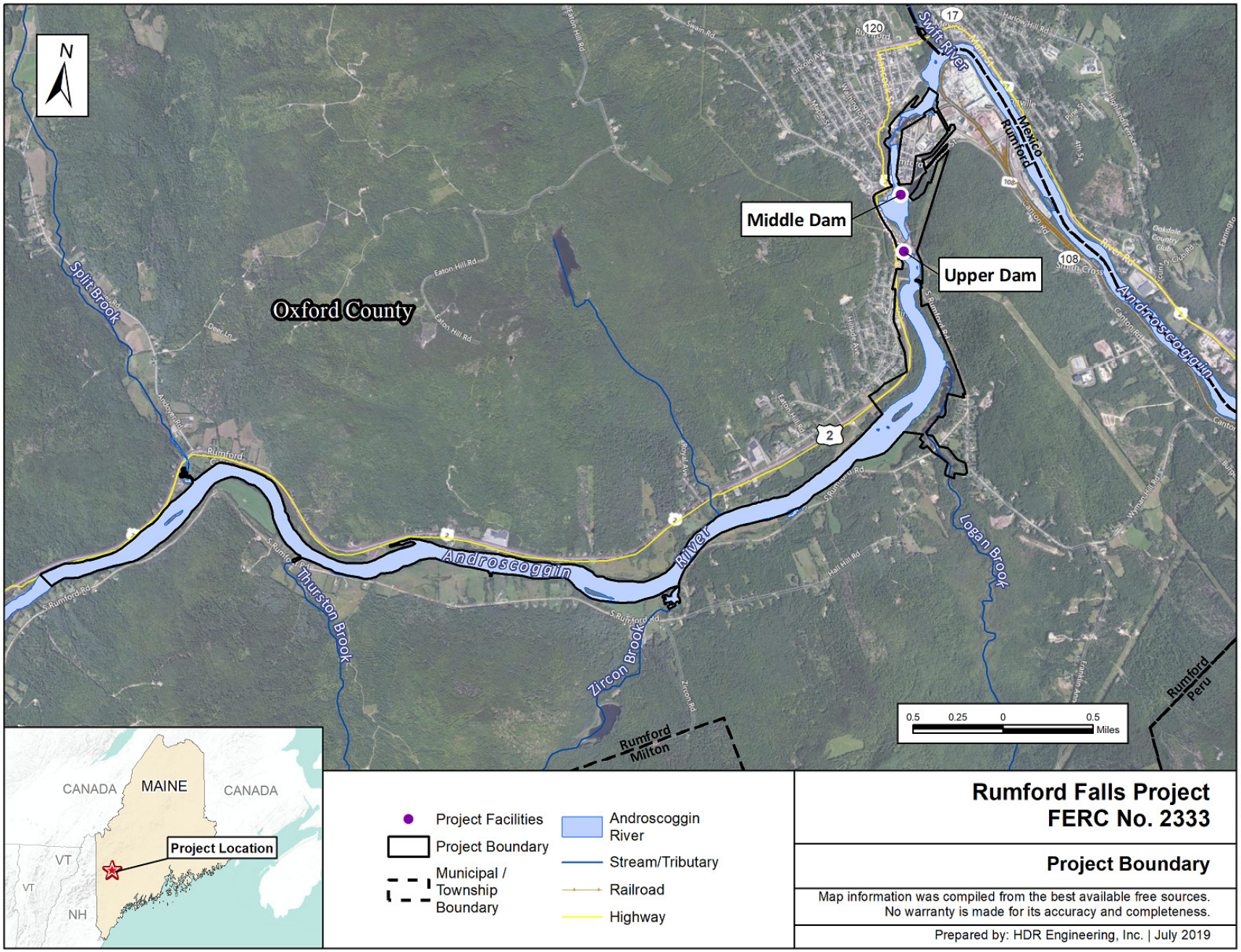
Please let me know if you need additional information.

Thanks,

Dawn Cousens
Aquatic Scientist

HDR
970 Baxter Boulevard
Portland, ME 04103
O 207.775.4495 **D** 207.239.3791
dawn.cousens@hdrinc.com

hdrinc.com/follow-us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Document Path: C:\Users\kaustin\Desktop\HDR\10175585_Rumford_Falls_Relicensing\Map_Docs\Draft\Map_RF_Boundary_8.5x11.mxd

From: Burrowes, Todd [mailto:Todd.Burrowes@maine.gov]
Sent: Friday, August 16, 2019 10:55 AM
To: Cousens, Dawn <Dawn.Cousens@hdrinc.com>
Cc: Browne, Peter <Peter.Browne@hdrinc.com>; Howatt, Kathy <Kathy.Howatt@maine.gov>
Subject: RE: Rumford Falls Project

Ms. Cousens – I'm writing to confirm that CZMA consistency review is not required for this project, which is located well-outside Maine's CZMA-designated coastal zone, and which is subject to state review pursuant to Section 401 of the Clean Water Act. Please let me know if you have questions or need additional information.
- Todd

From: Cousens, Dawn <Dawn.Cousens@hdrinc.com>
Sent: Friday, August 02, 2019 12:48 PM
To: Burrowes, Todd <Todd.Burrowes@maine.gov>
Cc: Browne, Peter <Peter.Browne@hdrinc.com>
Subject: Rumford Falls Project

Good Afternoon,

As we discussed, we are providing relicensing support for the Rumford Falls Hydroelectric Project (FERC No. 2333) on behalf of Rumford Falls Hydro LLC. The Project is located on the Androscoggin River in Oxford County in Rumford, Maine (map attached). It is our understanding that the Project is not located in the coastal zone and that a CZMA review is not necessary. Could you please confirm this is correct?

Please let me know if you need additional information.

Thanks,

Dawn Cousens
Aquatic Scientist

HDR
970 Baxter Boulevard
Portland, ME 04103
O 207.775.4495 **D** 207.239.3791
dawn.cousens@hdrinc.com

From: Settele, Rebecca [mailto:Rebecca.Settele@maine.gov]
Sent: Friday, August 16, 2019 9:57 AM
To: Cousens, Dawn <Dawn.Cousens@hdrinc.com>; Browne, Peter <Peter.Browne@hdrinc.com>
Cc: Perry, John <John.Perry@maine.gov>
Subject: RE: Rumford Falls Project - Request for Information

Hi Dawn,

The following state-listed Endangered, Threatened, and Special Concern species have been documented in the general vicinity of the Rumford Falls Hydro Project Area. Note that this list should be considered preliminary and not all-inclusive at this time:

Creeper (Special Concern species of freshwater mussel)

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)

Finally, please note that this list does not include any listed species of migratory birds that are likely found in the area during spring and fall migrations.

It is not known what effects, if any, the operations of the project may have on any of the species listed above. Note that any inland fisheries concerns, recreational access needs, or the need for studies, if any, will addressed during the Scoping and Study Request phases of the process.

We look forward to working with Rumford Falls Hydro, LLC throughout the relicensing of the Rumford Falls Hydro Project. Please let us know if you need additional information.

Becca Settele
Wildlife Biologist
Maine Dept of Inland Fisheries & Wildlife
Wildlife Division
650 State St
Bangor ME 04401
(207)941-4438
mefishwildlife.com | facebook | twitter

From: Cousens, Dawn <Dawn.Cousens@hdrinc.com>
Sent: Tuesday, July 23, 2019 10:12 AM
To: Perry, John <John.Perry@maine.gov>
Cc: Browne, Peter <Peter.Browne@hdrinc.com>
Subject: Rumford Falls Project - Request for Information

Good Morning,

On behalf of Rumford Falls Hydro LLC, please find the attached letter requesting information regarding state listed rare, threatened, and endangered species and special concern species and/or significant habitats that may occur within or near the Rumford Falls Hydroelectric Project (FERC No. 2333). A hard copy of the attached letter is also being sent in the mail. As specified in the attached, we request that a written response to this letter be provided within 30 days via mail or email.

Please feel free to contact me by phone or email if there are any questions.

Thanks,

Dawn Cousens
Aquatic Scientist

HDR
970 Baxter Boulevard
Portland, ME 04103
O 207.775.4495 **D** 207.239.3791
dawn.cousens@hdrinc.com

hdrinc.com/follow-us

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

Ms. Dawn Cousens
HDR Inc.
970 Baxter Blvd., Suite 301
Portland, ME 04103-5346

SEP 19 2019

SEP 23 2019

RECEIVED

RE: Request for Information on Species Listed Under the Endangered Species Act and Essential Fish Habitat – Rumford Falls Hydroelectric Project (FERC No. 2333)

Dear Ms. Cousens:

On July 23, 2019, you submitted a request to us regarding federally listed rare, threatened, and endangered species and essential fish habitat that may occur within or near the site of the Rumford Falls Hydroelectric Project (FERC No. 2333), located on the Androscoggin River in Oxford County, Maine.

Based upon the information you provided, we note that the Middle and Upper Dams of the Rumford Falls Hydroelectric Project are within the listed area of the federally endangered distinct population segment (DPS) of Atlantic salmon (Salmo *salar*) (74 FR 29344, June 19, 2009). The project area upstream of the Upper Dam is considered outside the DPS. The project does not occupy any listed critical habitat (74 FR 39003; August 10, 2009), however, the Androscoggin River downstream of the Upper Dam is designated essential fish habitat (EFH) for Atlantic salmon[1].

Please contact Matt Buhyoff (matt.buhyoff@noaa.gov or 207-866-4238) in our Protected Resources Division if you have any further questions.

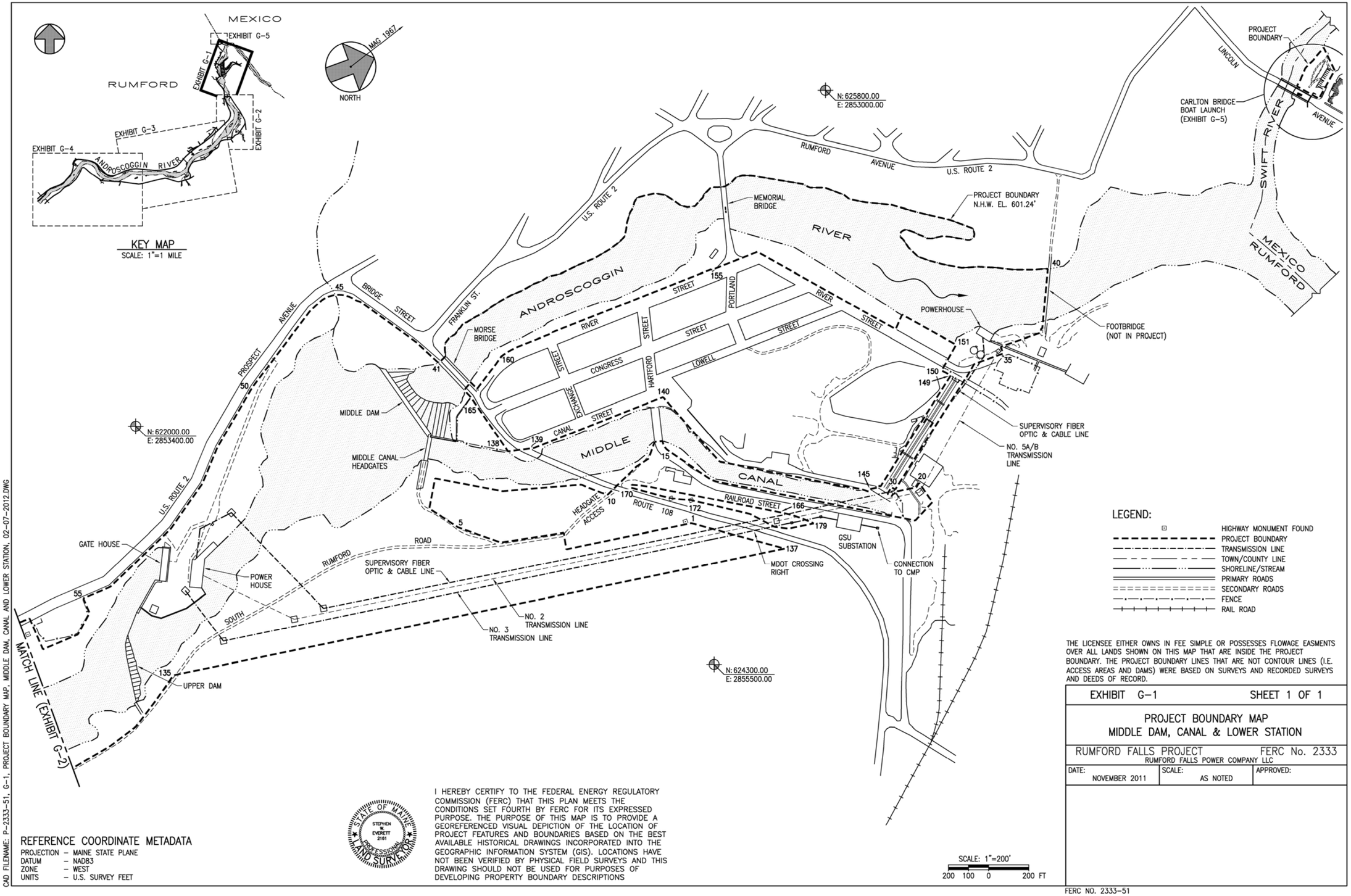
Sincerely,

Julia E. Crocker

Julia E. Crocker
Endangered Fish Recovery Branch Chief
Protected Resources Division

[1] https://www.habitat.noaa.gov/application/efhmapper/atlanticSalmonEFH.pdf

APPENDIX B
EXHIBIT G DRAWINGS



CAD FILENAME: P-2333-51, G-1, PROJECT BOUNDARY MAP, MIDDLE DAM, CANAL AND LOWER STATION, 02-07-2012.DWG

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN W. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

THE LICENSEE EITHER OWNS IN FEE SIMPLE OR POSSESSES FLOWAGE EASMENTS OVER ALL LANDS SHOWN ON THIS MAP THAT ARE INSIDE THE PROJECT BOUNDARY. THE PROJECT BOUNDARY LINES THAT ARE NOT CONTOUR LINES (I.E. ACCESS AREAS AND DAMS) WERE BASED ON SURVEYS AND RECORDED SURVEYS AND DEEDS OF RECORD.

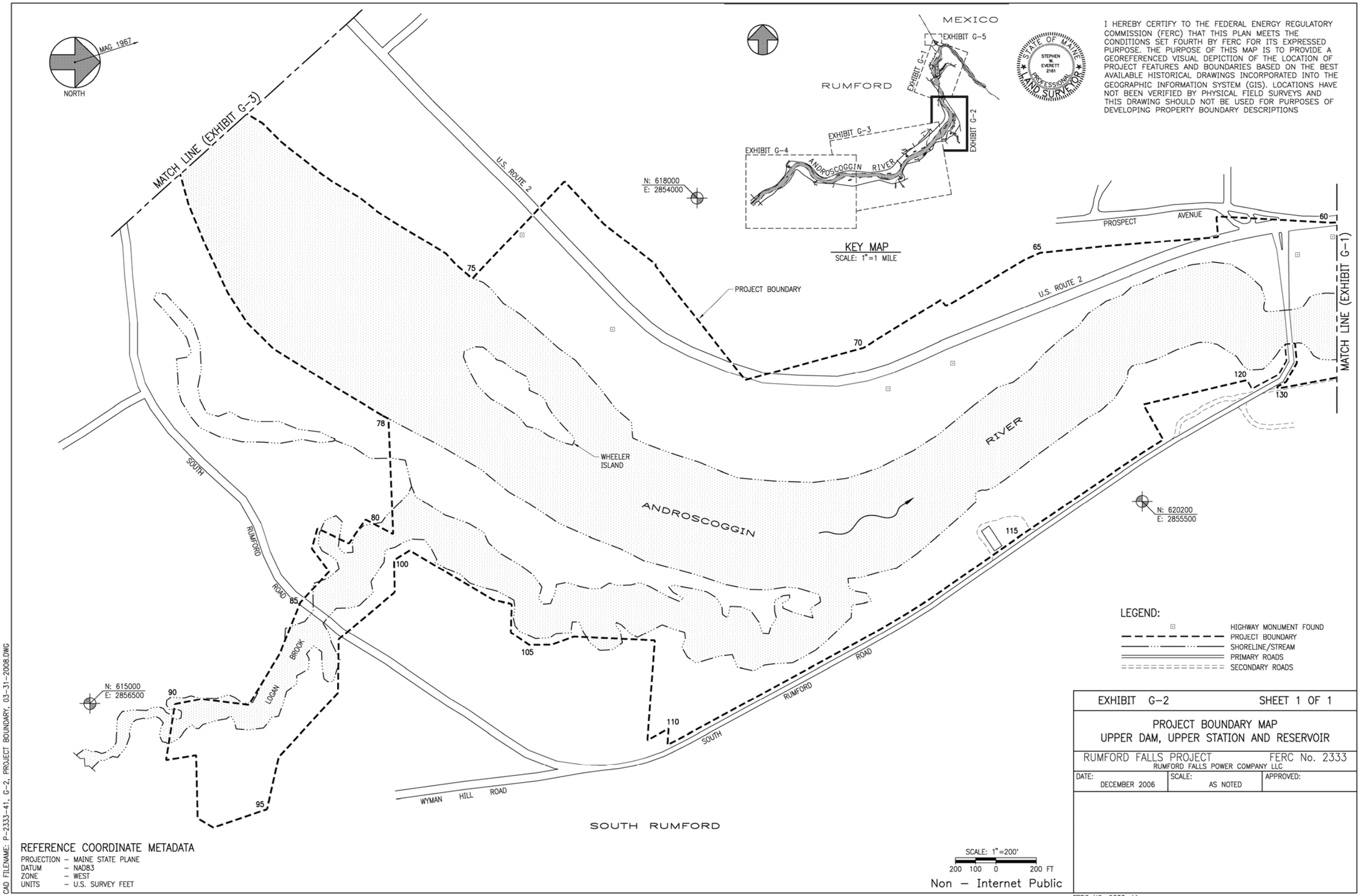
EXHIBIT G-1 SHEET 1 OF 1

PROJECT BOUNDARY MAP
MIDDLE DAM, CANAL & LOWER STATION

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
NOVEMBER 2011	AS NOTED	

FERC NO. 2333-51



STATE OF MAINE
STEPHEN W. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

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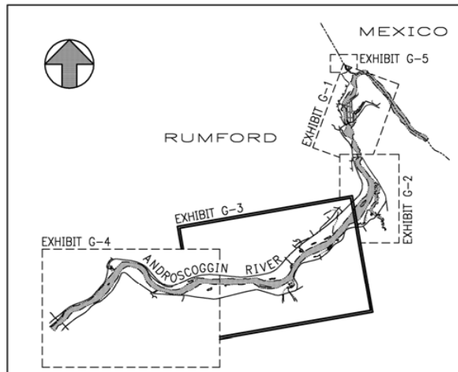
EXHIBIT G-2		SHEET 1 OF 1
PROJECT BOUNDARY MAP UPPER DAM, UPPER STATION AND RESERVOIR		
RUMFORD FALLS PROJECT RUMFORD FALLS POWER COMPANY LLC		FERC No. 2333
DATE: DECEMBER 2006	SCALE: AS NOTED	APPROVED:

CAD FILENAME: P-2333-41, G-2, PROJECT BOUNDARY, 03-31-2008.DWG

FERC NO. 2333-41



KEY MAP
SCALE: 1"=1 MILE

MAG 1967
NORTH

MATCH LINE (EXHIBIT G-2)

N: 614000
E: 2847000

U.S. ROUTE 2

ANDROSCOGGIN RIVER

SOUTH RUMFORD ROAD

PROJECT BOUNDARY
N.H.W. EL. 601.24'

N: 612000
E: 2852000

MATCH LINE (EXHIBIT G-4)

U.S. ROUTE 2

ANDROSCOGGIN RIVER

SOUTH RUMFORD ROAD

BROOK

HALL HILL ROAD

ZIRCON

N: 608500
E: 2844500

LEGEND:
- PROJECT BOUNDARY
- SHORELINE/STREAM
- PRIMARY ROADS
- SECONDARY ROADS

EXHIBIT G-3 SHEET 1 OF 1

PROJECT BOUNDARY MAP
RESERVOIR

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
DECEMBER 2006	AS NOTED	

CAD FILENAME: P-2333-42, G-3, PROJECT BOUNDARY, 03-31-2008.DWG

REFERENCE COORDINATE METADATA
PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN K. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

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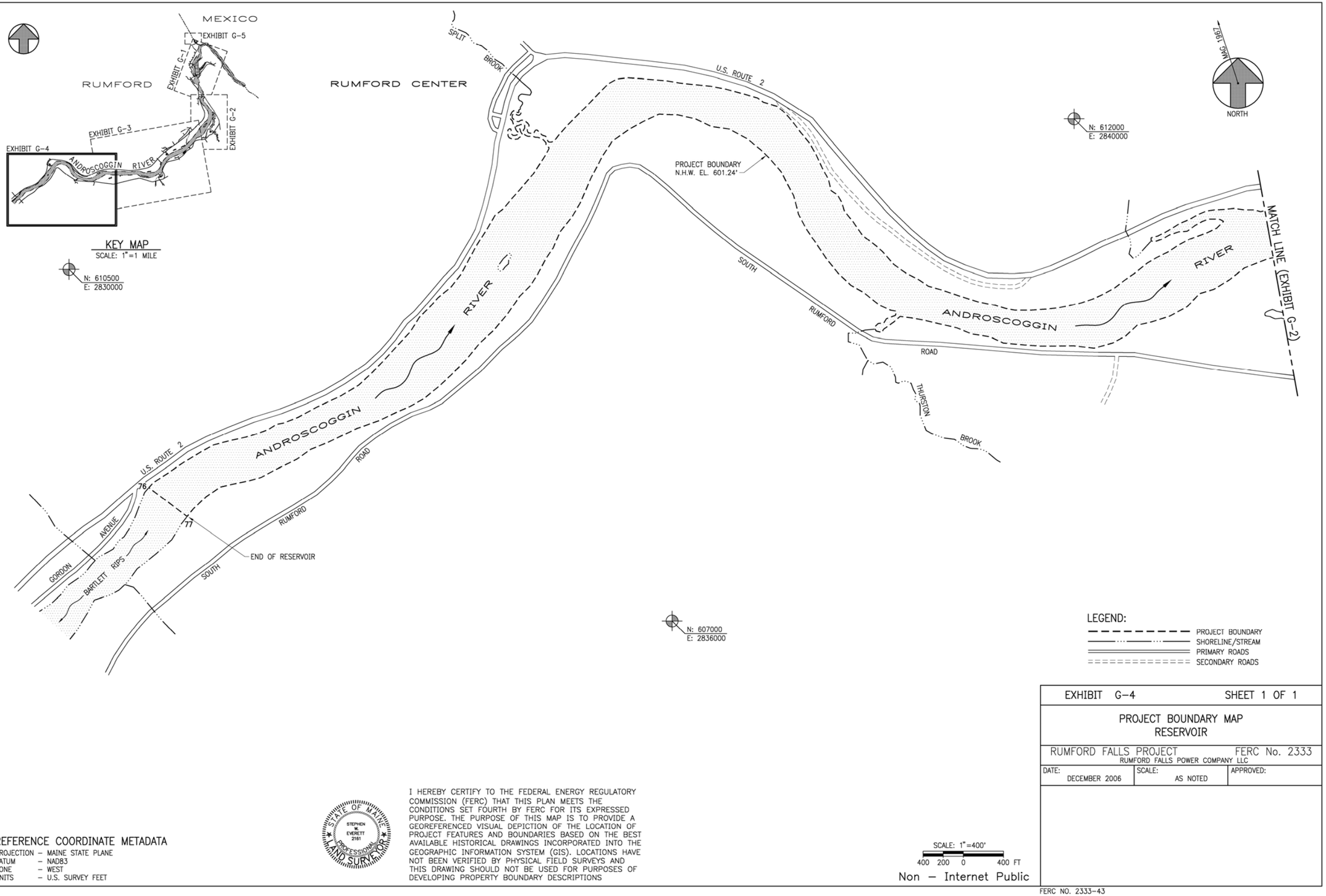
SCALE: 1"=400'
400 200 0 400 FT

Non – Internet Public

FERC NO. 2333-42



CAD FILENAME: P-2333-43, G-4, PROJECT BOUNDARY, 03-31-2008.DWG

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN M. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FOURTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS

SCALE: 1"=400'
400 200 0 400 FT

Non – Internet Public

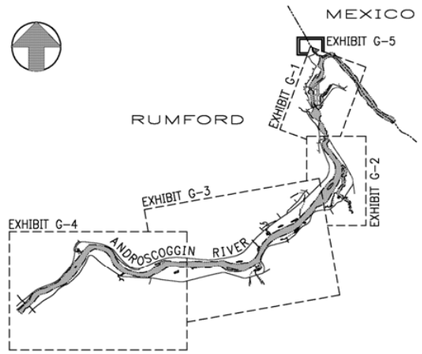
EXHIBIT G-4 SHEET 1 OF 1

PROJECT BOUNDARY MAP
RESERVOIR

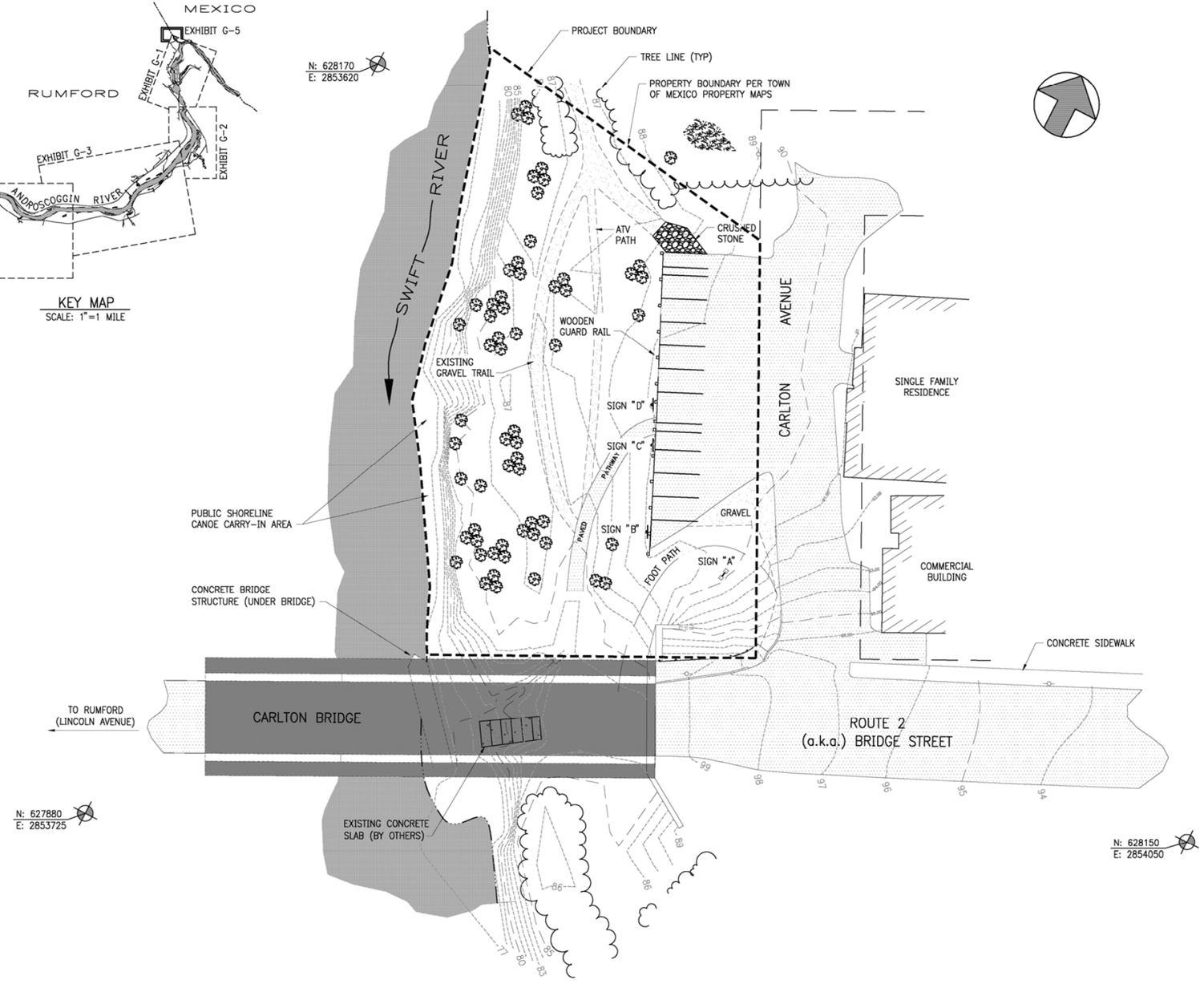
RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
DECEMBER 2006	AS NOTED	

FERC NO. 2333-43



KEY MAP
SCALE: 1"=1 MILE



SIGN DESCRIPTION TABLE:

SIGN "A"

Rumford Falls Hydro, LLC
FERC Project No. 2333-ME

This project is licensed by the Federal Energy Regulatory Commission For further information Contact:
Rumford falls Hydro, LLC at 207-723-4341

Recreation facilities are open to all members of the public

SIGN "B"

CANOE ACCESS PARKING ONLY

SIGN "C"

PARKING ONLY

SIGN "D"

PUBLIC BOAT ACCESS

MEXICO SITE

LEGEND:

- HIGHWAY MONUMENT FOUND
- PROJECT BOUNDARY
- TRANSMISSION LINE
- TOWN/COUNTY LINE
- SHORELINE/STREAM
- PRIMARY ROADS
- SECONDARY ROADS
- FENCE
- RAIL ROAD

REFERENCE COORDINATE METADATA

PROJECTION – MAINE STATE PLANE
DATUM – NAD83
ZONE – WEST
UNITS – U.S. SURVEY FEET

STATE OF MAINE
STEPHEN W. EVERETT 2161
PROFESSIONAL LAND SURVEYOR

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SCALE: 1"=20'
20 10 0 20 FT

Non – Internet Public

EXHIBIT G-5 SHEET 1 OF 1

PROJECT BOUNDARY MAP
CARLTON BRIDGE BOAT LAUNCH

RUMFORD FALLS PROJECT FERC No. 2333
RUMFORD FALLS POWER COMPANY LLC

DATE:	SCALE:	APPROVED:
JANUARY 2008	AS NOTED	

CAD FILENAME: P-2333-44, G-5, PROJECT BOUNDARY, 03-31-2008.DWG

FERC NO. 2333-44

APPENDIX C
LICENSE ORDERS, TERMS AND CONDITIONS, AND AMENDMENT ORDER

69 FERC ¶ 61,063

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Rumford Falls Power Company) Project No. 2333-005

ORDER ISSUING NEW LICENSE

(Issued October 18, 1994)

On December 30, 1991, Rumford Falls Power Company (the Company) filed a license application under Part I of the Federal Power Act (FPA) to continue to operate and maintain the Rumford Falls Project, located on the Androscoggin River, in the Town of Rumford, Oxford County, Maine. 1/ The Company proposes to continue to operate the project in the same manner as it operates at present; the only modifications to the project would be the addition of two canoe access facilities, one upstream and one downstream of the project.

The Commission issued notice of the application on November 17, 1992. On January 13, 1993, the State of Maine State Planning Office (Maine) filed a timely motion to intervene. 2/ On January 15, 1993, the Conservation Law Foundation, American Rivers, Appalachian Mountain Club, and the Maine Audubon Society (Conservation Law) jointly filed a timely motion to intervene, and Trout Unlimited, Maine Council of Trout Unlimited, Atlantic Salmon Federation, and the Maine Council of Atlantic Salmon Federation (Trout Unlimited) jointly filed a timely motion to intervene in opposition to licensing of the project. After fully considering the filings and comments of the intervenors and other agencies and individuals, we have determined that the license, with measures to protect and enhance the environment, should be issued.

1/ The Androscoggin River is a navigable waterway of the United States. See New Hampshire Water Resources Board, 20 F.P.C. 99, at p. 100 (1958). The Commission issued the license for this project in 1965. See Rumford Falls Power Company, 33 F.P.C. 1016. The license expired on December 31, 1993, and on January 29, 1994, notice was issued of the issuance of an annual license pursuant to Section 15(a)(1) of the FPA.

2/ The motion states that the State Planning Office is responsible for coordinating and developing a consistent state position in licensing proceedings before this Commission.

PROJECT DESCRIPTION

The existing project consists of two discrete hydropower developments, the upper station and the lower station, which are served by an upper dam and a middle dam, respectively. 3/ The upper station has been in operation since early in this century, and was completed as it now exists in 1918. The lower station was completed by 1955. The two stations have an installed nameplate capacity of 26.55 and 12.8 megawatts (MW), respectively, totaling 39.35 MW. 4/ The project power is used exclusively by Boise Cascade Corporation, of which the Company is a wholly-owned subsidiary, for the operations of Boise Cascade's pulp and paper mill in the Town of Rumford. 5/

The project is operated in a run-of-river mode. 6/ The upper and lower bypass reaches of the two developments are approximately 650 and 2,865 feet, respectively. 7/ Leakage from the dams provides base flows in the bypass reaches. 8/

BACKGROUND

The Androscoggin River flows through New Hampshire and Maine for a distance of about 164 miles to Merrymeeting Bay. The Town of Rumford is located on the river in the mountains of western Maine. The river has been heavily developed for nearly two

---

3/ The project has no "lower dam."

4/ The project's maximum hydraulic capacity is 7,300 cubic feet per second (cfs), and the average project generation is about 270,302 MWh. For a complete description of the project works, see ordering paragraph B(2).

5/ The estimated capacity requirement of the mill is 85 MW.

6/ In 1909 operators of upstream developments and the Company signed an agreement which provides for minimum flows of 1,550 cfs to be maintained below the upstream projects. River flows at the project consequently are relatively consistent.

7/ Although the Company's Application, Exh. E, states that the lower bypass reach is approximately 1,000 feet, the Company's Exh. G, sheet 2 of 6, Detail Map of Middle Dam, Canal & Lower Station, indicates that this figure is incorrect.

8/ The base flows are about 1 cfs and 21 cfs, respectively. The base flows are augmented by dam spillage when stream flows are in excess of the developments' turbine capacities.

centuries for hydropower production, pulp and paper related activities, and other industrial uses. As a consequence of this industrial development and of municipal waste discharges over the years, the river has been substantially polluted, and its use for recreation significantly impaired. During the past twenty years, however, as a result of construction of improved treatment facilities along the river, there has been an improvement in the river's water quality, and a return to recreational uses, primarily boating and fishing. The Maine Department of Environmental Protection (Environmental Protection) has designated the river in the area of the project as Class C. Class C waters should be suitable for fishing, recreation in and on the water, drinking water supply after treatment, industrial use, and habitat for fish and other aquatic life. 9/

The Commission staff issued an environmental assessment (EA) for this project on March 25, 1993, a copy of which is attached to and made a part of this order. The EA considered the filings of intervenors and of Federal and State agencies, and made recommendations as appropriate to address their concerns. The EA concluded that the continued operation of the project as proposed would result in minor adverse impacts that would be largely mitigated and offset by project benefits, that issuance of a new license for the project would not constitute a major federal action significantly affecting the quality of the human environment, 10/ and that a new license with measures to protect and enhance the environment should be issued for the project. A Safety and Design Assessment (SDA) was also prepared and is available in the Commission's public file associated with this project.

COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA 11/ require the Commission to give equal consideration to all uses of the waterway on which a project is located. Consequently, when the Commission reviews a project, the recreational, fish and wildlife resources, and other non-developmental values of the involved

---

9/ For Class C waters dissolved oxygen (DO) concentrations should be 5.0 milligrams per liter (mg/l) or 60 percent of saturation, whichever is greater. Upstream of the Rumford Falls Project, well outside the project boundary, the Androscoggin River is rated Class B, requiring DO concentrations of 7.0 mg/l or 75 percent saturation.

10/ This "finding of no significant impact," or FONSI, is in Section VIII of the EA.

11/ 16 U.S.C. §§ 797(e) and 803(a)(1).

waterway are considered equally with power and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved in the decision. Section 10(a)(1) provides that, when a license is issued, the project adopted shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for the improvement or development of the waterway.

The EA analyzed the alternatives of licensing the project as presently operated, as proposed, and with additional mitigation and enhancement measures. No other reasonable action alternatives to the project have been identified for assessment. The EA analyzed the effects of the Company's existing project on the Androscoggin River and recommended seven measures in order to protect and enhance the environmental resources. These measures would require the Company to:

1. Operate the Rumford Falls Project in a run-of-river mode for the protection of water quality and aquatic resources in the Androscoggin River.

2. Release a minimum flow of 1 cubic foot per second (cfs) from the Upper Dam and 21 cfs from the Middle Dam of the Rumford Falls Project, for the protection of aquatic resources and water quality in the two bypass reaches of the Androscoggin River.

3. File, and upon approval implement, a plan to measure and report project flows, water surface elevations, and operation records, in order to monitor compliance with the requirements for run-of-river operation and release of minimum flows to the bypass reaches.

4. File, and upon approval implement, a plan to control erosion and slope instability, and to minimize the quantity of sediment.

5. Implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties Affected by the Rumford Falls Hydroelectric Project."

6. Implement the Company's proposed canoe access facility plan for the carry-in canoe facility downstream of the project boundary at the Carlton Bridge site.

7. File, and upon approval implement, a plan for a canoe access facility at Rumford Point, Maine.

Based on the EA's independent review and evaluation of the proposed project, agency recommendations, and the no-action alternative, we have selected the proposed project, with these protection and enhancement measures, as the preferred option. With these measures, the environmental effects of subsequent operation would be minor, and fish, wildlife, recreation, and cultural resources would be protected or enhanced. The project would generate electricity from a renewable resource, and reliance on existing fossil-fueled, steam-electric generating plants would continue to be reduced. Nonrenewable energy resources would thereby be conserved, and atmospheric pollution and global warming would be reduced. For these reasons, issuance of a license with these additional measures would be best adapted to a comprehensive plan for the development and improvement of the waterway. We are including in the license Articles 401 through 403 and 405 through 408 to implement the EA's recommendations.

Pursuant to Section 10(a)(2) of the FPA, 12/ the Commission is required to consider the extent to which a project is consistent with Federal or State comprehensive plans for improving, developing, or conserving the waterway or waterways affected by the project. 13/ Federal and State agencies filed a total of fourteen comprehensive plans that address various resources in Maine. Of these, the EA identified and reviewed nine plans relevant to this project. 14/ The EA found that

---

12/ 16 U.S.C. § 803(a)(2).

13/ Comprehensive plans for this purpose are defined by Section 2.19 of the Commission's regulations, 18 C.F.R. § 2.19 (1993).

14/ State plans: Strategic plan for management of Atlantic salmon in the State of Maine, Maine Atlantic Sea-Run Salmon Commission, July 1984; Maine rivers study - final report, Maine Department of Conservation, May 1982; State of Maine comprehensive rivers management plan, Maine State Planning Office, Volume 1-3, May 1987; State of Maine comprehensive rivers management plan, Maine State Planning Office, Volume 4, December 1992; and State of Maine comprehensive rivers management plan, Maine State Planning Office, Volume 5, February 1993.

Federal plans: North American waterfowl management plan, U.S. Fish and Wildlife Service, May 1986; Fisheries USA:

(continued...)

the project with the foregoing measures for the protection and enhancement of environmental resources did not conflict with the relevant plans.

Based on a review of the agency and public comments filed in this proceeding, as discussed below, and on the EA's independent analysis pursuant to Sections 4(e), 10(a)(1), and 10(a)(2) of the FPA, we conclude that the Rumford Falls Project, with the required enhancement measures and other special license conditions, would be best adapted to comprehensive development of the Androscoggin River.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), the Commission may not issue a license for a hydroelectric project unless the State certifying agency has either issued water quality certification for the project or waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. On January 2, 1992, the Company filed with Environmental Protection an application for water quality certification for the project. Environmental Protection issued the requested certification for the project by an order dated December 17, 1992. 15/ The certification concluded, in essence, that continued operation of the project in a run-of-river mode would result in the affected waters being suitable for all Class C designated uses and made such a mode of operation a requirement of certification. This requirement is reflected in Article 401 of the new license.

RESERVATION OF FISHWAY PRESCRIPTION AUTHORITY

Section 18 of the FPA 16/ includes a provision that the Commission shall require the construction of such fishways as the Secretary of the Interior (Interior) may prescribe. By letter

---

14/(...continued)
the recreational fisheries policy of the U.S. Fish and Wildlife Service, undated; Final environmental impact statement - restoration of Atlantic salmon to New England rivers, Department of the Interior, May 1989; and the nationwide rivers inventory, National Park Service, January 1982.

15/ Maine's intervention states that decisions by Environmental Protection on the license application represent the official position of the State.

16/ 16 U.S.C. § 811.

dated January 21, 1993, Interior requested that any license issued for the Rumford Falls Project include a reservation of authority for Interior to prescribe the construction, operation, and maintenance of fishways. We recognize that a future need for fishways cannot always be determined at the time of licensing. Article 404 of this license therefore reserves authority to the Commission to require the licensee to construct, operate, and maintain such fishways as may be prescribed by Interior pursuant to Section 18.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

Section 10(j) of the FPA 17/ requires the Commission to include license conditions, based on recommendations of Federal and state fish and wildlife agencies, for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife resources. Pursuant to Section 10(j), Interior recommended that the licensee operate the project in a run-of-river mode and that it prepare a plan to ensure such operation. The EA for the project addresses these concerns, and the license includes conditions, as noted above, consistent with these recommendations.

INTERVENORS' CONCERNS

Maine asserts in its intervention that a new license for the Rumford Falls Project may be issued only if the Commission finds that the project is best adapted to the comprehensive hydropower plan developed by Maine. 18/ As noted above, the EA identified and reviewed nine comprehensive plans relevant to this project, one of which is the plan referred to in Maine's intervention, and found that there is no conflict between the plans and the project as conditioned in accordance with the EA's recommendations.

Conservation Law contends that the project does not adequately compensate the public for lost non-power values of the river and is therefore inconsistent with the requirement of Section 4(e) of the FPA that equal consideration be given to the

---

17/ 16 U.S.C. § 803(j).

18/ Maine's assertion is incorrect. Section 10(a)(1) of the FPA, in requiring that a project be "best adapted to a comprehensive plan for improving or developing a waterway," is not referring to comprehensive plans developed by a State. Such plans are addressed in Section 10(a)(2)(A), which requires only that we consider the extent to which a project is consistent with Federal or State comprehensive plans.

purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife, and the protection of recreational opportunities. In this regard, Conservation Law addresses particularly the issues of water quality, aesthetics and access in the bypass reaches, and the need for a buffer zone around the project boundary.

In regard to water quality, Conservation Law submits that the Company must take mitigation measures to help restore lost oxygen content in waters downstream of the project and the paper mill, must study the effects of dioxin and other pollutants in project waters and take necessary remedial action, and must provide mitigation to bring the project into compliance with Maine's water quality standards to restore designated and beneficial uses. These measures are unnecessary. The EA found that Interior and Environmental Protection agreed with the Company's review of water quality data 19/ showing that dissolved oxygen levels consistently meet Class C requirements. The project does not itself create or release pollutants, and the EA concluded that operation of the project in a run-of-river mode would minimize disruption of sediments in the project area. Accordingly, there is no justification for requiring the Company to conduct a study of pollutants. 20/ Maine's water quality certification for the project states that continued operation of the project, as conditioned by the certification, will be suitable for all Class C designated uses; consequently, there is no basis to conclude that the project would not comply with Maine's water quality standards for designated uses. Conservation Law fails to identify any reason for us to require any more stringent or extensive water quality measures.

Conservation Law argues that operation of the project causes the falls to be dry most of the time and that the Company must provide mitigation for the loss of aesthetics, natural fishing, and recreational access due to this operation. The EA analyzed the project's impacts on aesthetic resources. 21/ It noted that the natural cascades within the bypassed reaches are the prominent aesthetic resources at the project. However, views of the cascades within the Upper Dam bypass reach are obstructed by the Upper Dam station and forebay wall, and the cascades in the

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19/ See Application, Exh. E, App. 4.

20/ In this regard, Trout Unlimited states that the State ceased stocking trout above Rumford Falls in 1991 following a health advisory that found unsafe dioxin levels in fish. Trout Unlimited does not assert, however, that the project is a factor in dioxin contamination.

21/ See EA Section V.B.5.

Middle Dam bypass reach are located in an industrialized setting. In a typical year, spillage occurs over the Middle Dam on 165 days, and leakage flows occur at the dams at all other times. The EA concluded that, under these circumstances, existing flows in the bypass reaches are adequate to maintain the limited scenic views of the cascades. The EA also noted that the steep gradient, substrate, and lack of safe access limit the fishery management opportunities in the bypass reaches. Moreover, the Maine Department of Inland Fisheries and the United States Fish and Wildlife Service had concluded that present leakage flows and occasional spillage would be adequate for their present fisheries management programs. For these reasons, the EA concluded that release of minimum flows equivalent to the present leakage flows, plus continued spillage, would also be sufficient for current fishery management objectives. 22/

Conservation Law maintains that the Company failed to investigate the feasibility of obtaining a buffer zone around the entire project area to provide permanent public access to and protection of undeveloped lands. The EA satisfactorily addressed this issue. The EA found that the Company maintains a buffer zone, accessible to the public, for about one mile along both shorelines above the Upper Dam impoundment. Most of the remaining land adjacent to the shoreline and within the project boundary is owned by private individuals and the Town of Rumford. Furthermore, the Company proposed, the EA recommended, 23/ and the license we are issuing requires, 24/ that the Company develop two additional canoe access facilities, upstream and downstream, respectively, of the project. Maine itself has sought no more extensive measures for fishing and recreation purposes on project waters.

Conservation Law argues that, before relicensing the project, the Commission should prepare a comprehensive plan for the Androscoggin River Basin, as well as an EIS in which the project is reviewed along with all other projects undergoing, or soon to be undergoing, relicensing in the basin. Conservation Law contends that, in order to determine environmental impacts of the project and appropriate mitigation measures, the Commission should review the project's operation on the river as part of an entire network of industrial river use that includes hydropower projects, paper mills, and wastewater treatment plants. Trout Unlimited, likewise, urges consolidation of all Androscoggin River licensing proceedings for review in a single EIS, and it

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22/ See EA Section V.B.3.

23/ See EA Section V.B.7.

24/ See Articles 407 and 408 below.

stresses the need for assessment of systemwide impacts based on operation of the river as an integrated hydropower system.

As stated above, prior to issuing a license the Commission, pursuant to Section 10(a)(1) of the FPA, must determine that the proposed project is "best adapted to a comprehensive plan for improving or developing a waterway." The FPA does not, however, require the Commission to prepare a comprehensive plan for a river basin, against which a proposed project is to be measured. 25/ Rather, in determining whether to issue a license, the Commission considers the comprehensive picture of the water system of which the project is a part, based on the record in the particular proceeding. 26/ Here, the EA, in reaching its recommendations, discussed and gave appropriate consideration to such uses and conditions in the Androscoggin River basin as other hydropower projects, industrial and municipal uses, fisheries, and recreation. This approach satisfies the requirements of Section 10(a)(1).

The licensing of this project need not be considered in conjunction with the licensing of other Androscoggin River projects in a single environmental document. The EA noted that an EIS was being prepared for seven projects on the Upper Androscoggin River in New Hampshire and that the Rumford Falls Project would not be included in that EIS. In Public Service Company of New Hampshire, 68 FERC ¶ 61,177 (1994), we recently granted applications for new licenses for these seven projects. 27/ We have considered the Rumford Falls application and its associated EA in the context of the EIS for the other seven projects, just as we had considered the

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25/ See Saco River Salmon Club, 55 FERC ¶ 61,039 (1991). Moreover, the FPA does not confer on the Commission responsibility or authority to organize or coordinate the activities of various state and resource agencies that may be involved in managing riverine resources. 55 FERC ¶ 61,039 at p. 61,113.

26/ See Sayles Hydro Associates, 52 FERC ¶ 61,249, at pp. 61,867-68 (1990), aff'd, LaFlamme v. FERC, 945 F.2d 1124 (9th Cir. 1991).

27/ Individual orders issuing licenses for the seven projects were issued simultaneously and are found at 68 FERC ¶¶ 61,170 through 61,174, 61,176, and 61,179.

applications and the EIS for those seven projects in the context of the already-issued Rumford Falls EA. 28/

The EA in the present proceeding noted that the projects to be encompassed in the Upper Androscoggin EIS were located within an 11-mile reach whose downstream end was about 35 miles from the Rumford Falls Project. The EA determined that the Rumford Falls Project would not be included in that EIS, because the potential for the interaction of water uses to cumulatively affect resources diminishes with distance between them, particularly as to water quality and resident salmonids, resources of special concern in the Androscoggin River basin. 29/ Nevertheless, the EA analyzed the cumulative impacts of continued operation of the Rumford Falls Project on resources and thus adequately considered the role of the project in conjunction with other uses, including hydropower uses, in the basin.

Trout Unlimited asserts that the analysis should consider pre-project conditions, particularly as they pertain to fishery resources. In particular, it refers to efforts to restore Atlantic salmon, brown trout, and American shad in the area of downstream projects on the Lower Androscoggin that have historically blocked upstream passage, and it urges that the analysis consider the relationship between operations at those projects and operations at the Rumford Falls Project.

In our rulemaking to amend our relicensing rules, we determined that the evaluation and consideration of project conditions and appropriate enhancement measures in proceedings involving new licenses would be done in the context of today's environment and needs, not in the context of the pre-project environment. We acknowledged, nevertheless, that enhancement may in many cases constitute a reduction of the negative impacts attributable to a project since its construction. 30/ The EA

28/ In our order granting the seven license applications, we explained why it is unnecessary to include all relicensing actions in the basin within one EIS. 68 FERC ¶ 61,177 at p. 61,861-62. Among other things, we noted that, in Kleppe v. Sierra Club, 427 U.S. 390 at 410 (1975), the United States Supreme Court had rejected the proposition that pending proposals for similar actions in a region would necessarily require analysis in a single comprehensive impact statement.

29/ See EA at p. 6.

30/ See Hydroelectric Relicensing Regulations Under the Federal Power Act, FERC Statutes & Regulations, Regulations

(continued...)

prepared for the Rumford Falls Project noted that, over time, hydropower and other industrial uses of the river had contributed to drastic changes in the natural environment. 31/ However, it also noted that introduction of anadromous fish upstream as far as Rumford Falls was not a current fishery management objective of Federal and State agencies. 32/ In response to Interior's request, the EA recommended the reservation of authority for the prescription of fishways in the future should these objectives change. Thus, the EA did consider pre-project conditions and recommend measures to address them, should fishery restoration efforts be planned for the project area in the future. 33/ We conclude that the EA's evaluation of project conditions and enhancement measures is appropriate under these circumstances. 34/

Trout Unlimited maintains that an EIS should be prepared because the project has significant effects on resident fish and wildlife and on recreation, diminishes water quality, and adversely affects cultural and archeological resources. However, Trout Unlimited offers no evidentiary support for these contentions. The EA addressed each of these resources and found that there would be no significant effects. 35/ Trout Unlimited also argues that an EIS is justified because the

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30/(...continued)
Preambles 1986-1990, ¶ 30,854 at p. 31,401 (May 17, 1989). We recently affirmed this position in City of Tacoma, Washington, 67 FERC ¶ 61,152 at p. 61,444 (1994) and in Public Service Company of New Hampshire, 68 FERC ¶ 61,177 at p. 61,867-68 (1994).

31/ EA, p. 5.

32/ EA p. 15.

33/ We note that the Company, in its January 29, 1993 reply to Conservation Law's and Trout Unlimited's pleadings, asserts that, even prior to construction of the Rumford Falls Project dams, salmon could not range upstream of Rumford Falls.

34/ We also note that, in Scoping Document II for the Lower Androscoggin River, issued August 1994, staff has indicated that it will address both site-specific and cumulative effects on anadromous fish migration and restoration efforts in the Lower Androscoggin River of the projects whose license applications are encompassed by the EIS to be prepared in that proceeding.

35/ See EA Section V.B.

project is controversial. The existence of controversy is a factor to be considered in deciding whether or not to prepare an EIS but is not by itself determinative of the issue. 36/ Here, the acquiescence of the pertinent Federal and State agencies in the relicensing of this project underscores the lack of significant controversy regarding the extent of the project's effects. An EIS is warranted only for a major Federal action significantly affecting the quality of the human environment. The EA thoroughly analyzed the impacts of the project and found that, with the required enhancement measures, issuance of a license for the project would not constitute such an action.

Finally, both Conservation Law and Trout Unlimited request that the Commission conduct an adjudicatory hearing to resolve all questions of material fact related to the relicensing of the project. The intervenors' requests broadly assert that there are issues of material fact but fail to specify what facts are in dispute, what evidence they would present at a trial type hearing, and why the matters at issue cannot be resolved on the basis of the pleadings and evidence in the record before us. We find that the information in the record develops the facts adequately, and that there are no significant disputes regarding any material facts that cannot be resolved on the basis of a written record. We therefore deny the requests for an adjudicatory hearing.

On March 22, 1993, Conservation Law filed a motion for leave to file reply comments in response to the Company's January 29 and March 1, 1993 filings, which themselves responded to Conservation Law's and Trout Unlimited's interventions, comments, and requests. The Commission's regulations, at 18 C.F.R. § 4.34(b), do not provide for replies to reply comments. Therefore, Conservation Law's motion will be denied.

CONSIDERATION OF THE APPLICANT'S RECORD

In accordance with Sections 10(a)(2)(C) and 15(a) of the FPA, 37/ we have evaluated the Company's record as a licensee in the following areas:

36/ See Sayles Hydro Associates, 49 FERC ¶ 61,095 (1989). See also Friends of the Ompompanoosuc v. FERC, 968 F.2d 1549 (2d Cir. 1992).

37/ 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

1. Section 10(a)(2)(C): Consumption Efficiency Improvement Programs

The Company is not an electric utility. Its only demand-side consumer is Boise Cascade's pulp and paper products industrial complex. In view of these facts, Section 10(a)(2)(C), which pertains to the applicant's consumption efficiency improvement programs, does not apply to the Company.

2. Section 15(a)(2)(A): The Ability of the Applicant to Comply with Its License and with Other Applicable Provisions of the FPA

We have reviewed the Company's license application and its record of compliance with the existing license in an effort to judge its ability to comply with the articles, terms, and conditions of any license issued, and with other applicable provisions of this part of the FPA. On the basis of the review, we believe the Company can satisfy the conditions of any new license issued to it.

3. Section 15(a)(2)(B): The Plans of the Applicant to Manage, Operate, and Maintain the Project Safely

In Section H of the application, the Company describes in detail its employee-safety and public-safety measures. Among the public safety measures are signs along the Upper Dam impoundment that warn boaters of hazardous conditions associated with the project, a log boom at High Bridge that prevents boaters from being swept toward the Upper Dam, and fences that restrict public access to the hazardous project features. We conclude that the Company's plans are adequate to ensure project safety.

4. Section 15(a)(2)(C): The Plans and Ability of the Applicant to Operate and Maintain the Project in a Manner Most Likely to Provide Efficient and Reliable Electric Service

The Company recently increased the generation capacity of the project by rebuilding units 1 and 2 at the Upper Station in 1987 and 1988. The nameplate capacity of the units has been increased from 7,200 to 8,500 kilovolt-amperes (kVA), which consequently improved the efficiency of the Upper Station.

The Company's membership in the Industrial Energy Consumer Group facilitates the coordination of its energy production ability with the energy requirements of its sole customer, the mill, and system characteristics of Central Maine Power Company (Central Maine), the public utility which services the Town of Rumford. The Company's industrial interruptible rate program enhances its system-wide load management program. Group member contracts are determined by Central Maine and New England Power

Pool system peaks. Industrial participation in this program has reduced Central Maine's annual system peak by approximately seven percent.

Sensitivity to Central Maine's peak loading characteristics has resulted in the establishment of time-of-use rates for power purchased by the Company and other industrial consumers. Maintenance scheduling practices were modified at the mill to take advantage of this economic incentive. These practices resulted in a 2,000 kW shift from on-peak to off-peak periods.

We conclude that the applicant's operation and maintenance planning is likely to provide efficient and reliable electric service.

5. Section 15(a)(2)(D): The Applicant's Need for the Project's Power

The Company is a totally owned subsidiary of Boise Cascade. All of the power generated by the project is used by Boise Cascade's pulp and paper mill. The present estimated capacity requirement of the mill is 85 megawatts, while the total installed capacity of the project is 39.35 megawatts. Therefore, as long as the mill is operating at its present capacity -- and even if substantial future peak reduction measures are implemented -- the mill's demand for electricity will exceed the supply available from the project.

The project's Upper Station has been generating electricity since 1903, and its Lower Station was added in 1954. The pulp and paper products industry is highly competitive and energy intensive. Boise Cascade's competitive position depends heavily on the availability of a reliable and adequate source of low-cost electric power. The project's supply of low-cost power to the mill over the 90-year period has been an important factor in Boise Cascade's ability to survive and grow in a competitive market. The operating history of the Rumford Falls Project has established, in adequate fashion, the Company's short-term and long-term need for power.

6. Section 15(a)(2)(F): The Impact of the Project on the Applicant's Existing and Planned Transmission Services

The Company states that, since the mill requires approximately 2.5 times more power than the project can produce, electrical connections have been established between the mill and Central Maine's transmission system within Substation No. 5. Not receiving a license would have little effect on the applicant's transmission system other than to cause the primary project lines to be de-energized.

7. Section 15(a)(2)(G): Whether the Plans of the Applicant Will be Achieved to the Greatest Extent Possible in a Cost Effective Manner

The Company plans no project changes except those periodically required to ensure project safety. We conclude that the project, as presently constructed and as the Company proposes to operate it, fully develops the economical hydropower potential of the site and will continue to provide power in a cost effective manner.

8. Section 10(a)(3)(A): The Applicant's Record of Compliance with the Terms and Conditions of the Existing License

We have reviewed the Company's compliance with the terms and conditions of the existing license. We find that the Company's overall record of making timely filings and of compliance with its license is satisfactory.

9. Section 10(a)(3)(B): The Applicant's Actions Related to the Project Which Affect the Public

Substantial portions of the original land purchased for the project have been returned to public use for recreational purposes. Public access has been provided to the impoundments of both dams, and measures are in place to prevent injury to boaters in the project area. The Company states that, to the best of its knowledge, no actions related to project operations have negatively affected the public, and there have been no formal complaints registered by the public with either the Company or public agencies. We find that no project-related actions affecting the public weigh against issuing a new license.

ECONOMIC EVALUATION

A project is economically beneficial as long as its projected levelized cost is less than the levelized cost of alternative energy and capacity. The project costs consist of the operation and maintenance costs and administrative and general expenses. The Rumford Falls Project will continue to operate as it has in the past with regard to minimum streamflow releases. Therefore, the minimum streamflow release requirements we are including in the license will not cause any reductions to the project generation. The cost of the non-flow measures that we are requiring is minor when compared to the value of the power. The staff has computed the 30-year levelized net benefits of the project, based on the Company's estimates of the project's costs and the cost of purchasing replacement power from the local utility (from application Exhibit H-1), assuming a cost of money and discount rate of 10 percent. The levelized cost of energy from the project is projected to be about 1.7 cents per

kilowatthour in 1994 dollars, and the levelized cost to purchase alternative energy is projected to be about 8.7 cents per kilowatthour in 1994 dollars. Therefore, the project will have an estimated net economic benefit of about 7 cents per kilowatthour, or about $18,921,000 annually, based on an average generation of 270,302,000 kilowatthours of generation annually.

PROJECT RETIREMENT

The Commission has issued a Notice of Inquiry (NOI), dated September 15, 1993, requesting comments that address numerous issues involving the decommissioning of licensed hydropower projects. 38/ The NOI states that the Commission is not proposing new regulations at this time, but is inviting comments on whether new regulations may be appropriate. Alternatively, the Commission may consider issuing a statement of policy addressing the decommissioning of licensed hydropower projects, or take other measures. The Rumford Falls Project may be affected by future actions that the Commission takes with respect to issues in the NOI. Therefore, we have included Article 204, which reserves authority to the Commission to require the licensee to conduct studies, make financial provisions, or otherwise make reasonable provisions for decommissioning the project.

By including Article 204, the Commission does not intend to prejudge the outcome of the NOI. We are simply including the article so that we will be in a position to make any lawful and appropriate changes in the terms and conditions of this license, which is being issued during the pendency of the NOI, based on the final outcome of that proceeding.

LICENSE TERM

In 1986, the Electric Consumers Protection Act 39/ modified Section 15 of the FPA to specify that any license issued under Section 15 shall be for a term that the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. The Commission's policy is to establish 30-year terms for those projects that propose little or no redevelopment, new construction, new capacity, or enhancement; 40-year terms for those projects that propose moderate redevelopment, new construction, new capacity, or enhancement;

38/ Notice of Inquiry, Project Decommissioning at Relicensing, Docket No. RM93-23-000, September 15, 1993, 58 FR 48,991 (1993).

39/ Pub. L. 99-495, 100 Stat. 1234 (1986).

and 50-year terms for those projects that propose extensive redevelopment, new construction, new capacity, or enhancement.

The Company does not propose significant changes in the existing project works for the Rumford Falls Project or significant enhancement. Accordingly, the new license will be for a term of 30 years.

SUMMARY OF FINDINGS

Background information, analysis of impacts, support for related license articles, and the basis for the finding of no significant impact on the environment are contained in the EA issued for this project and attached to this order. The license conditions are consistent with the water quality certification. Issuance of this license is not a major Federal action significantly affecting the quality of the human environment.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the SDA.

We conclude that the project will not conflict with any planned or authorized development and will be best adapted to comprehensive development of the waterway for beneficial public uses.

The Commission orders:

(A) This license is issued to Rumford Falls Power Company (licensee), for a period of 30 years, effective the first day of the month in which this license is issued, to operate and maintain the Rumford Falls Project. This license is subject to the terms and conditions of the Federal Power Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands shown by exhibit G:

Exhibit G-	FERC No. 2333-	Showing
1	30	General Map
2	31	Middle Dam, Canal & Lower Station
3	32	Upper Dam, Station and Reservoir
4	33	Reservoir
5	34	Reservoir
6	35	Original Purchases

(2) Project works consisting of: two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the project is 39.35 megawatts (MW), the project's maximum hydraulic capacity is 7,300 cubic feet per second (cfs), and the average annual project generation is about 270,302 megawatthours (MWh).

(a) Upper Station Development:

The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The existing development has a total installed nameplate capacity of 26.55 MW, a maximum hydraulic capacity of 4,500 cfs, and an average annual energy generation of about 170,817 MWh. In detail, the project can be described as follows:

The Upper Station Development consists of: (1) a concrete gravity dam, having a 464-foot-long by 37-foot-high ogee type spillway section, with a crest elevation of 598.74 feet USGS, topped with 2.5-foot-high, pin-supported, wooden flashboards; (2) a forebay about 2,300 feet long by 150 feet wide; (3) a gatehouse with eight headgates (two headgates for each of the four penstocks), trashracks, and other appurtenant equipment; (4) four underground steel-plate penstocks, each about 110 feet long, three of which are 12 feet in diameter, and one 13 feet in diameter; (5) a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, about 30 feet wide by 120 feet long by 92 feet high, equipped with one horizontal generating unit with a capacity of 4,050 kW, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three vertical generating units, two with a capacity of 7,650 kW each, and one with a capacity of 7,200 kW; (6) an impoundment, with a gross storage capacity of 2,900 acre-feet, surface area of about 419 acres, normal maximum headwater elevation of 601.24 feet, and tailwater elevation of 502.74 feet; (7) four overhead 11.5-kilovolt (kV) transmission lines extending from the upper station to the mill, two lines

being 6,000 feet long, another being 5,400 feet long, and the last 5,200 feet long; and (8) appurtenant facilities.

(b) Lower Station Development:

The Lower Station Development's principal features consist of the Middle Dam, the Middle Canal headgate structure with a waste weir section, the Middle Canal, a gatehouse, two penstocks (each with a surge tank), a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 12.80 MW, a total maximum hydraulic capacity of 2,800 cfs, and an average annual generation of about 99,485 MWh. In detail, the project can be described as follows:

The Lower Station Development consists of: (1) a rock-filled, wooden-cribbed, and concrete-capped Middle Dam, having a 328.6-foot-long by 20-foot-high gravity spillway section, with a crest elevation at 501.74 feet, topped with 1.0-foot-high pin-supported wooden flashboards; (2) a Middle Canal concrete headgate structure, located adjacent to the dam, about 120 feet long, with 10 steel headgates, and a waste weir section perpendicular to the headgate structure, about 120 feet long, with a crest elevation of 501.6 feet, topped with 10-inch-high flashboards; (3) a Middle Canal, about 2,400 feet long, with width ranging from 75 to 175 feet and depth from 8 to 11 feet; (4) a gatehouse containing two headgates, trashracks, and other appurtenant equipment; (5) two 12-foot-diameter, steel-plate penstocks, each extending about 815 feet to two cylindrical surge tanks, each about 36 feet in diameter by 50.5 feet high, and the penstocks continuing 77 feet to the powerhouse; (6) a masonry powerhouse, equipped with two identical vertical units, each with 6,400 kW capacity; (7) an impoundment, with a gross storage capacity of 141 acre-feet, surface area of about 21 acres, normal maximum headwater elevation of 502.74 feet, and tailwater elevation of 423.24 feet; (8) 600-foot-long, 11.5-kV generator leads, extending from the Lower Station to Substation No. 5; and (9) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A:

Pages A-1 through A-7 and Figures A-1 and A-2, describing the existing mechanical, electrical and transmission equipment, filed December 30, 1991.

Exhibit F:

Exhibit F drawings	FERC NO.	Showing
Sheet 1	2333-1	Detail Map, Upper Dam & Upper Station
Sheet 2	2333-2	Sections Through Upper Dam, Power Station & Gatehouse
Sheet 3	2333-3	Elevations of Upper Station & Gatehouse
Sheet 4	2333-4	Detail Map, Lower Station Grounds & Headworks
Sheet-5	2333-5	Section & Profile, Lower Station Development
Sheet-6	2333-6	Elevations of Lower Station & Gatehouse
Sheet-7	2333-7	Detail Map, Middle Dam & Middle Canal Headworks
Sheet-8	2333-8	Sections of Middle Dam, Middle Canal & Headworks

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibits A, F, and G described above are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," and the following additional articles:

Article 201. The licensee shall pay the United States an annual charge, effective on the first day of the month in which

this license is issued, for the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act as determined by the Commission. The authorized installed capacity for that purpose is 52,460 horsepower.

Article 202. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includable in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 203. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed. The benefits will be assessed in accordance with Subpart B of the regulations.

Article 204. The Commission reserves authority, in the context of a rulemaking proceeding specific to this license, to require the licensee to conduct studies, make financial

provisions, or otherwise make reasonable provisions for decommissioning of the project. The terms of this article shall be effective unless the Commission, in Docket No. RM93-23, finds that the Commission lacks statutory authority to require such actions, or otherwise determines that the article should be rescinded.

Article 401. The licensee shall operate the Rumford Falls Project in a run-of-river mode for the protection of water quality and aquatic resources in the Androscoggin River. The licensee shall maintain the upper and middle impoundments within 1 foot of full pond elevation (601.24 feet U.S. Geological Survey Datum (USGS) at the upper impoundment and 502.74 feet USGS at the middle impoundment) and shall at all times act to minimize the fluctuations of the reservoir surface elevations, i.e., maintain a discharge from the project so that, at any point in time, flows immediately downstream from the project tailraces approximate the sum of inflows to the project reservoirs, minus withdrawals.

Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the U.S. Fish and Wildlife Service, the Maine Department of Environmental Protection, and Maine Department of Inland Fisheries and Wildlife. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 402. The licensee shall release a minimum flow of one cubic foot per second (cfs) from the Upper Dam and 21 cfs from the Middle Dam of the Rumford Falls Project, as measured at the base of the dams, or inflow, whichever is less, for the protection of aquatic resources and water quality in the two bypass reaches of the Androscoggin River. This flow may be temporarily modified, if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the U.S. Fish and Wildlife Service, the Maine Department of Environmental Protection, and Maine Department of Inland Fisheries and Wildlife. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 403. The licensee shall file with the Commission for approval, within 180 days from the date of issuance of the license, a plan to measure and report project flows, water surface elevations, and operation records to monitor compliance with the run-of-river mode of operation and flow releases to the bypass reaches, as stipulated in Articles 401 and 402, respectively. The plan shall include but not be limited to: (1) an implementation schedule; (2) the location, design, and calibration of gaging equipment, if needed; (3) the method of

data collection; and (4) a provision for providing flow data and water surface elevation data to the U.S. Geological Survey, the U.S. Fish and Wildlife Service, the Maine Department of Environmental Protection, and the Maine Department of Inland Fisheries and Wildlife within 30 days from the date of the agency's request for the data.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey, the U.S. Fish and Wildlife Service, the Maine Department of Environmental Protection, and the Maine Department of Inland Fisheries and Wildlife. The licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

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

If the results of monitoring indicate that changes in project structures or operations are necessary to ensure maintenance of run-of-river operation or maintenance of minimum flows, the Commission may direct the licensee to modify project structures or operations.

Article 404. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior pursuant to Section 18 of the Federal Power Act.

Article 405. At least 90 days before the start of any land-disturbing or land-clearing activities at the canoe access facility sites referred to in Articles 407 and 408, the licensee shall file with the Commission for approval a plan to control erosion, to control slope instability, and to minimize the quantity of sediment. The plan shall be based on actual site geological, soil, and groundwater conditions and on the facility design, and shall include, at a minimum, the following:

(a) a description of the actual site conditions;

(b) measures proposed to control erosion, to prevent slope instability, and to minimize the quantity of sediment resulting from project construction and operation;

(c) detailed descriptions, functional design drawings, and specific topographic locations of all control measures; and

(d) a specific implementation schedule.

The licensee shall prepare the plan after consultation with the Soil Conservation Service (SCS) and the Maine Department of Environmental Protection (MDEP). The licensee shall include with the plan: documentation of consultation, comments and recommendations on the completed plan after providing the plan to the SCS and the MDEP, and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the SCS and MDEP to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on actual geological, soil, and groundwater conditions at the site.

The Commission reserves the right to require changes to the plan. No land-disturbing or land-clearing activities shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. The licensee shall implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties Affected by the Rumford Falls Hydroelectric Project."

Article 407. The licensee shall implement the canoe access facility plan filed September 22, 1992, as pages 5 through 6 and drawing 92-4046. The licensee shall construct the carry-in canoe access facility downstream of the existing project boundary at the Carlton Bridge site. The facility shall include a parking area, a canoe launching area, and access for the disabled. The licensee shall operate and maintain or arrange for the operation and maintenance of the canoe access facility during the term of the license. Within 90 days of completion of construction, the licensee shall file revised exhibits to show the facility as built and to include the facility within the project boundary.

Article 408. The licensee, after consulting with the Town of Rumford, the Maine Department of Conservation, and the Friends of the Androscoggin, and within six months from the issuance date of the license, shall file for Commission approval, and upon approval implement, a plan for a canoe access facility at Rumford Point, Maine. The canoe access facility plan shall include:

(a) a parking area, a canoe launching area, and access for the disabled;

(b) a detailed drawing showing the type and location of the recreation facilities;

(c) a cost estimate and a schedule for completing the facility within two years of the issuance date of the license;

(d) a description of how the recreation facilities shall be operated and maintained during the term of the license and the entity responsible for the operation and maintenance of such facilities.

The licensee shall include documentation of consultation with the agencies, copies of agency comments on the completed plan, and specific descriptions of how all of the agency comments are accommodated by the plan. The Commission reserves the right to require changes to the plan.

Article 409. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family

type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

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

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all

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

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

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

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

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions

to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

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

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

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) The motion filed by the Conservation Law Foundation, American Rivers, Appalachian Mountain Club, and the Maine Audubon Society on March 22, 1993, for leave to file reply comments is denied.

(G) This order is final unless a request for rehearing is filed within 30 days of the date of issuance of this order, pursuant to Section 313 of the Federal Power Act. The filing of a request for rehearing does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

By the Commission.

(S E A L)

Lois D. Cashell,
Secretary.

ENVIRONMENTAL ASSESSMENT
FOR HYDROPOWER LICENSE

Rumford Falls Hydroelectric Project

FERC Project No. 2333-005

Maine

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Project Review
825 N. Capitol Street, NE
Washington, D.C. 20426

March 25, 1993

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SUMMARY

On December 30, 1991, Rumford Falls Power Company (RFPC) filed an application for a license for the existing 39.35 megawatt (MW) Rumford Falls Hydroelectric Project No. 2333. On August 24, 1992, and September 22, 1992, RFPC supplemented its application.

The project is located on the Androscoggin River near the Town of Rumford, Oxford County, Maine. RFPC proposes no new capacity nor no new construction with the exception of boating recreation facilities.

The existing constructed project consists of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The upper station and the lower station developments each have a total installed nameplate capacity of 26.55 MW and 12.8 MW, respectively, totaling 39.35 MW; the project's maximum hydraulic capacity is 7,300 cubic feet per second (cfs); and the average annual project generation is about 270,302 MWh.

The EA attached to this order analyzes the effects of RFPC's existing project on the Androscoggin River and recommends seven measures in order to protect and enhance the environmental resources. These measures are:

1. Operate the Rumford Falls Project in a run-of-river mode for the protection of water quality and aquatic resources in the Androscoggin River.

2. Release a minimum flow of 1 cubic foot per second (cfs) from the Upper dam and 21 cfs from the Middle dam of the Rumford Falls Project, for the protection of aquatic resources and water quality in the two bypassed reaches of the Androscoggin River.

3. File, and upon approval implement, a plan to measure and report project flows, water surface elevations, and operation records to monitor compliance with the run-of-river mode of operation and flow releases to the bypassed reaches.

4. File, and upon approval implement, a plan to control erosion, slope instability, and to minimize the quantity of sediment.

5. Implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties Affected by the Rumford Falls Hydroelectric Project."

6. Implement the canoe access facility plan and construct the carry-in canoe access facility downstream of the project boundary at the Carlton Bridge site.

7. File, and upon approval implement, a plan for a canoe access facility at Rumford Point, Maine.

Based on our independent review and evaluation of the proposed Rumford Falls project, agency recommendations, and the no-action alternative, we have selected issuing a license for the proposed project, with additional staff-recommended enhancement measures, as the preferred option. We recommend this option because: (1) with enhancement measures, the environmental effects of subsequent operation would be minor; (2) the enhancement measures would protect or enhance fish, wildlife, recreation, and cultural resources; and (3) the electricity generated from a renewable resource would be provided, thus reducing the use of existing fossil-fueled, steam-electric generating plants; thereby, conserving nonrenewable energy resources, and reducing atmospheric pollution, and global warming.

No reasonable action alternatives to the project have been identified for assessment. The no-action alternative has been considered and is addressed in the environmental analysis and the comprehensive development sections of this EA.

RFPC completed application for a Section 401 Water Quality Certificate (WQC) on January 2, 1992. RFPC received a WQC from the State of Maine Department of Environmental Protection (MDEP), as required by the Clean Water Act, on December 17, 1992. This WQC, issued by the MDEP within one year of the receipt of the completed WQC application, is considered valid.

The WQC requires that 1) the Rumford Falls Project operate in a run-of-river mode (outflow equals inflow) while maintaining a minimum flow in the river immediately downstream of the tailrace of 1,034 cfs or inflow, whichever is less; 2) except for approved maintenance or emergencies beyond the applicant's control, the water levels in the upper impoundment be maintained within 1.0 foot of full pond elevation of 601.24 feet USGS (top of flashboards), and water levels in the middle dam impoundment be maintained within 1.0 foot of full middle pond elevation of 502.74 feet USGS (top of flashboards); 3) the applicant submit plans for providing and monitoring the water levels in the upper and middle impoundments; and 4) the applicant provide a public carry-in canoe access point below the project with parking for six to twelve vehicles and work jointly with others to seek and support future development of carry-in canoe access.

Pursuant to Section 10(j) of the Federal Power Act (Act), we make a determination that the recommendations of the Federal and state fish and wildlife agencies are consistent with the purposes

and requirements of Part I of the Act and applicable law. Section 10(j) of the Act requires the Commission to include license conditions, based on recommendations of Federal and state fish and wildlife agencies, for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife resources. We have addressed the concerns of the Federal and state fish and wildlife agencies and made recommendations consistent with those of the agencies.

Based on our independent environmental analysis, we conclude in the EA that issuance of a license for the Rumford Falls Project would not constitute a major Federal action significantly affecting the quality of the human environment.

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING, DIVISION OF PROJECT REVIEW

Rumford Falls Hydroelectric Project

FERC Project No. 2333-005 Maine

March 25, 1993

I. APPLICATION

On December 30, 1991, Rumford Falls Power Company (RFPC) filed an application for a license for the existing 39.35 megawatt (MW) Rumford Falls Hydroelectric Project No. 2333. On August 24, 1992, and September 22, 1992, RFPC supplemented its application.

The project is located on the Androscoggin River near the Town of Rumford, Oxford County, Maine. (See figure 1.)

II. PURPOSE AND NEED FOR ACTION

A. Purpose

RFPC's existing Rumford Falls hydropower development generates about 270,302 megawatthours (MWh) of electric energy annually. All the power generated is utilized by the Boise Cascade Corporation's pulp and paper mill (Mill), located in the Town of Rumford, Maine. The present power demand for the Mill is approximately two and a half times the maximum output of the project.

B. Need for Power

RFPC has applied for a new license for the Rumford Falls Hydroelectric Project. RFPC is a totally-owned subsidiary of the Boise Cascade Corporation (Boise Cascade).

The present estimated capacity requirement of the Mill is 85 MW. The total installed capacity of the project is 39.35 MW. Therefore, as long as the Mill is operating at its present capacity --and even if substantial peak reduction measures are implemented-- the Mill's demand for electricity will always exceed the supply available from the project.

The Rumford Hydropower Project was licensed by the Federal Energy Regulator Commission (Commission) on May 14, 1965, but its Upper Station has been generating electricity since 1903. Its Lower Station was added in 1954.

The pulp and paper products industry is highly competitive and is an energy-intensive industry. Boise Cascade's competitive

position depends heavily on the availability of a reliable and adequate source of low-cost electric power. The 90-year and 39-year periods during which the Upper Station and Lower Station have supplied the Mill with low-cost hydropower energy have been an important factor in Boise Cascade's ability to survive and grow. The operating history of the Rumford Falls Hydroelectric Project has established, in adequate fashion, both the short term and long term needs for the electricity generated by the project.

III. PROPOSED PROJECT AND ALTERNATIVES

A. Proposed Project

The existing constructed project consists of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The upper station and the lower station developments each have a total installed nameplate capacity of 26.55 MW and 12.8 MW, respectively, totaling 39.35 MW; the project's maximum hydraulic capacity is 7,300 cubic feet per second (cfs); and the average annual project generation is about 270,302 MWh.

Upper Station Development:

The Upper Station Development consists of: 1) a concrete gravity dam, having a 464-foot-long by 37-foot-high ogee type spillway section, with a crest elevation of 598.74 feet U.S. Geological Survey datum (USGS), topped with 2.5-foot-high, pin-supported, wooden flashboards; 2) a forebay about 2,300 feet long by 150 feet wide; 3) a gatehouse with eight headgates, (two headgates for each of the four penstocks), trashracks, and other appurtenant equipment; 4) four underground steel-plate penstocks, each about 110 feet long, three of which are 12 feet in diameter, and one 13 feet in diameter; 5) a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, about 30 feet wide by 120 feet long by 92 feet high, equipped with one horizontal generating unit with capacity of 4,050 kilowatts (kW), and (b) the New Station, about 60 feet wide, by 140 feet long, by 76 feet high, equipped with three vertical generating units--two with capacity of 7,650 kW each, and one with capacity of 7,200 kW; 6) an impoundment, with gross storage capacity of 2,900 acre-feet, surface area of about 419 acres, normal maximum headwater elevation of 601.24 feet, and tailwater elevation of 502.74 feet; 7) four overhead 11.5-kilovolt (kV) transmission lines extending from the upper station to the mill, (a) two lines being 6,000 feet long, (b) another being 5,400 feet long, and the last 5,200 feet long; and (8) appurtenant facilities.

Lower Station Development:

The Lower Station Development consists of: 1) a rock-filled, wooden-cribbed, and concrete-capped Middle Dam, having a 328.6-foot-long by 20-foot-high gravity spillway section, with a crest elevation at 501.74 feet, topped with 1.0-foot-high pin-supported wooden flashboards; 2) a Middle Canal concrete headgate structure, located adjacent to the dam, about 120 feet long, with 10 steel headgates, and a waste weir section perpendicular to the headgate structure, about 120 feet long, with a crest elevation of 501.6 feet; topped with 10-inch-high flashboards; 3) a Middle Canal, about 2,400 feet long, with width ranging from 75 to 175 feet, and depth from 8 to 11 feet; 4) a gatehouse containing two headgates, trashracks, and other appurtenant equipment; 5) two 12-foot-diameter, steel-plate penstocks, each extending about 815 feet to two cylindrical surge tanks, each about 36 feet in diameter by 50.5 feet high, and the penstocks continuing 77 feet to the powerhouse; 6) a masonry powerhouse, equipped with two identical vertical units each 6,400 kW capacity; 7) an impoundment, with gross storage capacity of 141 acre-feet, surface area of about 21 acres, normal maximum headwater elevation of 502.74 feet and tailwater elevation of 423.24 feet; 8) the 600-foot-long, 11.5-kV generator leads, extending from the Lower Station to Substation No. 5; and 9) appurtenant facilities.

B. Proposed Mitigative Measures

1. Construction: No construction is proposed.

2. Operation: RFPC proposes to: (1) operate the project in a run-of-river mode for the protection of water quality and aquatic habitat; (2) maintain water levels in the upper and middle impoundments within 1.0 foot of full pond elevation; (3) protect historic resources by implementing a programmatic agreement for the management of historic properties; and (4) enhance recreational access by developing two carry-in canoe facilities.

C. No Action Alternative

The no-action alternative is the continued present operation of the project. The project would continue to operate as required by the original project license without change to the current environmental setting. No alterations or enhancements from the existing baseline resources would be made.

IV. CONSULTATION AND COMPLIANCE

A. Agency Consultation

The following entities commented on the application subsequent to the public notice, which was issued on November 17,

1992. All comments become part of the record and are considered during our analysis of the proposed project.

Commenting agencies and other entities	Date of letter
Department of the Interior	January 21, 1993
Department of the Army, Corps of Engineers	January 6, 1993
Maine Department of Environmental Protection	December 17, 1992

The applicant filed reply comments by letters dated January 28, 1993, and March 1, 1993.

In addition to providing comments, organizations and individuals may petition to intervene and become a party to any subsequent proceedings. The following entities filed a motion to intervene in the proceedings.

Intervenors	Date of motion
Maine State Planning Office	January 7, 1993
Trout Unlimited, et. al. (opposed)	January 15, 1993
Conservation Law Foundation, et. al.	January 14, 1993

The applicant responded to the interventions by letters dated January 28, 1993, and March 1, 1993.

B. Water Quality Certification

RFPC completed application for a Section 401 Water Quality Certificate (WQC) on January 2, 1992. RFPC received a WQC from the State of Maine Department of Environmental Protection (MDEP), as required by the Clean Water Act, on December 17, 1992. This WQC, issued by the MDEP within one year of the receipt of the completed WQC application, is considered valid.

The WQC requires that 1) the Rumford Falls Project operate in a run-of-river mode (outflow equals inflow) while maintaining a minimum flow in the river immediately downstream of the tailrace of 1,034 cfs or inflow, whichever is less; 2) except for approved maintenance or emergencies beyond the applicant's control, the water levels in the upper impoundment be maintained within 1.0 foot of full pond elevation of 601.24 feet USGS (top of flashboards), and water levels in the middle dam impoundment be maintained within 1.0 foot of full middle pond elevation of 502.74 feet USGS (top of flashboards); 3) the applicant submit plans for providing and monitoring the water levels in the upper and middle impoundments; and 4) the applicant provide a public

carry-in canoe access point below the project with parking for six to twelve vehicles and work jointly with others to seek and support future development of carry-in canoe access.

We agree that the first three conditions in the WQC are needed to protect water quality in the Androscoggin River and, as discussed in Section V.B.2, they should be included in any license issued for the Rumford Falls Project. Condition 4, which requires recreational canoe access, has no effect on water quality and we do not believe it is a valid condition to include in a WQC. However, as discussed in Section V.B.7, we recognize the merits of this request and recommend that it be included in any license issued for Rumford Falls Project.

V. ENVIRONMENTAL ANALYSIS

A. General Description of the Locale

1. Androscoggin River Basin.

The Androscoggin River Basin is located in western Maine and northeastern New Hampshire. From the total drainage area of 3,450 square miles, approximately 2,730 square miles are located in Maine and remaining 720 square miles in New Hampshire. The Androscoggin River Basin is about 110 miles long and 65 miles wide.

The Androscoggin River is formed by junction of the Magalloway and Rapid Rivers at Errol dam which is at the outlet of Umbagog Lake, New Hampshire. From this point the river flows south turning sharply to the east near Gorham, New Hampshire. A short distance upstream from Livermore Falls, Maine, the river turns sharply again to flow south to its outlet in Merrymeeting Bay, eight miles below the head of tidewater at Brunswick, Maine. Between Umbagog Lake and tidewater at Brunswick the river falls a total of 1,245 feet in 161 miles, an average slope of 7.7 feet per mile.

The principal tributaries are the Cupsuptic, Kennebago, Magalloway and Dead Diamond above Umbagog Lake; and the Ellis, Swift, Webb, Dead, Nezinscott and the Little Androscoggin River, all below Umbagog Lake.

The river corridor has been heavily developed for paper production, and related industries. Upstream, the basin is mainly forested and includes five large storage reservoirs, which have been managed to regulate river flow since the late 1800's. The Androscoggin River's flow and storage is managed under a 1909 agreement for power and manufacturing purposes. Throughout the long history of industrial and urban development, a large portion of the natural areas have been drastically changed by construction of dams and associated hydroelectric and

hydromechanical facilities, and for various mill buildings and yards, roadways, railroad beds, bridges, and other industrial, residential, and civil structures. Flatter areas in the basin have been farmed. Historically, water quality was severely degraded in the area due to industrial and municipal waste discharges.

Staff is preparing an environmental impact statement (EIS) for seven projects in the Upper Androscoggin River Basin. The potential for the interaction of water uses to cumulatively affect target resources diminishes with distance between them. This is particularly true for the target resources in the Androscoggin Basin, e.g., water quality and resident salmonids. The seven projects included in the EIS are all located within an 11-mile long reach of the Androscoggin River; the Rumford Falls Project is about 35 miles downstream of the Shelburne Project (the lowest project in the Upper Androscoggin River Basin). Therefore, the Rumford Falls Project is not included in the EIS, and staff has prepared this separate site-specific EA for the project; however, this EA addresses the cumulative effects of the Rumford Falls Project on target resources.

2. Proposed and Existing Hydropower Development.

The Androscoggin River Basin has several hydroelectric projects. We have compiled a list of existing and potential major licenses, minor licenses, and exempted projects in the basin as well as the operating unlicensed projects as of January 13, 1993. Those projects are as follow:

Type	Number	Capacity
Existing:		
Major Licenses	19	255,756 kW
Minor Licenses	4	3,930 kW
Exemptions	10	1,828 kW
Unlicensed	3	2,970 kW
Total:	36	264,484 kW
Pending:		
Minor License Appl.	1	115 kW

3. Target Resources. A target resource 1/ is an important

1/ The Council on Environmental Quality defines cumulative impacts as impacts on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually

(continued...)

component of the environment that may be cumulatively affected by the proposed action and in conjunction with other developmental activities within the river basin. We identified two target resource in the Androscoggin River Basin: (1) resident salmonid fish and (2) dissolved oxygen (DO).

The Rumford Falls area of the Androscoggin River currently supports no resident populations of anadromous fish, however, anadromous fish do occur upstream of Rumford Falls, near Berlin New Hampshire. Landlocked Atlantic Salmon, brook trout and brown trout have been stocked by the New Hampshire Fish and Game Department in the Androscoggin River approximately 15 miles upstream of Berlin. We conclude that the Rumford Falls Project's cumulative impact to salmonids in the Androscoggin River Basin would be negligible because only small numbers of fish which migrate downstream from upstream areas could potentially be affected.

DO is an important water quality parameter and a key determinant of a river's waste assimilative capacity. Concern for DO levels in the Androscoggin River is based on the combined effect of existing wastewater treatment facility discharges and the potential loss of aeration due to reservoir stratification and/or reduced spillage at project dams as a result of flow diversions for hydropower production.

Water quality studies conducted by RFPC show that significant increases in DO would not be realized by modifying the operating mode of the project (i.e., providing additional flows over the spillway of the dam). In addition, DO concentrations and associated percent saturations indicate the state standard for Class C waters 2/ is currently met in the project area. The MDEP and U.S. Fish and Wildlife Service (FWS) agree with the conclusions of water quality analyses conducted by RFPC.

Based on operating the project in a run-of-river mode and maintaining a 1,034 cfs flow, or inflow, downstream of the tailrace of the project, we conclude that the proposed Rumford Falls Project's contribution to adverse cumulative impacts on DO in the river basin would be negligible. DO conditions in the project area are described below in section F.2. The project's

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1/(...continued)
minor, but collectively significant actions taking place over a period of time (40 CFR, Part 1508.7).

2/ Suitable for 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.

impact on DO is discussed in section G. Any effects that the seven upstream EIS projects may have on the Rumford Falls Project will be addressed in the EIS, but any effects are expected to be insignificant because those projects are 35 miles upstream.

B. Proposed Project

We reviewed the proposed project in relation to the environmental resources in the project impact area and conclude that there would be no direct or indirect adverse environmental effects on terrestrial resources, because no change in the run-of-river operation is proposed, no construction affecting terrestrial resources is proposed, and no enhancement measures were recommended by the resource agencies.

1. Geological Resources

To minimize localized soil erosion, sedimentation, and stream turbidity, we recommend that RFPC develop and implement a soil erosion and sedimentation control plan for construction of the proposed canoe access facilities.

Affected Environment: The regional geology near the project consists of mountainous uplands in the northern extension of the Appalachian Mountain system. General elevations of the hills and mountains near the project range from 1,000 to 1,500 feet. The local bedrock geology includes predominant mudstone and sandstone. Surface deposits in the project area include glacial till composed of clay, silt, sand, and stone. The soils surrounding most of the upper dam impoundment are poorly drained to well drained and formed in alluvium. The soils have a loamy surface layer underlain by sandy material, and are subject to occasional flooding.

Many areas along the upper dam impoundment have few trees protecting the shoreline. The impoundment intersects unstable alluvium in some areas, and as a result, wave action, rafted ice, and flood currents cause minor, local erosional undermining of the riverbanks.

Environmental Impacts and Recommendations: RFPC proposes no plans for future development which would affect the geological resources. RFPC's proposal to construct a canoe access facility upstream and downstream of the project boundary could result in increased soil erosion and sedimentation in affected waters. Implementing proper safeguards would minimize these potential adverse impacts.

Therefore, we recommend that the Licensee develop and implement a soil erosion and sedimentation control plan in consultation with the Soil Conservation Service (SCS) and MDEP, and file the plan with the Commission for approval before the

start of any construction activities. We believe that implementing this plan would minimize localized soil erosion, sedimentation, and stream turbidity.

Unavoidable Adverse Impacts: The shoreline erosion and slumping that currently occurs at the upper dam impoundment, would continue to occur with the proposed operation mode. These adverse impacts are minor in nature, and unavoidable.

2. Water Resources

Affected Environment:

a. Streamflow. Flows at the Rumford Falls Project are controlled by a series of six natural lakes and storage dams located in the headwaters of the Androscoggin River. These storage systems, which are operated by the Union Water Power Company and the Androscoggin Reservoir Company, are used to capture the majority of spring run-off for consistent release throughout the year, and to provide a minimum release of at least 1,550 cfs at Berlin, New Hampshire at all times. As a result of this flow regulation, a minimum release of approximately 1,600 cfs has been maintained at Rumford, Maine, about 97 percent of the time over the last 50 years of record.

The Upper dam, with 2.5-foot-high flashboards, creates a 419-acre impoundment with a water surface elevation of 601.24 feet and depths ranging from 10 to 25 feet. The Middle dam, with 1.0-foot-high flashboards, creates a 21-acre impoundment with a water surface elevation of 502.74 feet.

The following flows for the Rumford Falls Project are based on data collected at the Rumford stream flow gage (USGS stream flow gage No. 01654500) located immediately downstream of the lower station tailrace:

- Mean annual flow (based on 1901 to 1981 records): 3,727 cfs
- 7-consecutive-day average low flow expected to occur once every 10 years (7Q10): 1,295 cfs
- Minimum recorded flow: 625 cfs on March 27, 1911
- Maximum recorded flow: 74,000 cfs on March 20, 1936
- Aquatic base flow (ABF): 1,034 cfs

Upper Dam bypassed reach. The Upper Dam bypassed reach consists of exposed bedrock over which water, from leakage and spillage over the dam, flow at a steep gradient. The bypassed reach is 650 feet long, and leakage from the dam provides a base flow of about 1 cfs (as measured during the summer months). The turbine capacity of the Upper Station is 4,500 cfs and spillage over the dam into the reach (resulting from inflows exceeding turbine capacity) occurs about 21 percent of the time or about 76 days per year.

Middle Dam bypassed reach. The Middle Dam bypassed reach includes a long narrow pool, bedrock outcroppings, and steep cascades. The bypassed reach is 2,865 feet long. Leakage from the dam provides a base flow of about 21 cfs (as measured during the summer months). The turbine capacity of the Lower Station is 2,800 cfs and the Boise Cascade Mill uses 100 cfs of the canal flow for process water. Spillage over the dam into the reach (resulting from inflows exceeding turbine capacity plus the mill flow) occurs approximately 45 percent of the time or about 165 days per year.

b. Water Quality. Historically water quality has been severely degraded in the project area due to municipal and industrial waste discharges. The installation of wastewater treatment facilities in the mid-1970's, however, has contributed to improved water quality. Municipal and industrial discharges (pulp and paper mills) immediately upstream and downstream of the project include the following:

- James River's Burgess and Cascade Mills (industrial, upstream)
- City of Berlin (domestic, upstream)
- Town of Gorham (domestic, upstream)
- Boise Cascade Corporation (industrial, downstream)
- Rumford Mexico Sewage District (domestic, downstream)
- International Paper (industrial, downstream)
- Town of Livermore Falls (domestic, downstream)

The MDEP designates the Androscoggin River in the area of the proposed project as Class C. For Class C waters DO concentrations should be 5.0 milligrams per liter (mg/l) or 60 percent of saturation, whichever is greater. Class C waters should be suitable for a drinking water supply after treatment, fishing, recreation, and industrial use. Upstream of the Rumford Falls Project, well outside the project boundary, the Androscoggin River is rated Class B, requiring DO concentrations of 7.0 mg/l or 75 percent saturation.

RFPC reviewed existing water quality data collected upstream and downstream of the Rumford Falls Project. The Department of Interior (Interior) and the MDEP agree with RFPC's findings that DO and percent saturations in the Rumford Falls impoundments and tailraces consistently meet Class C requirements. In addition, the MDEP indicated, with the exception of a few samples in July and August, water quality in the project area also meets the more stringent Class B state standards.

Environmental impacts and recommendations:

RFPC proposes to: (a) operate the Rumford Falls Project in a run-of-river mode such that a minimum flow of 1,034 cfs is maintained downstream of the tailrace of the project; and (b)

maintain constant water surface elevations in the upper and middle headponds (within operational limitations). RFPC proposes no changes in flows over the upper and middle dams because water quality, fishery, and aesthetics management objectives are being met under the current project operation. Interior, the FWS, the Maine Department of Inland Fisheries and Wildlife (MDIFW), and the MDEP agree with RFPC's operation proposal. The MDEP included these conditions in the WQC issued for Rumford Falls.

a. Run-of-river operation. The WQC issued for the Rumford Falls Project requires that the project be operated run-of-river. Operating in a run-of-river mode would protect aquatic habitat, and fisheries by minimizing fluctuations of water surface levels both upstream and downstream of the project. Run-of-river would reduce the potential for resuspension of contaminated bottom sediments by minimizing fluctuations which can resuspend particulate matter; contaminated bottom sediments would remain in their present locations and continue to be "locked-up" in the impoundment sediments. Run-of-river operation would also assure that hydropower projects and industrial and municipal water facilities located immediately upstream and downstream are not affected by operation of Rumford Falls. Therefore, we recommend that the Licensee be required to operate the project in this manner.

b. Reservoir Fluctuations. The WQC issued for the Rumford Falls Project requires that impoundment levels be maintained within 1 foot of full pond elevations, 601.24 feet in the upper impoundment and 502.74 feet at the middle impoundment. Under the run-of-river operation, daily water surface elevations in the project reservoirs would be stable, within operational limitations. High spring flows, the small storage capacity of the reservoirs, and operation limitations occasionally cause short-term impoundment fluctuations as the project turbines are adjusted to meet changes in river flows. Flow records for 1986 to 1988 (36 months) show that fluctuations were less than 0.5 feet for 30 months, about 0.5 feet for 3 months, and between 0.66 feet and 0.93 feet for 3 months (primarily from naturally occurring high flows).

These fluctuations are short in duration and do not significantly affect flows upstream or downstream of the project. The FWS and MDIFW agree with RFPC that these fluctuations have no significant adverse impact on the fisheries and aquatic resources.

We agree with the agencies that the present reservoir fluctuations have no adverse impact on flows or aquatic resources in the project area. Therefore, we recommend that the Licensee be required to maintain the upper impoundment at 601.24 feet USGS and the lower impoundment at 502.74 feet USGS and take every precaution to minimize fluctuations and to assure the

impoundments are maintained within 1 foot of full pond elevation at all times.

c. Flow monitoring. The FWS and MDEP require a flow monitoring plan to monitor: compliance with provisions for run-of-river operation, impoundment levels, flows in the bypassed reaches, and the minimum flow required immediately downstream of the project tailrace. We agree that a plan, which outlines procedures for monitoring the above conditions, is necessary. Therefore, we recommend the Licensee file with the Commission, for approval, a stream flow monitoring plan. This plan should be developed in consultation with the FWS, MDEP, MDIFW, and USGS, and should indicate methods of data collection, describe the location, design, and calibration of monitoring equipment if needed, and include provisions for providing available operation, flow, and water surface elevation data to the consulted agencies within 30 days of the agencies' request.

d. Minimum flows in the upper and middle bypassed reaches. Currently, flows in the upper and middle bypassed reaches are provided by spillage at the dam during high flow periods, and leakage. Leakage in the upper reach is approximately 1 cfs and leakage in the lower reach is approximately 21 cfs. RFPC conducted studies to identify the status of fisheries habitat in the bypassed reaches and water quality in the project area. RFPC also evaluated the need for additional spill flows to provide for water quality, aquatic habitat, and aesthetic resources. Water quality is discussed below. Aquatic habitat and aesthetics are discussed in Sections V.B.3. and V.B.5., respectively.

RFPC conducted a water quality study in consultation with the MDEP. The study "Characterization of Existing Dissolved Oxygen Regime and Assessment of Appropriateness of Reaeration at the Rumford Falls Hydro Project" used both historical and newly collected water quality data. The study shows that Class C DO criteria are currently maintained within the Rumford Falls Project boundary. Therefore, spill flows are not needed at the upper and middle dam to meet the state standard.

RFPC's study also shows that periodically, during the summer critical temperature and flow periods, DO does not meet the minimum DO criteria about 40 miles downstream of Rumford Falls at Gulf Island Pond. Spill flows at Rumford Falls, however, would have little effect on DO levels 40 miles downstream of Rumford Falls. This conclusion is supported by MDEP's observation that because of relatively high DO levels above the project, only a small increase in DO (less than 1 mg/l) could be realized downstream of Rumford Falls, even with substantial spillage (50% of inflow).

In a Motion to Intervene, dated January 14, 1993, American Rivers, the Appalachian Mountain Club, the Conservation Law

Foundation, and the Maine Audubon Society (CLF) requests that RFPC 1) take mitigation measures that help restore lost oxygen content in waters downstream of the project and the Boise Cascade's paper mill discharge located downstream of the project; 2) provide mitigation that brings the project into compliance with Maine's water quality standards to restore designated and beneficial uses; and 3) study the effects of mercury, dioxin and other pollutants in the project waters and take remedial action, if necessary.

On January 15, 1993, Trout Unlimited, Maine Council of Trout Unlimited, Atlantic Salmon Federation, and the Maine Council of Atlantic Salmon Federation (TU) jointly filed a timely motion to intervene in opposition to this proceeding. TU states in its intervention that the project waters are foul and that the water quality is very poor due to hydropower operations and other reasons, a system wide assessment of impacts on the Androscoggin River is warranted and the preparation of an EIS is necessary, and the Commission should hold an adjudicatory hearing. Staff is preparing an EIS for seven projects in the Upper Androscoggin River Basin. The potential for the interaction of water uses to cumulatively affect target resources diminishes with distance between them. This is particularly true for the target resources in the Androscoggin Basin, e.g., water quality and resident salmonids. The seven projects included in the EIS are all located within an 11-mile long reach of the Androscoggin River; the Rumford Falls Project is about 35 miles downstream of the Shelburne Project (the lowest project in the Upper Androscoggin River Basin). Therefore, the Rumford Falls Project is not included in the EIS, and staff has prepared this separate site-specific EA for the project; however, this EA addresses the cumulative effects of the Rumford Falls Project on target resources.

CLF stated that no DO data from downstream of both the Rumford Falls Project and Boise Cascade's paper mill discharge appears in the application. In fact, the application shows that RFPC sampled DO at station 16, the lower foot bridge, which is located about 200 feet downstream of the Boise Cascade mill outfall. For four collection dates in August and September, 1988 the lowest DO ranged from 7.9 mg/l to 8.9 mg/l, saturation ranged from 89 percent to 93 percent, and the DO deficit ranged from 0.6 mg/l to 1.0 mg/l. Thus, DO was well above the state standard and the potential for improvement was low.

CLF's and TU suggest that Rumford Falls is not in compliance with Maine's water quality standards. In fact, the FWS and the MDEP, in their WQC issued December 17, 1992, conclude otherwise.

CLF's request that RFPC study mercury and dioxin and take remedial action is not warranted. As discussed in Section A, operating the project run-of-river, as proposed by RFPC, is an

effective way to minimize disruption of sediments in the project area.

We disagree with CLF's and TU's recommendations concerning water quality because we believe they are based on outdated information and are not supported by the most recent information available. The MDEP and FWS agree with the results of RFPC's water quality study and conclude that no additional flows would be needed at the upper and middle dams. We reviewed the water quality studies conducted and agree that DO is near saturation upstream of the Rumford Project and only small increases in DO could be achieved from spillage at the dam. Water quality consistently meets and exceeds the management requirements in the project area. We conclude that current project operation would maintain water quality in the project area consistent with Maine's water quality management objectives for this reach of the Androscoggin River. Therefore, we see no need for additional flow releases from the upper and lower dams.

Unavoidable Adverse Impacts: No significant impacts to water resources would occur. Only minor losses in DO concentrations would occur as a result of project operation.

3. Fishery Resources

Affected Environment: The fishery in the project area consists of warmwater and coolwater fish communities. Fish collected in the Androscoggin River include chain pickerel, golden shiner, fallfish, white sucker, brown bullhead, pumpkinseed, yellow perch, common shiner, longnose dace, and occasional trout species. Fallfish, common shiner, white sucker, and yellow perch are the predominant species in the upper impoundment of Rumford Falls.

Between 1986 and 1989 approximately 20,000 4- to 6-inch brook trout and 12,000 4- to 6-inch brown trout were stocked in the Androscoggin River, between Bethel and Livermore Falls, by the MDIFW. The MDIFW discontinued stocking brown trout and brook trout in 1991, primarily due to high levels of dioxin contamination, making fish consumption questionable from a health perspective, and a 1987 creel survey which showed little fishing activity.

Environmental Impacts and Recommendations:

a. Instream flows in the bypassed reach:

RFPC studied aquatic habitat and flows in the upper and middle bypassed reaches. The study "Field Investigations at the Bypassed Reaches of the Rumford Falls Project" assessed the flow characteristics, quality of aquatic habitat, and management objectives for the bypassed reaches. RFPC's study shows that the

steep gradient, substrate, and lack of safe access limit the fishery management opportunities in these bypassed reaches. Therefore, spill flows for fisheries at the upper and middle dam are not being proposed by RFPC.

The MDIFW and FWS agree with the results of RFPC's fishery habitat study. The agencies conclude that, under the present fisheries management programs, the present leakage (estimated at 1 cfs in the upper reach and 21 cfs in the middle reach) and occasional spillage at the two dams are adequate; no additional flows are needed at the upper dam and middle dam for the purpose of providing additional fishery habitat in the bypassed reaches. The FWS notes, however, that long-range plans, which call for the restoration of Atlantic salmon in the Androscoggin River up to Rumford Falls, may require that flows in the middle reach be addressed in the distant future.

We reviewed the aquatic habitat studies and fishery management goals and conclude that no additional minimum flow releases are needed at the upper and middle dams for enhancement purposes. The existing flow conditions in the bypassed reaches, which are currently maintained by leakage and spillage in excess of project capacity, provide adequate habitat to support the agencies' current fishery management objectives. Therefore, we recommend that the Licensee continue to provide flows in the bypassed reaches equivalent to present leakage; 1 cfs in the upper reach and 21 cfs in the middle reach. In addition, all flows in excess of project capacity, should be released in the upper and middle bypassed reaches of the Androscoggin River.

b. Fish Passage and Fish Protection: The MDEP, Atlantic Sea Run Salmon Commission (ASRSC), and Interior do not currently require facilities specifically designed to pass fish upstream or downstream at Rumford Falls. Interior indicates that the passage of fish at Rumford Falls dam is not currently a management objective for the Androscoggin River, therefore, Interior does not recommend upstream or downstream fish bypass facilities at this time.

Should management objectives for the Androscoggin River change, fish passage facilities may be needed in the future. Therefore, Interior requests that Section 18 reservation of authority be placed in any license issued for the Rumford Falls Project. Section 18 of the Act provides the Secretary of Interior the authority to prescribe fishways. 3/ Although fish

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3/ Section 18 of the Federal Power Act provides: "The Commission shall require construction, maintenance, and operation by a licensee at its own expense ... such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior as appropriate."

passage facilities may not be recommended by Interior at the time of project licensing, as is the case for the Rumford Falls Project, the Commission should include license articles which reserve Interior's prescription authority. 4/ We recognize that future fish passage needs and management objectives cannot always be predicted at the time of license issuance. Under these circumstances, and upon receiving a specific request from Interior, it is appropriate for the Commission to reserve Interior's authority to prescribe fishways.

TU states in its intervention that the project has significant effects on resident fish and wildlife. We disagree; considering the limited fishery management objectives and the discontinued stocking of trout in the project area, any continuing impact to the fishery is not expected to be significant.

Unavoidable Adverse Impacts: Entrainment and impingement of resident fish would continue at existing levels under the proposed operations. At this time the agencies do not require additional measures to reduce entrainment. Trashracks have been used at hydropower plants to deter fish from entering intakes. The upper development at Rumford is equipped with 3-inch open spaced coarse trashracks and 2.5-inch open spaced fine trashracks. The lower development has about 2.6-inch open spaced trashracks. While these spacings would prevent entrainment of larger fish that would have the greatest risk of turbine injury or mortality, some project-related fish mortality, particularly for smaller fish, would continue. In consideration of the limited fishery management objectives for the project area and recently discontinued stocking of trout in the project area, the impact to the fishery is not deemed to be significant.

4. Threatened and Endangered Species

Affected Environment: The project is within the range of the bald eagle (Haliaeetus leucocephalus) and the peregrine falcon (Falco peregrinus anatum), which are both Federally listed as endangered. The FWS states that, no Federally listed or proposed threatened and endangered species under the jurisdiction of FWS are known to occur in the project area, with the exception of occasional, transient, endangered bald eagles and peregrine falcons and further consultation with FWS under Section 7 of the Endangered Species Act is not required (letter from Gordon E. Beckett, Field Supervisor, New England Field Office, U.S. Fish and Wildlife Service, Concord, New Hampshire, June 16, 1992).

4/ Lynchburg Hydro Associates, 39 FERC ¶ 61,079 (1987).

Environmental Impacts and Recommendations: We conclude that continued project operation is not likely to adversely affect any Federally listed or proposed threatened and endangered species.

Unavoidable Adverse Impacts: None.

5. Aesthetic Resources

The natural cascades within the bypassed reaches are the prominent aesthetic resources at the project. We believe that increasing the frequency of spillage in the bypassed reaches would not result in any appreciable aesthetic benefits, and requiring minimum flows is not recommended.

Affected Environment: The project facilities and the middle dam impoundment are situated in a relatively developed river setting, and have been part of the Rumford, Maine, environment for nearly 100 years. The upper dam impoundment is bordered by forested wetlands and farmlands which offer scenic views from the nearby roads.

Flows and aquatic habitat in the upper and middle bypassed reaches are discussed in detail in section V.B.3. The 650-foot-long bypassed reach below the upper dam consists of exposed bedrock over which water, from spillage and leakage, flows at a steep gradient. The 2,865-foot-long bypassed reach below the middle dam includes a long narrow pool, bedrock outcroppings, and steep cascades. The natural cascades within the bypassed reaches are the prominent aesthetic resources at the project, and offer scenic views below the middle dam and limited views below the upper dam. Views of the cascades within the upper bypassed reach are obstructed because of the upper dam station and forebay wall along Route 2. Views of the cascades within the middle dam bypassed reach are offered at the Memorial Bridge, looking both upstream and downstream.

Environmental Impacts and Recommendations:

In 1989, RFPC conducted a field investigation to evaluate the appropriate flow requirements needed to protect physical and biological quality of the bypassed reaches. RFPC concluded that additional flows are not warranted in the bypassed reaches of the Androscoggin River below the upper station and middle dam. The project would continue to operate in a run-of-river mode with no appreciable water storage. The FWS and MDIFW agree with RFPC's proposal for no minimum flows to the two bypassed reaches.

CLF, in a Motion to Intervene, dated January 14, 1993, requests that RFPC provide mitigation that helps restore the lost aesthetics of dewatering the bypassed reaches. We believe CLF's recommendation is based on pre-project conditions, rather than the existing conditions at the proposed project. The views of

the upper dam bypassed reach are obstructed, and the infrequent spillage has no significant effect on the visual resources. The industrialized setting of the cascades in the middle dam bypassed reach reduces the necessity to enhance the scenic views offered from the Memorial Bridge. In a typical year, the proposed spillage over the middle dam amounts to 165 days, and leakage provides sufficient flows over the cascades during the remaining days. Therefore, we believe that the existing flows in the bypassed reaches are adequate to maintain the scenic views of the natural cascades.

In addition, we reviewed photograph and videotaped documentation of the bypassed reaches with flows of 20, 30, and 40 cfs at the Middle Dam and 10, 20, and 40 cfs at the Upper Dam. We conclude that increasing the frequency of spillage in the bypassed reaches would not result in any appreciable aesthetic benefits, and requiring minimum flows is not recommended.

6. Cultural Resources

Affected Environment: In the summer of 1988, RFPC conducted an archeological study of the upper dam impoundment shoreline. The study was designed to identify archeological sites meriting a determination of eligibility for listing on the National Register of Historic Places. This was followed by a 1989 study designed to determine eligibility. These studies revealed that the following eight prehistoric sites are eligible (i.e., they are "historic properties"):

- Town of Rumford (ME 49-20)
- Rumford Falls I (ME 49-24)
- Rumford Falls II (ME 49-25)
- Rumford Falls III (ME 49-26)
- Rumford Falls IV (ME 49-27)
- Rumford Falls V (ME 49-28)
- Smith I (ME 49-9)
- Smith II (ME 49-10)

No evaluation of the eligibility of the project facilities was conducted in the course of these studies. However, late in the application review, the Maine Historic Preservation Commission (MHPC) recommended a formal evaluation of the project facilities to determine their eligibility (personal communication, Kirk Mohney, Maine Historic Preservation Commission, Augusta, Maine, December 14, 1992).

Environmental Impacts and Recommendations: RFPC proposes an archaeological mitigation plan for six of the eight eligible sites. Due to landowner opposition, the plan contained no provision for mitigating effects at sites Smith I and Smith II.

The Commission, the MHPC, and the Council, executed a Programmatic Agreement (Agreement) stipulating an eligibility evaluation for the project facilities, contingency measures for handling historic properties discovered during the license term, and implementation of the archeological mitigation plan.

The only land-disturbing activity proposed is the development of a downstream canoe access point at the Carlton Bridge site. By letter dated July 17, 1992, the MHPC determined that no properties at the proposed canoe access site are of any historic, architectural, or archaeological significance.

Relicensing the Rumford Falls Project would afford protection to six of the eligible archaeological sites near the upper dam impoundment and to any historical properties in the project boundaries later determined eligible. There is still the possibility that undiscovered properties exist in the project area, and project development or operation could affect such properties. In addition to this possibility, any project-related construction or ground-disturbance undertaken in the future, that we have not already considered, could affect historic properties in currently unforeseen ways. In both instances, the Agreement would mandate that the Licensee consult further with the MHPC to protect historic properties.

TU states in its intervention that the project adversely affects cultural and archeological resources. TU did not make specific comments as to what cultural and archeological resources are adversely affected. For the reasons listed above we disagree that the project would adversely affect cultural and archeological resources.

Unavoidable Adverse Impacts: None.

7. Recreation and Other Land and Water Uses

To enhance the recreational opportunities, RFPC proposes to develop canoe access facilities above and below the project. We believe these facilities would satisfy the identified recreational needs in the project area.

Affected Environment: Boating and fishing are the primary recreational activities at the project site. A recreational use study conducted by RFPC in 1992 revealed that recreational use in the project area is limited and comprised of local residents. Most of the recreational use occurs on the upper dam impoundment. The existing public recreational facilities along this impoundment include the Logan Brook access, an unimproved boat launch located along the south shore off South Rumford Road; and a trailered boat launch located along the north shore off U.S. Route 2.

In 1991, RFPC helped in developing a canoe access facility in Gilead, Maine, 25 miles upstream of the project boundary. The boat launch at the upper dam impoundment provides a termination point for canoe trips along this segment of the river.

Fishing access to the middle dam impoundment is provided near the Rumford information booth. Boating is uncommon on this impoundment because of its size. Access to the tailrace areas and bypassed reaches is limited to shoreline fishing along the western shoreline at the lower station tailrace.

RFPC maintains a buffer zone above the upper dam impoundment that extends about 1 mile along both shorelines. The buffer zone is 10 to 800 feet wide, and is accessible to the public from either U.S. Route 2 or Maine Route 120. Most of the remaining land adjacent to the shoreline and within the project boundary is owned by private individuals and the Town of Rumford. In addition, the state of Maine has a mandatory shoreline zoning ordinance that regulates a 250 foot buffer zone. 5/

Land in the general vicinity of the project facilities is considered urban, and use is primarily industrial and commercial. Along the upper dam impoundment the land is rural, and primarily used for agriculture.

Environmental Impacts and Recommendations: RFPC proposes to develop a canoe access facility downstream of the project boundary at the Carlton Bridge, and would continue maintaining the existing recreational areas at the project. RFPC also proposes to work with the Town of Rumford, the Maine Department of Conservation (MDOC), and the Friends of the Androscoggin, in supporting the future development of a carry-in canoe access point at Rumford Point, Maine, 10 miles upstream of the upper dam. RFPC's proposal to enhance canoeing opportunities is consistent with the State Comprehensive Outdoor Recreation Plan (Maine Department of Conservation, 1988). The plan identifies the need for additional canoe access in the project area on the western portion of the Androscoggin River.

During prefiling consultations the MDIFW and the FWS requested RFPC to investigate the need for additional public access for fishing in the tailrace areas. In response, RFPC recommended no additional access in these areas because of safety concerns. Also, RFPC's study of the bypassed reach concluded that because of the minimal fishery potential, additional fishing access would be unwarranted. (see section V.B.3.). Agencies agree.

5/ Title 38 of the Maine Revised Statutes Annotated, Section 435-446, 1992.

CLF's Motion to Intervene, dated January 14, 1993, recommends that RFPC provide a buffer zone around the entire project area, and mitigation that helps restore lost recreational access to the bypassed reaches. We believe that further access to the bypassed reaches is not warranted because of safety concerns related to the steep and rocky slopes along both banks and the poor fishing opportunities resulting from discontinuation of trout stocking (see section V.B.3.). We also believe that Maine's Mandatory Shoreland Zoning Act adequately protects public access and any undeveloped lands in the project area.

TU states in its intervention that the project has significant effects on recreation. For the reasons cited above we believe that the project has minimal impact on recreational fishing. RFPC would enhance recreational boating by developing a canoe access facility downstream of the project boundary at the Carlton Bridge, and by supporting the future development of a carry-in canoe access point at Rumford Point, Maine. RFPC would also continue to maintain the existing recreational areas at the project.

The proposed development of a downstream canoe access facility would enhance the recreational opportunities along the Androscoggin River. Therefore, we recommend that, if a license is issued for the Rumford Falls Project, the Licensee should construct the canoe access facility as proposed, which includes a parking area, a canoe launching area, and access for the disabled. The Licensee should also assist the Town of Rumford, the MDOC, and the Friends of the Androscoggin with developing an additional canoe access facility at Rumford Point. We believe these facilities, in addition to the canoe access facility developed in 1991 at Gilead, Maine, would satisfy the identified recreational needs in the project area.

Unavoidable Adverse Impacts: None

C. Licensing Alternatives

There are two alternatives to the proposed action. These are: (1) take no action and allow the project to continue to operate as it has in the past; and (2) issuance of a new license with the various mitigation or enhancement options evaluated in this environmental assessment.

Under the no-action alternative, the project would continue to operate as it has in the past as discussed in Section III.D.

Option two would continue to offset the consumption of non-renewable primary energy resources, would help reduce atmospheric pollution, and would protect or enhance fish, wildlife, recreation, and cultural resources. This option would result in RFPC's continued production of an estimated 270.302 gigawatt-

hours of hydroelectric generation annually. Absent this generation, replacement energy would be purchased from Central Maine Power Company; the replacement energy would be generated by oil-fueled facilities.

The 270.302 gigawatt-hours of replacement energy would require the combustion of approximately 458,270 barrels of oil. The combustion of this quantity of oil would produce approximately 907 tons of the oxides of sulfur, approximately 707 tons of the oxides of nitrogen, approximately 48 tons of carbon monoxide and approximately 240,593 tons of carbon dioxide.

Table 1. Pollutants resulting from generating 270,302 MWh of electricity at a steam-electric plant annually by burning 458,270 barrels of oil.

Fuel	Tons Sulfur Dioxide	Tons Nitrous Oxide	Tons Carbon Monoxide	Tons Carbon Dioxide
Oil	907	707	48	240,593

State-of-the-art pollution control technology is capable of removing approximately 95 percent of the oxides of sulfur and 60 percent of the oxides of nitrogen from the uncontrolled flue gases. These reductions in the above quantities of un-controlled atmospheric pollutants would cost approximately $593,850 per year.

VI. COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the Act, require the Commission to give equal consideration to all uses of the waterway on which a project is located. When the Commission reviews a project, the recreational, fish and wildlife resources, and other nondevelopmental values of the involved waterway are considered equally with power and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved in the decision.

A. Recommended Alternative

Based on our independent review and evaluation of the proposed Rumford Falls project, agency recommendations, and the no-action alternative, we have selected issuing a license for the proposed project, with additional staff-recommended enhancement measures, as the preferred option. We recommend this option because: (1) with enhancement measures, the environmental effects of subsequent operation would be minor; (2) the enhancement measures would protect or enhance fish, wildlife, recreation, and

cultural resources; and (3) the electricity generated from a renewable resource would be provided, thus reducing the use of existing fossil-fueled, steam-electric generating plants; thereby, conserving nonrenewable energy resources, and reducing atmospheric pollution, and global warming.

The proposed project would provide a number of benefits. An estimated 270,302 MWh of relatively low-cost electricity would continue to be generated annually from a clean, domestic, reliable, and renewable energy resource for use by Boise Cascade Corporation's pulp and paper mill. 6/

The total project's cost accrues from operation and maintenance of the entire hydropower complex. This cost is negligible when compared to the value of the power. The beneficial effects (in addition to the air quality benefits) on the environment associated with the licensing of the Rumford Falls Project would result from the required environmental enhancement measures. These measures include:

(a) operate the project in a run-of-river mode;

(b) release a minimum flow of 1 cfs from the Upper dam and 21 cfs from the Middle dam of the Rumford Falls Project, as measured at the base of the dams, or inflow, whichever is less, for the protection of aquatic resources and water quality in the two bypassed reaches of the Androscoggin River;

(c) a plan to measure and report project flows, water surface elevations, and operation records to monitor compliance with the run-of-river mode of operation and flow releases to the bypassed reaches;

(d) a plan to control erosion, to control slope instability, and to minimize the quantity of sediment;

(e) implement the provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission for the Management of Historic Properties Affected by the Rumford Falls Hydroelectric Project;"

6/ The electricity potentially generated by the proposed project is equivalent to the energy that would be produced by burning 458,270 barrels of oil annually in a steam-electric power plant. Table 1 (page 21) shows pollutants that would be produced by oil-fired, steam-electric power plants, generating the amount of energy equivalent to that which would be generated by the project.

(f) implement the canoe access facility plan filed September 22, 1992; and

(g) prepare and implement a plan for a canoe access facility at Rumford Point, Maine.

B. Developmental and nondevelopmental uses of the waterway

RFPC proposes no new construction or improvements at the Rumford Falls Hydroelectric Project. Hence, the levelized project costs are only the operation and maintenance costs and administrative and general expenses. These costs are small compared to the value of the power in the region.

The Rumford plant generates on average about 270,302 MWh annually. Neither the resource agencies nor the Commission Staff has proposed any mitigation or enhancement measures which would significantly affect the project's generation or cost.

The minimum flow release of 1,034 cfs in the river immediately downstream of the tailrace, as recommended by the resource agencies, would not adversely effect the power generation because it would be released through the power plants.

We conclude that the project is economical, even with the recommended enhancement measures.

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with Federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Under Section 10(a)(2), Federal and state agencies filed a total of eight comprehensive plans for Maine and three plans for the United States that address various resources in Maine. Of these, we identified and reviewed two plans relevant to this project. 7/ No conflicts were found.

Based on a review of the agency and public comments filed in this proceeding, and on the staff's independent analysis pursuant to Sections 4(e), 10(a)(1), 10(a)(2) of the Act, we conclude that issuing a license for the Rumford Falls Project, with the required enhancement measures and other special license conditions, would permit the best comprehensive development of the Androscoggin River.

7/ Maine rivers study-final report, Maine Department of Conservation, May 1982; and State of Maine comprehensive rivers management plan, Maine State Planning Office, December 1992.

VII. CONSISTENCY WITH FISH AND WILDLIFE RECOMMENDATIONS

Pursuant to Section 10(j) of the Act, we make a determination that the recommendations of the Federal and state fish and wildlife agencies are consistent with the purposes and requirements of Part I of the Act and applicable law. Section 10(j) of the Act requires the Commission to include license conditions, based on recommendations of Federal and state fish and wildlife agencies, for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife resources. We have addressed the concerns of the Federal and state fish and wildlife agencies and made recommendations consistent with those of the agencies.

VIII. FINDING OF NO SIGNIFICANT IMPACT

The project is constructed and operating. Consequently, there would be no construction related impacts. Continued project operation would result in minor adverse impacts that are largely mitigated and offset by project benefits.

The project would not affect federally listed or proposed threatened and endangered species.

On the basis of our independent environmental analysis, issuance of a license for the Rumford Falls project would not constitute a major federal action significantly affecting the quality of the human environment.

Pursuant to Section 10(j) of the Act, this environmental assessment addresses the concerns of the federal and state fish and wildlife agencies and makes recommendations consistent with those of these agencies.

IX. LITERATURE CITED

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X. LIST OF PREPARERS

Michael Dees -- Environmental Coordinator (B.S., Geology)

James T. Griffin -- Cultural Resources (B.A., Anthropology, Master of Public Administration).

J. R. McGuire -- Recreation and Land Use Resources (Environmental Protection Specialist, M.S., Recreation).

C. Linton -- Terrestrial Resources, Endangered Species (M.S., Marine Estuarine Biology - Environmental Science).

Monte TerHaar -- Water Resources, Fishery Resources (Fisheries Biologist, M.S., Environmental Engineering, M.S., Fisheries Biology)

Dennis S. Tarnay -- Civil Engineer

Dr. C. Frank Miller -- Electrical Engineer

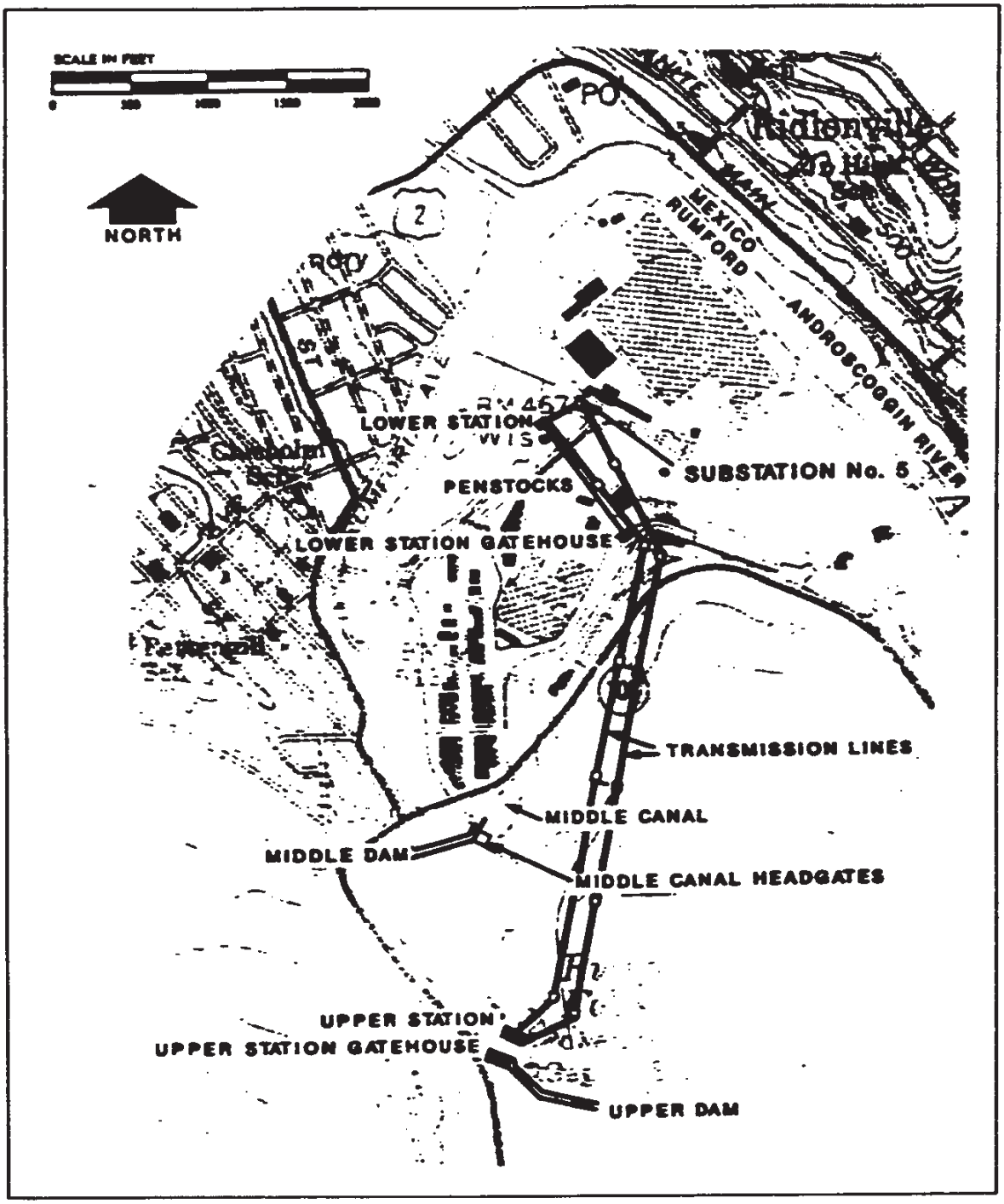

Figure 1. Location of the Rumford Falls Hydroelectric Project, FERC No. 2333, Maine

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Upper Peninsula Power Company) Project No. 1864-003

NOTICE GRANTING LATE INTERVENTION

(October 18, 1994)

On September 26, 1994, the North Shore Concerned Citizens Group of Lake Gogebic (NSCCG of Lake Gogebic) filed a late motion to intervene in the above-captioned proceeding.

It has been determined that good cause exists for granting the late intervention. NSCCG of Lake Gogebic has legitimate interests under the law that are not adequately represented by other parties. Granting the motion will not unduly delay or disrupt the proceeding or prejudice any party to it. It appears to be in the public interest to allow NSCCG of Lake Gogebic to intervene in this proceeding.

Pursuant to 18 CFR 385.214, NSCCG of Lake Gogebic is permitted to intervene in this proceeding subject to the Commission's rules and regulations. Participation of the intervenor shall be limited to matters set forth in its motion to intervene. The admission of the intervenor shall not be construed as recognition by the Commission that it might be aggrieved by any order entered in this proceeding.

Lois D. Cashell
Secretary

20060524-3009 Issued by FERC OSEC 05/24/2006 in Docket#: P-2333-050

UNITED STATES OF AMERICA 115 FERC ¶62,210
FEDERAL ENERGY REGULATORY COMMISSION

Rumford Falls Power Company
Rumford Falls Hydro LLC Project No. 2333-050

ORDER APPROVING TRANSFER OF LICENSE

(Issued May 24, 2006)

By application filed March 27, 2006, Rumford Falls Power Company (RFPC or transferor), licensee for the Rumford Falls Project No. 2333, and Rumford Falls Hydro LLC (Rumford LLC or transferee) request approval for a transfer of the license.[1] The project is located on the Androscoggin River in the town of Rumford, in Oxford County, Maine.

Public notice of the transfer application was issued. No comments, protests, or motions to intervene were filed.

The project consists of two developments, the Upper Station and the Lower Station. Applicants state that RFPC's parent company, Rumford Paper Company, owns a large paper mill adjacent to the Lower Station and has historically purchased the output of the project. New property surveys are being undertaken in connection with the transfer to delineate with more precision the property being purchased by Rumford LLC to ensure that the only properties included within the project boundaries are those necessary for project purposes. As part of that process, a new Exhibit G map of the project will be prepared and submitted to the Commission at a future date to eliminate any property not needed for project purposes and to ensure that a current Exhibit G map is on file with the Commission in accordance with the Commission's regulations governing the preparation and submission of such maps. (18 C.F.R. §§ 4.39 and 4.41(h)). An application to amend the project boundaries will be filed with the Commission as soon as the survey is done.

Approval of the license transfer predates the proposed license amendment described above. Transferor's conveyance of property interests to the transferee (ordering paragraph (C) below) must conform to the project as it is licensed at the time of the conveyance, and transferor's conveyance of its project property interests to the transferee must conform to the requirements of standard license Article 5.

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[1] *Rumford Falls Power Compan*y, 69 FERC ¶ 61,063 (1994).

20060524-3009 Issued by FERC OSEC 05/24/2006 in Docket#: P-2333-050

The transferee has agreed to accept and be bound by all of the terms and conditions of the license as though it were the original licensee.

The transferor has complied with the terms and conditions of the license and agrees to pay annual charges that have accrued to the date of the transfer. Transferee will be required to comply with the requirements of the license as though it were the original licensee. Transfer of the license for this project is consistent with the Commission's regulations and is in the public interest.

The Director orders:

(A) The transfer of the license for the Rumford Falls Hydro Project No. 2333 from Rumford Falls Power Company to Rumford Falls Hydro LLC is approved.

(B) Rumford Falls Power Company shall pay all annual charges that accrue up to the effective date of the transfer.

(C) Approval of the transfer is contingent upon: (1) transfer of the title of the properties under license and delivery of all license instruments to Rumford Falls Hydro LLC, which shall be subject to the terms and conditions of the license as though it were the original licensee; (2) Rumford Falls Hydro LLC acknowledging acceptance of this order and its terms and conditions by signing and returning the attached acceptance sheet. Within 60 days from the date of this order, Rumford Falls Hydro LLC shall submit certified copies of all instruments of conveyance and the signed acceptance sheet.

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

Joseph D. Morgan
Director
Division of Hydropower Administration
and Compliance

20060524-3009 Issued by FERC OSEC 05/24/2006 in Docket#: P-2333-050

Project No. 2333-050

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this order, Rumford Falls Hydro LLC, this _____ day of _____, 20__, has caused its corporate name to be signed hereto by_____ _____, its President, and its corporate seal to be affixed hereto and attested by _____, its Secretary, pursuant to a resolution of its Board of Directors duly adopted on the _____ day of _____, 20__, a certified copy of the record of which is attached hereto.

By_____

Attest:

_____
Secretary
(Executed in quadruplicate)

132 FERC ¶ 62,076
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Rumford Falls Hydro, LLC Docket No. 2333-068

ORDER AMENDING LICENSE

(Issued July 28, 2010)

1. On July 23, 2009, and updated May 13, 2010, Rumford Falls Hydro, LLC, licensee for the Rumford Falls Hydroelectric Project, FERC No. 2333, filed an application for an amendment of the project license. The licensee completed turbine maintenance upgrades at the Upper and Lower stations. The project is located on the Androscoggin River, in the Town of Rumford, Oxford County, Maine. The project does not occupy any federal lands.

Background

2. The license for the Rumford Falls Project was issued on October 18, 1994.[1] The project consists of two discrete hydropower developments, the Upper Station and the Lower Station, which are served by an upper dam and a middle dam, respectively. The two stations have an installed nameplate capacity of 26.55 and 12.8 megawatts (MW), respectively, totaling 39.35 MW with a maximum hydraulic capacity of 7,300 cubic feet per second (cfs). The project is operated in a run-of-river (ROR) mode.

3. The Upper Station Development consists, among other things, of a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, about 30 feet wide by 120 feet long by 92 feet high, equipped with one horizontal generating unit with a capacity of 4,050 kW, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three vertical generating units, two with a capacity of 7,650 kW each, and one with a capacity of 7,200 kW.

4. The Lower Station Development consists, among other things, of a masonry powerhouse, equipped with two identical vertical units, each with 6,400 kW capacity.

[1] 69 FERC ¶ 61, 063 (1994).

Proposed Amendment

5. The licensee completed the replacement of the runner on Unit 3 at the Upper Station in January of 2010. The need for a new runner was caused by an equipment malfunction that occurred in January 2009. The malfunction caused the aged runner to become disengaged from the turbine and break off into the river, putting Unit 3 out of service. The completed work resulted in a 1,600 kW increase in the generating capacity and 50 cfs increase in the hydraulic capacity of Unit 3.

6. The licensee also completed maintenance upgrades to Units 1 and 2 at the Lower Station, in the form of runner replacements. The maintenance upgrades resulted in a 1,200 kW increase in generating capacity and a 98 cfs increase in the hydraulic capacity at each unit, or a 2,400 kW and 196 cfs total increase in generating and hydraulic capacities, respectively, at the Lower Station.

Consultation

7. The licensee circulated the draft application for an amendment of license to resource agencies and stakeholders that included the Maine Department of Environmental Protection (MDEP), the U.S. Fish & Wildlife Service (USFWS), Maine Division of Inland Fisheries and Waterways (MDIFW) and the Maine Historic Preservation Officer (SHPO). All were given 60 days to review; none expressed concerns to the licensee before during or after the 60-day review period. MDEP issued an order approving the licensee's Maine Waterway Development and Conservation Act (MWDCA) Permit and Water Quality Certification (WQC) on July 13, 2009.

Public Notice

8. On May 18, 2010, the Commission issued a Notice of Application for Amendment of License, and Soliciting Comments, Motions to Intervene and Protests. The notice set a closing date of June 18, 2010 for any comments, motions to intervene, and protests to be filed with the Commission.

9. On June 16, 2010, the Department of the Interior (Interior) filed comments that they do not object to the proposed amendment of license and that the modest increase in hydraulic capacity is not relevant to any of the fish and wildlife measures included in the license.

Discussion

A. Installed Capacity

10. The completed upgrades to the generating units at the Upper and Lower Stations would result in an increase of 4,000 kW (an increase of 1,600 kW at the Upper Station and 2,400 kW at the Lower Station). The licensee also updated the generating capacity

of Units 1, 2, and 4 at the Upper Station to reflect a more realistic power factor in their update filing. The licensee states that the updates reflect a more realistic power factor of 95%, which resulted in an increase of 1,150 kW for Units 1, 2 and 4.[2] Table 1 provides a summary of the existing and upgraded capacities for each unit along with the approximate date that construction began on the upgrades. As such, the total authorized installed capacity of the project would change from 39,350 kW to 44,500 kW. Ordering paragraph (B) of this order amends ordering paragraph (B) (2) of the license to reflect the changes in installed and hydraulic capacities.

Table 1 - Authorized Installed Capacity Summary Table

Unit	Station	Existing Capacity (MW)	Upgraded Capacity (MW)	Start of Construction Date
1	Upper	7.65	8.10	January 1, 2009
2	Upper	7.65	8.10	January 1, 2009
3	Upper	7.20	8.80	January 1, 2009
4	Upper	4.05	4.30	January 1, 2009
1	Lower	6.40	7.60	September 1, 2007
2	Lower	6.40	7.60	May 1, 2008

B. Annual Charges

11. The increase in authorized installed capacity requires revising the annual charges, Article 201 of the license, as shown in ordering paragraph (C) of this order. In accordance with the Commission's regulations at 18 C.F.R § 11.1 (c)(5), the assessments for new authorized capacity start on the date of commencement of construction of such new capacity.

C. Exhibits

12. The licensee filed exhibits A, B, C, D, and E to reflect the proposed amendment with the amendment application on July 23, 2009. The licensee included a revised Exhibit A and updates to Exhibits B, C, D, and E. The Exhibit A needs to be further revised to reflect the updated changes described in the May 13, 2010 filing. In ordering paragraph (D) we are requiring the licensee to file a revised as-built Exhibit A, to reflect this order's authorization to the revised description of the generating units. The Exhibits B, C, D, and E are specific to only the amendment process and do not necessitate approval. The licensee did not file Exhibits F and G because the upgrades and maintenance work did not result in a change in the existing exhibits.

[2] This was explained by the licensee through electronic mail communications with Commission staff that were filed on May 28, 2010 and July 22, 2010.

D. Environmental Review

13. Approving the application allows the licensee to further develop the water resources of the Androscoggin River by increasing capacity and efficiency of the existing project. The replacement of the runner on Unit 3 at the Upper Station and the maintenance upgrades to Units 1 and 2 at the Lower Station, in the form of runner replacements, were performed within the existing powerhouses.

14. There were no structural modifications to the powerhouse itself, as the new turbines were placed in the same location as the existing equipment. There are no further plans to modify the intakes to the powerhouse, the Upper or Middle Dam, or the tailrace structures. No new or additional pollutants are expected to be introduced into the river as a result of the upgrades. The only flow change resulting from the turbine upgrades will be an increase in maximum turbine discharge of the Project by approximately 3.4 percent, which is not expected to negatively impact the Androscoggin River currents, river bed, fisheries or water quality. These modifications would not affect minimum flow requirements, run-of-river operation, or fluctuations of the impoundment elevation. Since the upgrade of the turbines did not require ground-disturbing activity, soils, terrestrial vegetation, wildlife, and cultural resources in the vicinity of the project were not affected. Similarly, the upgrades did not preclude public access during the construction period. As such, there are no temporary or permanent impacts to water quality, surrounding soils, fish and wildlife, historic/archaeological resources, public access or flood control resulting from the proposed upgrades.

15. The original Water Quality Certificate (WQC) was issued on December 7, 1992. The Androscoggin River, main stem, including all impoundments, from the Ellis River to a line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction is classified as Class C by the MDEP. The MDEP in its letter of July 13, 2009, approved the upgrades stating that the proposed changes will not have a material adverse effect on water quality and the support of designated uses for Class C waters. All existing conditions for the existing WQC remain in effect and no new conditions were added. No comments or conditions of approval were received from the other consulted agencies.

15. Therefore, the licensee's replacement of the runner on Unit 3 at the Upper Station and maintenance upgrades to Units 1 and 2 at the Lower Station would not negatively affect the fisheries and water quality resources of the Androscoggin River.

Conclusion

13. We conclude that the turbine maintenance upgrades would not constitute a major federal action significantly affecting the quality of the human environment. This order

approves the amendment of the maintenance upgrades completed at the Upper and Lower Stations.

The Director orders:

(A) The amendment application for the Rumford Falls Hydroelectric Project (FERC No. 2333) filed July 23, 2009, and updated May 13, 2010, is approved, as provided in this order.

(B) Ordering paragraph (B) (2) of the license is amended in part, by revising the description of the generating units, item (5) of the Upper Station and item (6) of the Lower Station, as follows:

(2) Project works consisting of: two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the project is 44.5 megawatts (MW) and the project's maximum hydraulic capacity is 7,546 cubic feet per second (cfs).

(a) Upper Station Development:

The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The development has a total installed nameplate capacity of 29.30 MW, a maximum hydraulic capacity of 4,550 cfs, and an average annual energy generation of about 179,317 MWh. In detail, the project can be described as follows:

The Upper Station Development consists of: … (5) a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, about 30 feet wide by 120 feet long by 92 feet high, equipped with one horizontal generating unit with a capacity of 4,300 kW, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three vertical generating units, two with a capacity of 8,100 kW each, and one with a capacity of 8,800 kW; …

(b) Lower Station Development:

The Lower Station Development's principal features consist of the Middle Dam, the Middle Canal headgate structure with a waste weir section, the Middle Canal, a gatehouse, two penstocks (each with a surge tank), a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 15.20 MW and a total maximum hydraulic capacity of 2,996 cfs. In detail, the project can be described as follows:

The Lower Station Development consists of: … (6) a masonry powerhouse, equipped with two identical vertical units, each with 7,600 kW capacity; …

(C) Article 201 of the license is amended to read as follows:

Article 201. The licensee shall pay the United States an annual charge, effective the date of commencement of construction of the additional capacity, for the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act as determined by the Commission. The authorized installed capacity for that purpose and the dates associated with the additional capacity is displayed in the table below.

Annual Charges Breakdown	
Dates	**Authorized Installed Capacity (kW)**
September 1, 2007 – April 30, 2008	40,500
May 1, 2008 – December 31, 2008	41,750
January 1, 2009 – Beyond	44,500

(D) Within 45 days from the issuance of this amendment, the licensee shall file, for Commission approval, a revised Exhibit A to describe the project as-built after completion of the upgrade to Unit 3 at the Upper Station.

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

M. Joseph Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

133 FERC ¶ 62,165
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Rumford Falls Hydro LLC Project No. 2333-072

ORDER GRANTING EXTENSION OF TIME AND
AMENDING LICENSE ARTICLE 406

(Issued November 23, 2010)

1. On November 10, 2010, Rumford Falls Hydro LLC (licensee) filed a request for an extension of time to file the annual report on cultural resource activities pursuant to article 406 of the project license[1] and the Programmatic Agreement (PA)[2], for the Rumford Falls Project (FERC No. 2333). In addition, the licensee filed a request to amend license article 406 to change the filing date of the annual report to January 31 of each year. The project is located on the Androscoggin River in the Town of Rumford, Oxford County, Maine.

2. Article 406 of the project license requires the licensee to implement the provisions of the PA. The PA requires the licensee to file, on the anniversary date of license issuance (*i.e.* October 18), an annual report summarizing the cultural resource activities conducted during the previous year and the cultural resource activities to be conducted in the ensuring year. The approved Cultural Resources Contingency Plan[3] outlines the frequency and type of monitoring activities to be conducted at known archaeological sites within the project.

3. The licensee requests an extension of time until January 31, 2011, to file the annual report summarizing the cultural resource activities conducted in 2010 and to be conducted in 2011. The licensee's cultural resource consultant performs the fieldwork and monitoring activities into the fall of each year. The conditions in Maine are suitable for outdoor archaeological monitoring activities due to the lack of vegetation cover. The

[1] Order Issuing New License issued October 18, 1994 (69 FERC ¶ 61,063)

[2] Executed April 16, 1993, among the Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission (SHPO)

[3] Order Approving Cultural Resources Contingency Plan issued May 2, 1997 (79 FERC ¶ 62,082)

monitoring activities of the licensee's consultant often extend beyond the October 18 anniversary due date. The Maine SHPO, in an email dated November 17, 2010, stated that it did not have any objection to the licensee's request to amend the October 18 due date to January 31, of each year.

4. The reasons advanced by the licensee in support of its request to extend the due date of the 2010 annual cultural resource activities report until January 31, 2011, and its request to amend the due date for future annual reports to January 31 of each year, are reasonable. The extension of time and amended due date requests should be granted.

The Director orders:

(A) The deadline for the licensee to file the annual cultural resources activities report for the Rumford Falls Project, pursuant to article 406, the Programmatic Agreement, and the Cultural Resources Contingency Plan, is extended to January 31, 2011.

(B) The due date for the licensee to file the annual cultural resources activities report for the Rumford Falls Project, pursuant to article 406, the Programmatic Agreement, and the Cultural Resources Contingency Plan, is amended to January 31, of each year.

(C) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2010). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Robert J. Fletcher
Chief, Land Resources Branch
Division of Hydropower
Administration and Compliance

166 FERC ¶ 62,141

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Brookfield Renewable Project No. 2333-037

ORDER AMENDING LICENSE ARTICLE 406

(Issued March 26, 2019)

1. On January 29, 2019, Brookfield Renewable, licensee for the Rumford Falls Hydroelectric Project No. 2333, filed its annual Cultural Resources Report for 2018. In that report, the licensee also requested to amend the project's Programmatic Agreement (PA), pursuant to license Article 406.[1] The project is located on the Androscoggin River, in the town of Rumford, Oxford County, Maine.

License Requirements

2. Article 406 requires the licensee to implement provisions of the PA[2] between the Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission (MHPC). The PA requires the licensee to file, on the anniversary date of license issuance (*i.e.* October 18), an annual report summarizing the cultural resource activities conducted during the previous year and the cultural resource activities to be conducted in the ensuring year. The project's approved Cultural Resources Contingency Plan[3] outlines the frequency and type of monitoring activities to be conducted at known archaeological sites within the project, and must include monitoring for erosion and vandalism. On November 23, 2010, the Commission issued an order amending Article 406 and changing the annual reporting date to January 31 of the year following the year in which monitoring occurred, so that monitoring activities performed in November and December could be included.

Licensee's Proposed Amendment

3. The licensee proposes amending the PA so that the annual monitoring, and the filing of annual reports, be changed to a biennial cycle. The licensee supports its

[1] *Rumford Falls Power Company*, 69 FERC ¶ 61,063 (1994)

[2] Executed April 16, 1993, among the Commission, the Advisory Council on Historic Preservation, and the Maine Historic Preservation Commission (SHPO)

[3] Order Approving Cultural Resources Contingency Plan issued May 2, 1997 (79 FERC ¶ 62,082)

proposal by noting that annual monitoring for the past eight years under the current requirement has found that erosion at the National Register-eligible Precontact period sites within the project boundary has not changed.

Consultation

4. As required by the PA, the licensee consulted with the MHPC regarding the proposed change. The licensee included with its request a copy of a January 29, 2019 email from the MHPC indicating its support for the proposal.

Conclusion

5. Implementation of the proposed amendment should not diminish protection provided by the monitoring, and would still ensure that any potential effects of the project on historic properties are identified so that they can be adequately addressed. Therefore, the proposed amendment to the PA should be approved.

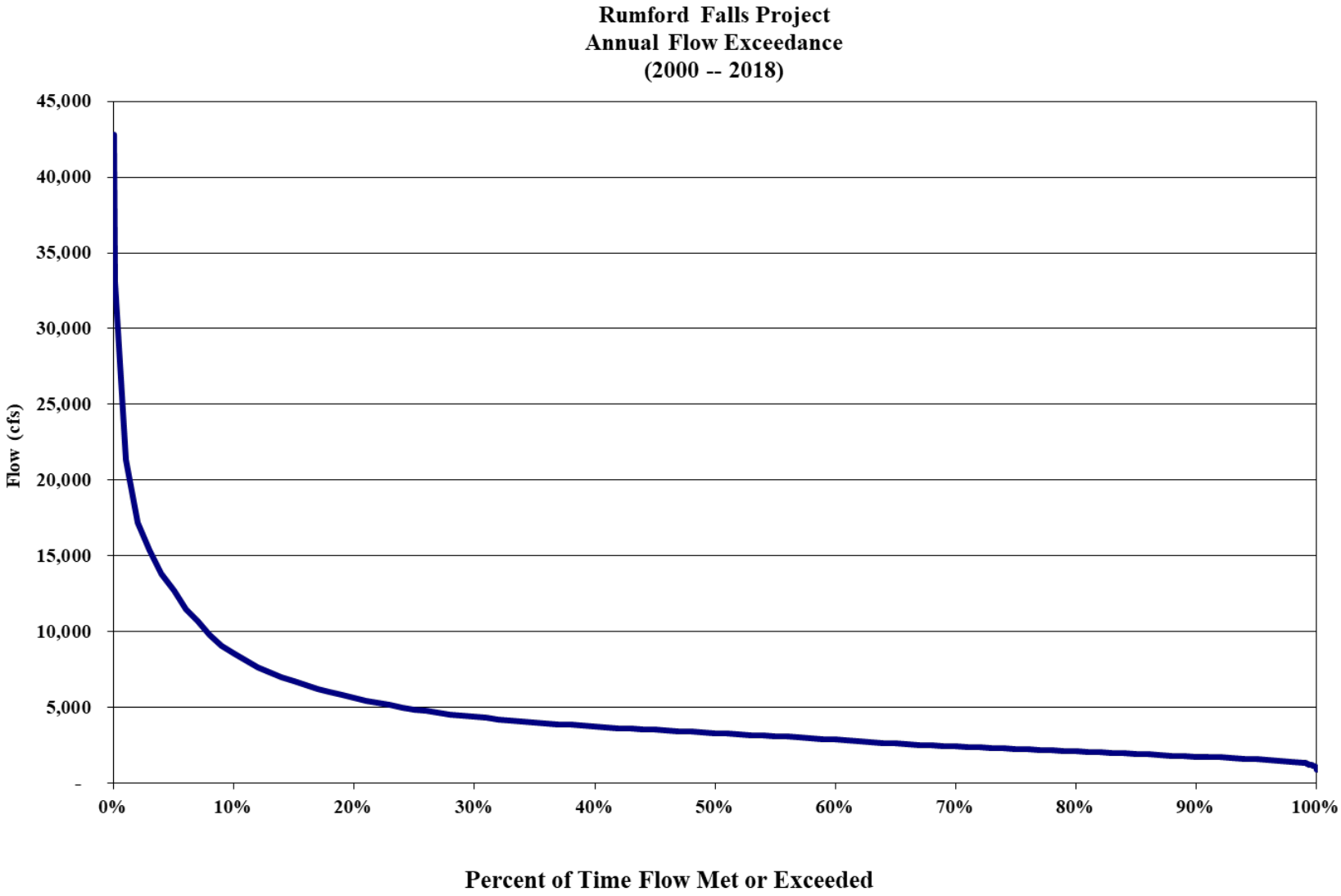
The Director orders:

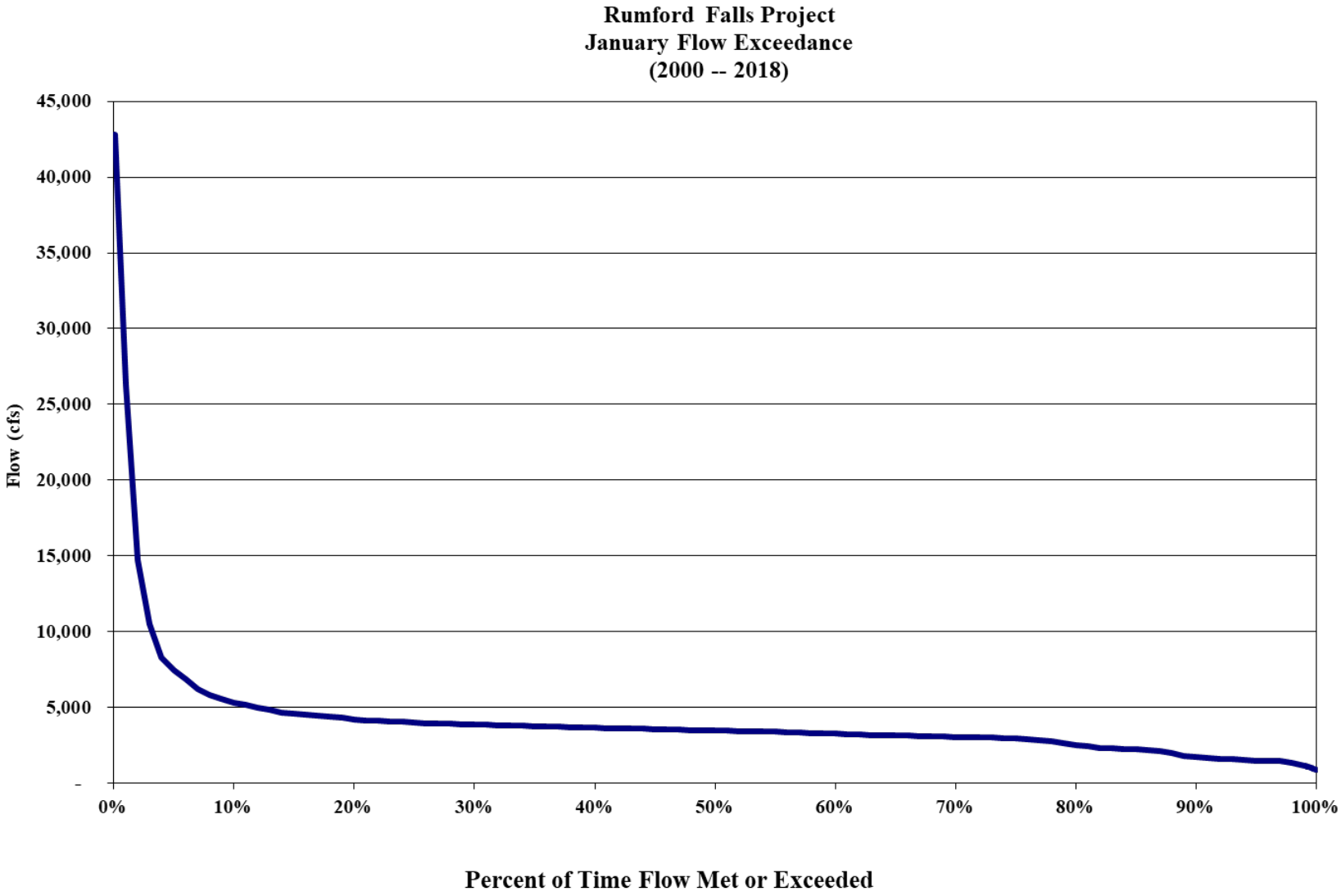
(A) Brookfield Renewable's (licensee) proposed amendment to the Programmatic Agreement (PA) filed pursuant to Article 406 for the Rumford Falls Hydroelectric Project No. 2333, on January 29, 2019, is approved. The PA and the approved Cultural Resources Contingency Plan are hereby modified and the licensee must file biennially on January 31, a report summarizing the cultural resource activities conducted during the previous two years and the cultural resource activities to be conducted in the ensuring years. The next Cultural Resources Contingency Plan is due on December 31, 2020.

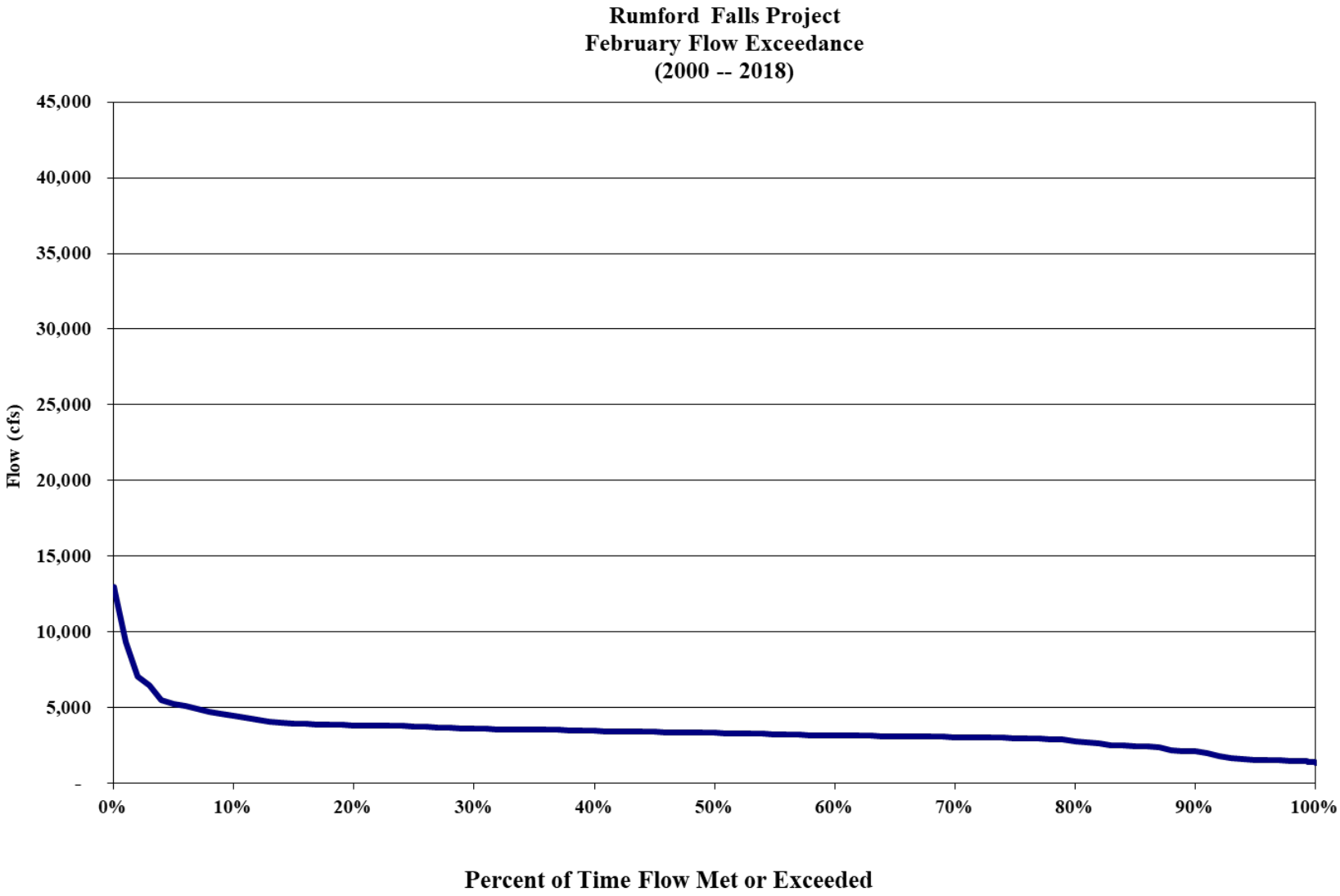
(B) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 825*l* (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2018). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

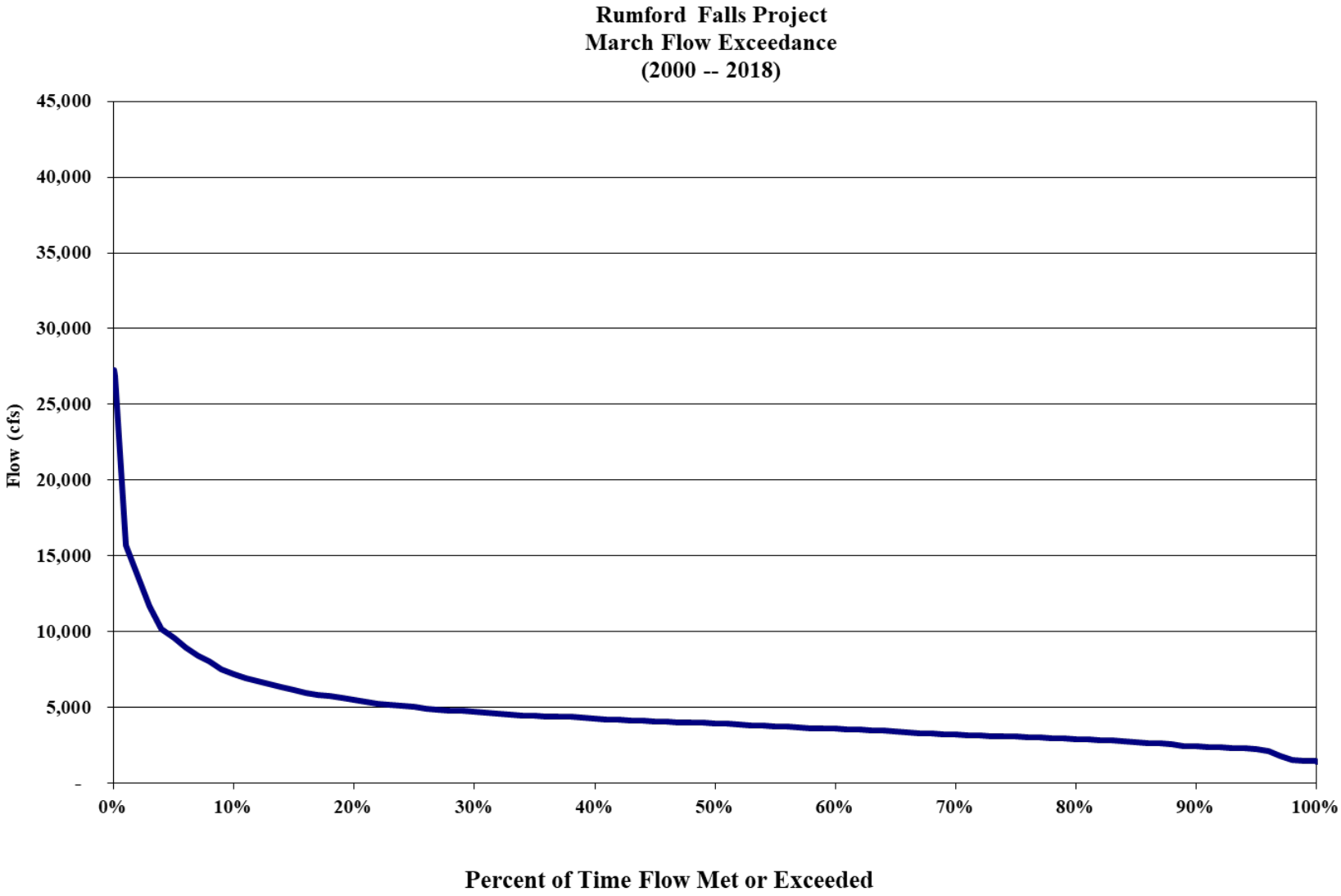
B. Peter Yarrington, Acting Chief
Environmental and Project Review Branch
Division of Hydropower Administration
and Compliance

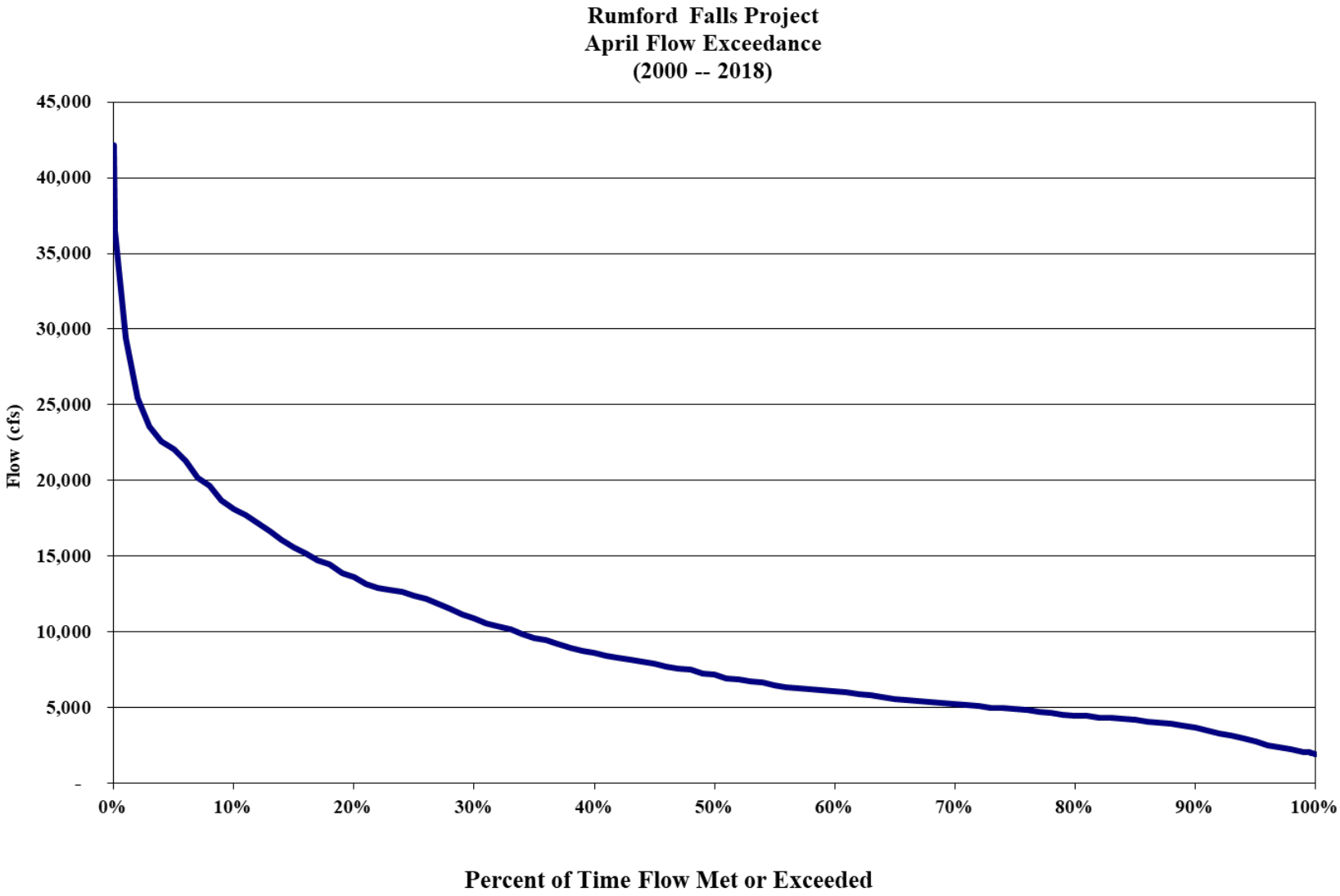
APPENDIX D
FLOW DURATION CURVES

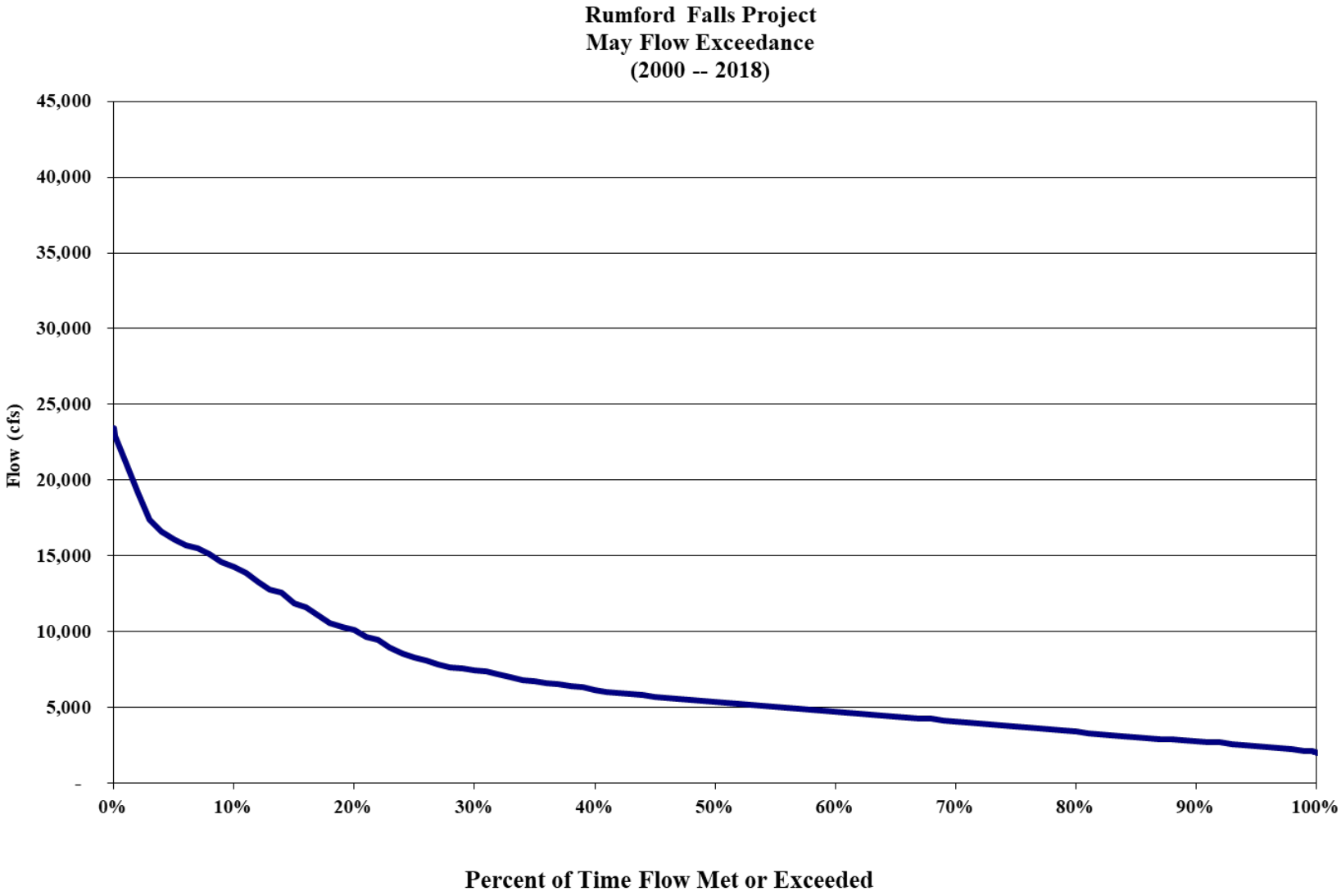

Rumford Falls Project
Annual Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

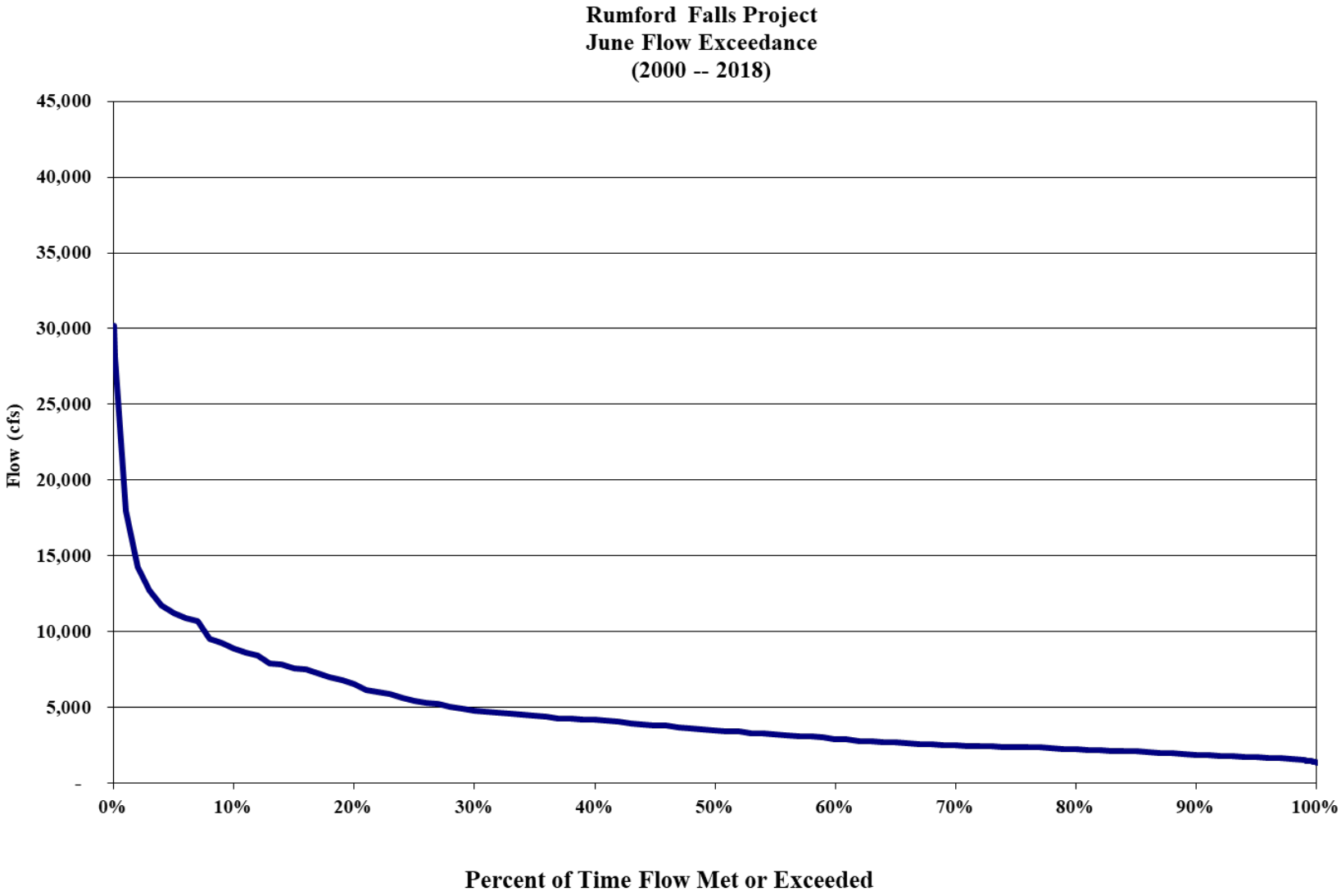

Rumford Falls Project
January Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

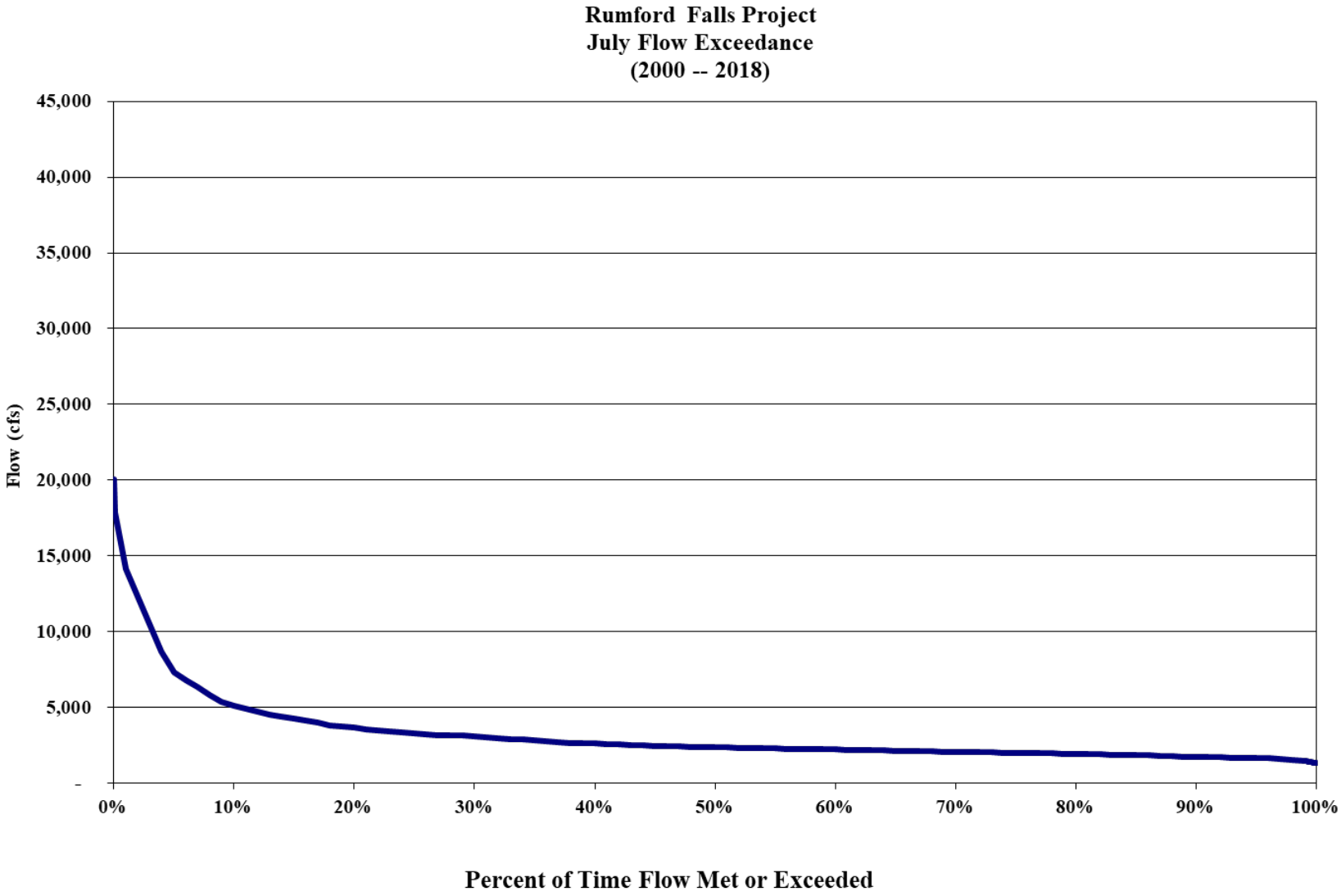

Rumford Falls Project
February Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

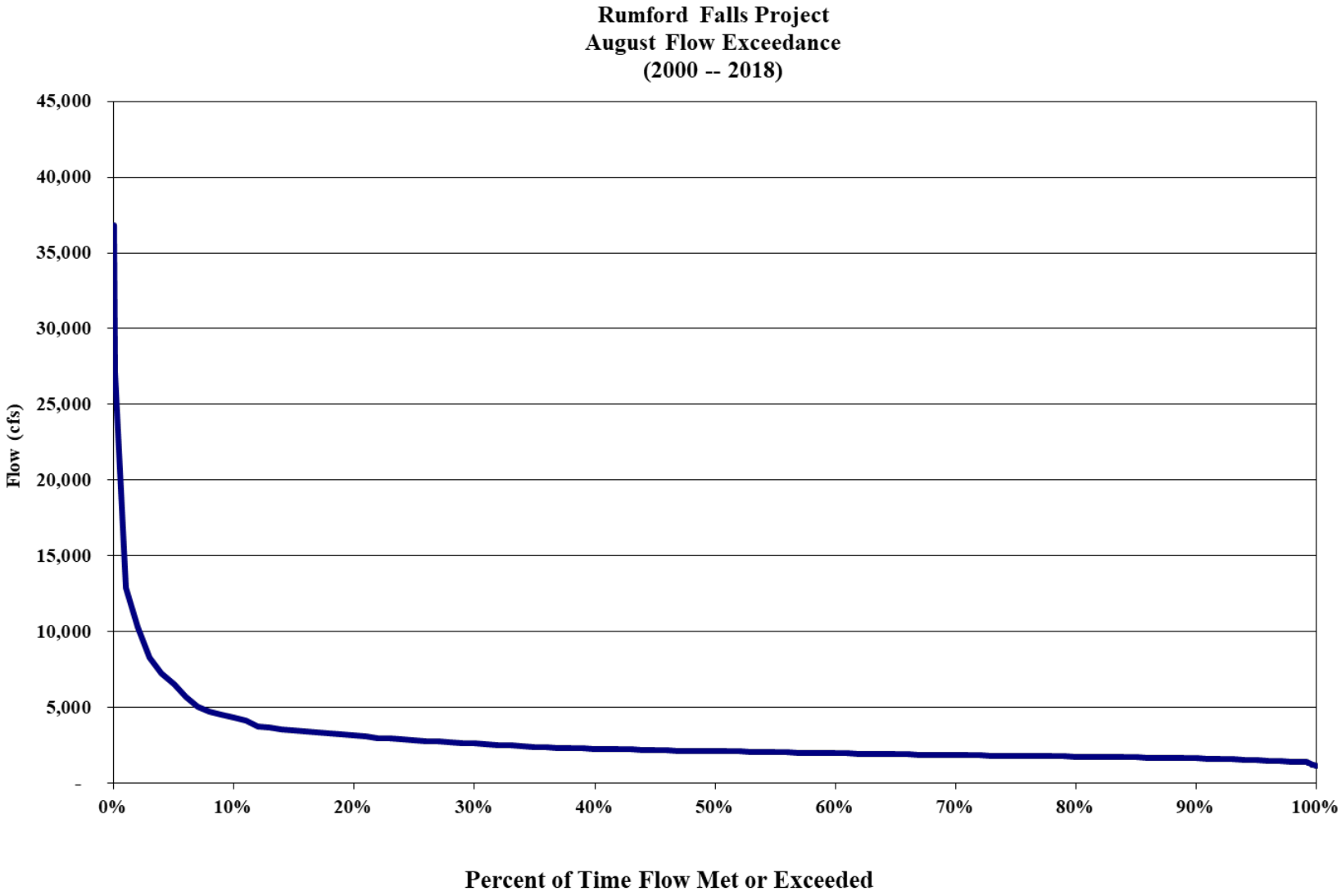

Rumford Falls Project
March Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

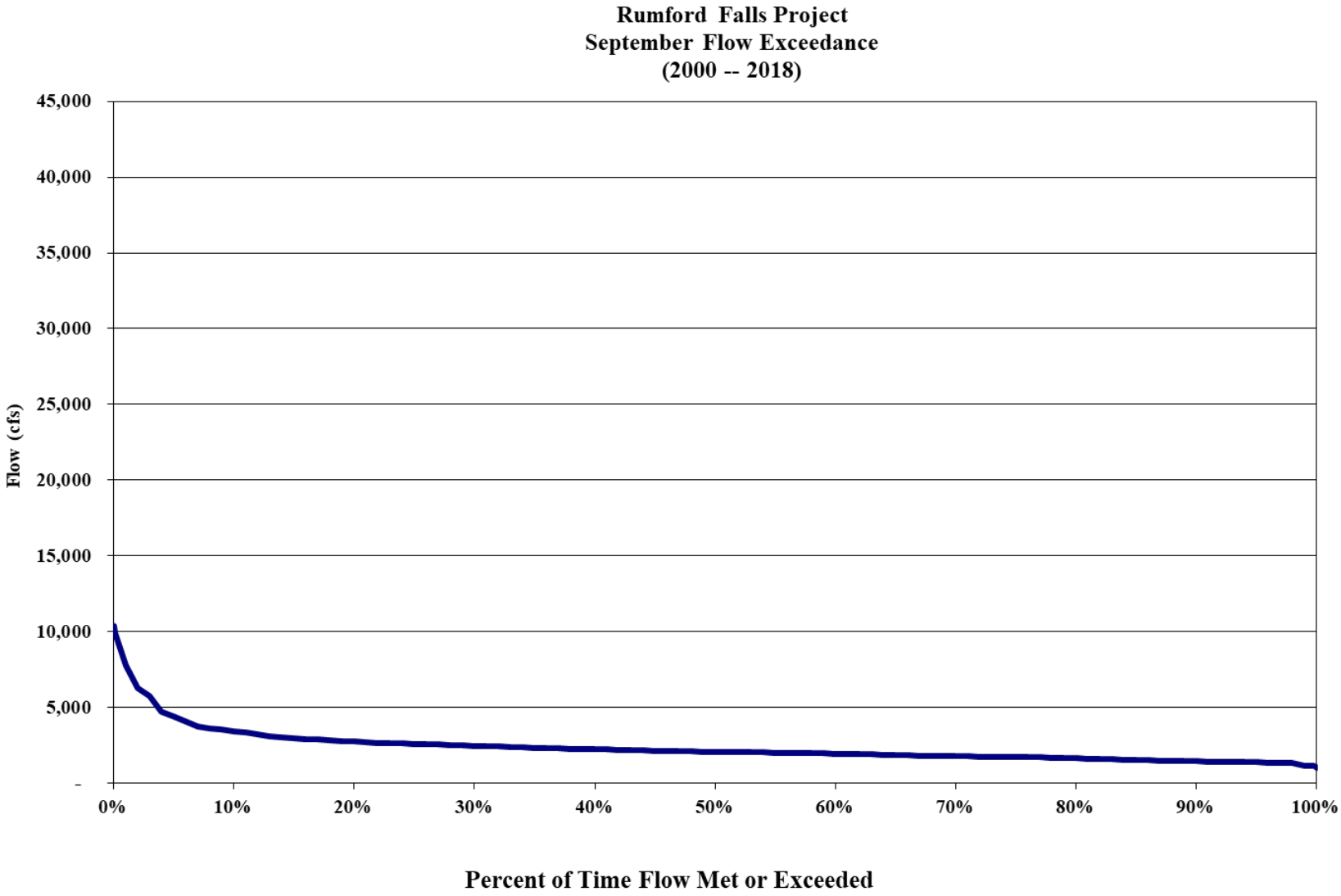

Rumford Falls Project
April Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

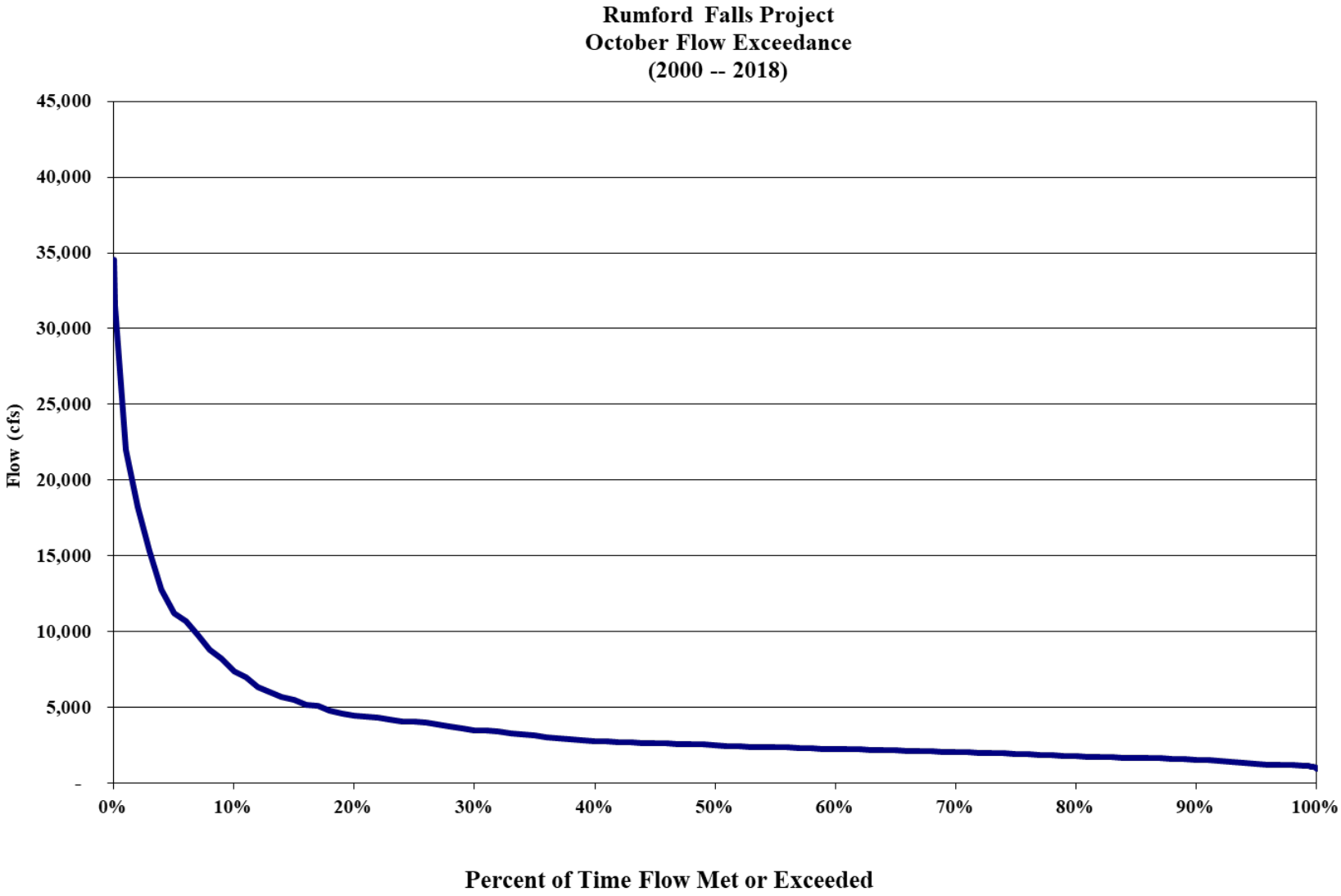

Rumford Falls Project
May Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

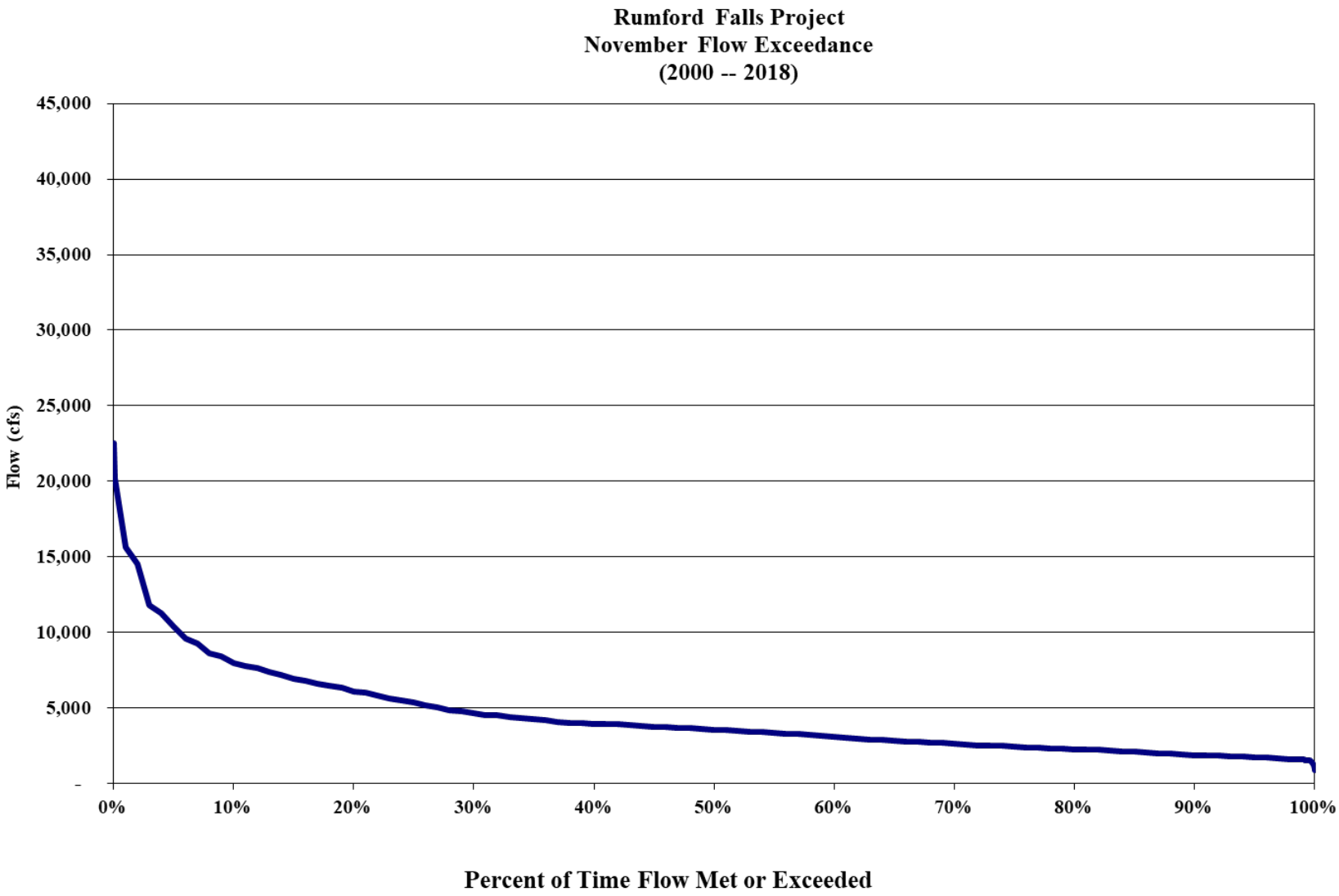

Rumford Falls Project
June Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

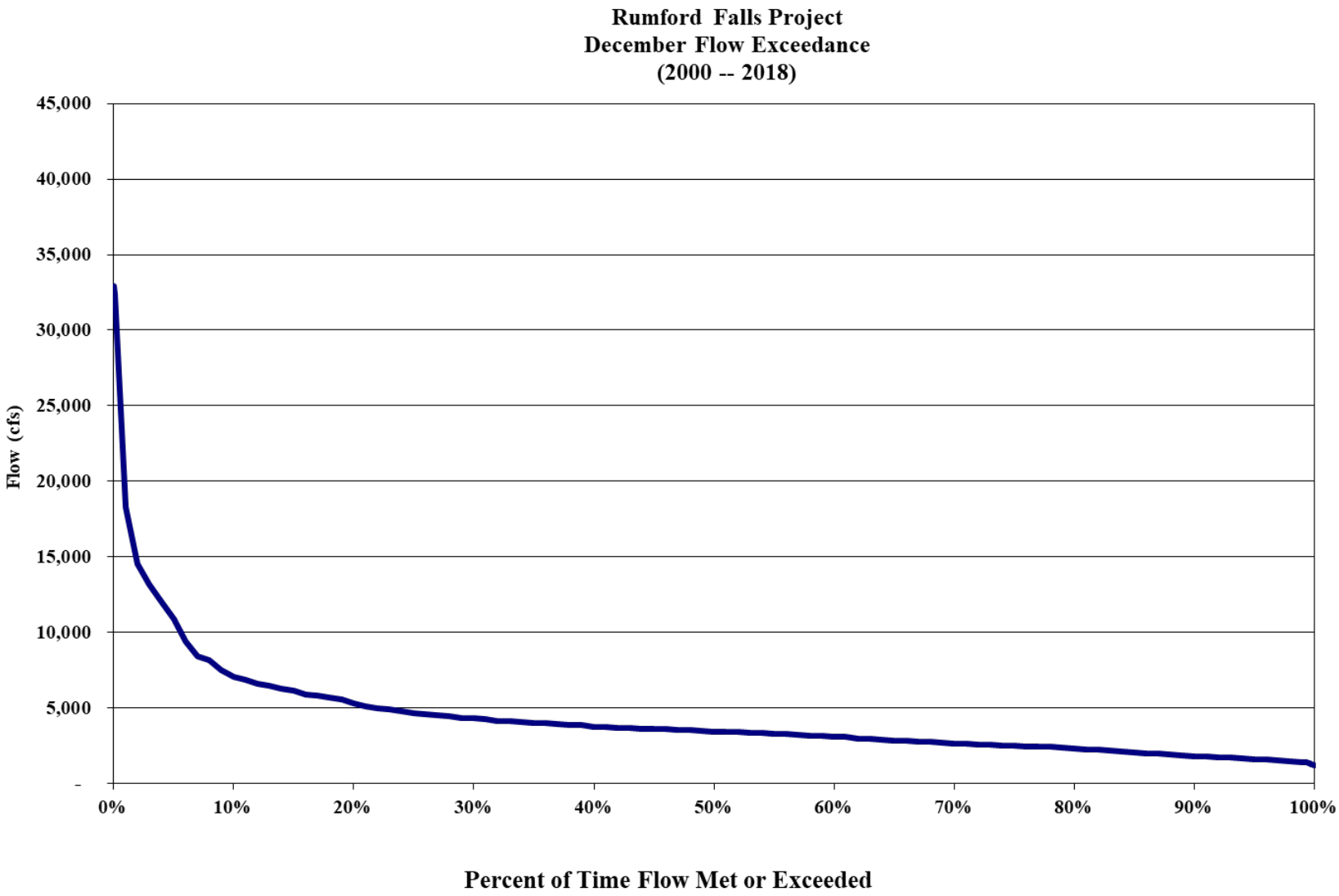

Rumford Falls Project
July Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Rumford Falls Project
August Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Rumford Falls Project
September Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Rumford Falls Project
October Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Rumford Falls Project
November Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Rumford Falls Project
December Flow Exceedance
(2000 -- 2018)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

APPENDIX E

AQUATIC LIFE CLASSIFICATION ATTAINMENT REPORT FOR 2018 MACROINVERTEBRATE DATA COLLECTED ON THE ANDROSCOGGIN RIVER IN MEXICO, MAINE

Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Classification Attainment Report

Station Information

Station Number: S-41
Waterbody: Androscoggin River - Station 41
Town: Mexico
Directions: 4.2 KM BELOW BOISE CASCADE MILL

River Basin: Androscoggin
HUC8 Name: Lower Androscoggin
Latitude: 44 31 55.58 N
Longitude: 70 28 14.47 W
Stream Order: 6

Sample Information

Log Number: 2668 Type of Sample: ROCK BASKET Date Deployed: 7/23/2018
Subsample Factor: X4 Replicates: 3 Date Retrieved: 8/20/2018

Classification Attainment

Statutory Class: C **Final Determination: A** Date: 3/11/2019
Model Result with P≥0.6: A **Reason for Determination: Model**
Date Last Calculated: 3/8/2019 Comments:

Model Probabilities

First Stage Model			
Class A	0.60	Class C	0.01
Class B	0.39	NA	0.00

C or Better Model	
Class A, B, or C	1.00
Non-Attainment	0.00

B or Better Model	
Class A or B	1.00
Class C or Non-Attainment	0.00

A Model	
Class A	0.91
Class B or C or Non-Attainment	0.09

Model Variables

01	Total Mean Abundance	1050.67
02	Generic Richness	43.00
03	Plecoptera Mean Abundance	12.00
04	Ephemeroptera Mean Abundance	181.33
05	Shannon-Wiener Generic Diversity	3.49
06	Hilsenhoff Biotic Index	3.42
07	Relative Abundance - Chironomidae	0.12
08	Relative Generic Richness Diptera	0.30
09	*Hydropsyche* Abundance	257.33
11	*Cheumatopsyche* Abundance	26.67
12	EPT Generic Richness/ Diptera Generic Richness	1.77
13	Relative Abundance - Oligochaeta	0.00
15	Perlidae Mean Abundance (Family Functional Group)	12.00
16	Tanypodinae Mean Abundance (Family Functional Group)	5.33
17	Chironomini Abundance (Family Functional Group)	38.67
18	Relative Abundance Ephemeroptera	0.17
19	EPT Generic Richness	23.00
21	Sum of Abundances: *Dicrotendipes, Micropsectra, Parachironomus, Helobdella*	1.33
23	Relative Generic Richness- Plecoptera	0.05
25	Sum of Abundances: *Cheumatopsyche, Cricotopus, Tanytarsus, Ablabesmyia*	42.67
26	Sum of Abundances: *Acroneuria, Maccaffertium, Stenonema*	81.33
28	EP Generic Richness/14	0.93
30	Presence of Class A Indicator Taxa/7	0.29

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	*Chimarra*	30.96
2	*Hydropsyche*	24.49
3	*Maccaffertium*	6.98
4	*Rheotanytarsus*	4.70
5	*Simulium*	4.70

Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Classification Attainment Report

Station Number: **S-41** Town: Mexico Date Deployed: 7/23/2018

Log Number: **2668** Waterbody: Androscoggin River - Station 41 Date Retrieved: 8/20/2018

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment			Waterbody Information - Retrieval		
Temperature:	23.2	deg C	Temperature:	22.8	deg C
Dissolved Oxygen:	9.28	mg/l	Dissolved Oxygen:	9.95	mg/l
Dissolved Oxygen Saturation:	107.2	%	Dissolved Oxygen Saturation:	114.3	%
Specific Conductance:	79.4	uS/cm	Specific Conductance:	70.3	uS/cm
Velocity:	61	cm/s	Velocity:	64	cm/s
pH:	7.26		pH:	7.29	
Wetted Width:	166	m	Wetted Width:	166	m
Bankfull Width:	166	m	Bankfull Width:	166	m
Depth:	45	cm	Depth:	56	cm

Water Chemistry

Summary of Habitat Characteristics

Landuse Name	Canopy Cover	Terrain	
Upland Conifer	Open	Rolling	
Upland Hardwood			
Potential Stressor	**Location**	**Substrate**	
Nutrients	Below Point Source	Boulder	10 %
Organic Solids	Below Road Crossing	Gravel	20 %
		Rubble/Cobble	50 %
		Sand	20 %

Landcover Summary - 2004 Data

Sample Comments

Maine Department of Environmental Protection
Biological Monitoring Program

Aquatic Life Taxonomic Inventory Report

Station Number: S-41 Waterbody: Androscoggin River - Station 41 Town: Mexico

Log Number: 2668 Subsample Factor: X4 Replicates: 3 Calculated: 3/8/2019

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Perlidae	09020209	4.00	4.00		--	0.4	0.4
Acroneuria	09020209042	2.67	8.00	0	PR	0.3	0.8
Acroneuria lycorias	09020209042125	5.33			--	0.5	
Boyeria	09020301004		2.67	2	PR		0.3
Boyeria grafiana	09020301004011	2.67			--	0.3	
Baetis	09020401001		9.33	4	CG		0.9
Baetis intercalaris	09020401001008	9.33			--	0.9	
Heterocloeon	09020401005		17.33	2	SC		1.6
Heterocloeon curiosum	09020401005020	17.33			--	1.6	
Acerpenna	09020401007		12.00	5	CG		1.1
Acerpenna pygmaea	09020401007011	12.00			--	1.1	
Plauditus	09020401012	20.00	20.00		CG	1.9	1.9
Epeorus	09020402009	5.33	5.33	0	SC	0.5	0.5
Leucrocuta	09020402011	24.00	24.00	1	SC	2.3	2.3
Stenacron	09020402014	2.67	2.67	7	SC	0.3	0.3
Maccaffertium	09020402015	72.00	73.33	4	SC	6.9	7.0
Maccaffertium modestum	09020402015051	1.33			--	0.1	
Isonychia	09020404018		13.33	2	CF		1.3
Isonychia bicolor	09020404018059	13.33			--	1.3	
Ephemerella	09020410035	1.33	1.33	1	CG	0.1	0.1
Serratella	09020410037		2.67	2	CG		0.3
Serratella deficiens (Teloganopsis deficiens)	09020410037121	1.33			--	0.1	
Serratella serratoides	09020410037124	1.33			--	0.1	
Philopotamidae	09020601				--		
Chimarra	09020601003	58.67	325.33	2	CF	5.6	31.0
Chimarra socia	09020601003004	266.67			--	25.4	
Cheumatopsyche	09020604015	26.67	26.67	5	CF	2.5	2.5
Hydropsyche	09020604016	90.67	257.33	4	CF	8.6	24.5
Hydropsyche bronta	09020604016029	1.33			--	0.1	
Hydropsyche morosa	09020604016030	49.33			--	4.7	
Hydropsyche sparna	09020604016032	24.00			--	2.3	
Hydropsyche phalerata	09020604016047	13.33			--	1.3	
Hydropsyche scalaris species group	09020604016048	78.67			--	7.5	
Macrostemum	09020604018	21.33	21.33	3	CF	2.0	2.0
Rhyacophila	09020605019		10.67	2	PR		1.0
Rhyacophila minora	09020605019063	10.67			PR	1.0	
Protoptila	09020606022	1.33	1.33	1	SC	0.1	0.1

Maine Department of Environmental Protection
Biological Monitoring Program

Aquatic Life Taxonomic Inventory Report

Station Number: S-41 Waterbody: Androscoggin River - Station 41 Town: Mexico

Log Number: 2668 Subsample Factor: X4 Replicates: 3 Calculated: 3/8/2019

Taxon	Maine Taxonomic Code	Count (Mean of Samplers) Actual	Count (Mean of Samplers) Adjusted	Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance % Actual	Relative Abundance % Adjusted
Hydroptilidae	09020607				--		
Hydroptila	09020607026	21.33	21.33	6	P	2.0	2.0
Lepidostoma	09020611064	1.33	1.33	1	SH	0.1	0.1
Ceraclea	09020618072	1.33	1.33	3	CG	0.1	0.1
Oecetis	09020618078	1.33	1.33	8	PR	0.1	0.1
Nigronia	09020701003		1.33	0	PR		0.1
Nigronia serricornis	09020701003003	1.33			--	0.1	
Nilotanypus	09021011012		2.67	6	PR		0.3
Nilotanypus fimbriatus	09021011012027	2.67			--	0.3	
Thienemannimyia	09021011020		2.67	3	PR		0.3
Thienemannimyia group	09021011020041	2.67			--	0.3	
Cricotopus	09021011037	2.67	8.00	7	SH	0.3	0.8
Cricotopus bicinctus	09021011037057	5.33			--	0.5	
Nanocladius	09021011049	6.67	6.67	3	CG	0.6	0.6
Rheocricotopus	09021011057	2.67	2.67	6	CG	0.3	0.3
Tvetenia	09021011065		2.67	5	CG		0.3
Tvetenia vitracies	09021011065113	2.67			--	0.3	
Micropsectra	09021011070	1.33	1.33	7	CG	0.1	0.1
Rheotanytarsus	09021011072	12.00	49.33	6	CF	1.1	4.7
Rheotanytarsus exiguus group	09021011072127	36.00			CF	3.4	
Rheotanytarsus pellucidus	09021011072128	1.33			CF	0.1	
Stempellinella	09021011074	2.67	2.67	2	--	0.3	0.3
Tanytarsus	09021011076	8.00	8.00	6	CF	0.8	0.8
Microtendipes	09021011094		2.67	6	CF		0.3
Microtendipes pedellus group	09021011094166	1.33			--	0.1	
Microtendipes rydalensis group	09021011094168	1.33			--	0.1	
Polypedilum	09021011102		36.00	6	SH		3.4
Polypedilum aviceps	09021011102181	4.00			--	0.4	
Polypedilum flavum	09021011102182	32.00			--	3.0	
Simulium	09021012047	49.33	49.33	4	CF	4.7	4.7
Stenelmis	09021113070	1.33	1.33	5	SC	0.1	0.1
Amnicola	10010104013	1.33	1.33		SC	0.1	0.1
Ferrissia	10010204035	1.33	1.33		SC	0.1	0.1
Pisidium	10020201002	5.33	5.33		CF	0.5	0.5
Sphaerium	10020201003	1.33	1.33		CF	0.1	0.1

APPENDIX F

VEGETATION OBSERVED WITHIN THE RUMFORD FALLS PROJECT AREA (RUMFORD FALLS POWER CO. 1991)

TABLE E.3-4

VEGETATION OBSERVED WITHIN THE RUMFORD FALLS PROJECT AREA

Common Name	Scientific Name	Abundance[1]
I. Overstory (Trees)		
Eastern hemlock	Tsuga canadensis	U
Eastern white pine	Pinus strobus	C
Black willow	Salix nigra	C
Big-toothed aspen	Populus grandidentata	U
Quaking aspen	P. tremuloides	C
Yellow birch	Betula lutea	C
American white birch	B. papyrifera	C
Gray birch	B. populifolia	U
American beech	Fagus grandifolia	U
Red oak	Quercus rubra	C
Black cherry	Prunus serotina	U
Box-elder	Acer negundo	C
Red maple	A. rubrum	C
Silver maple	A. saccharinum	C
Sugar maple	A. saccharum	U
White ash	Fraxinus americana	C
American basswood	Tilia americana	U
Slippery elm	Ulmus rubra	C
Domestic apple	Pyrus malus	U
II. Understory[2] (Shrubs & Vines)		
Common juniper	Juniperus communis	U
Willow	Salix spp.	C
Sweet gale	Myrica gale	U
Speckled alder	Alnus rugosa	C
Barberry	Berberis spp.	U
Hawthorn	Crataegus sp.	U
Witch-hazel	Hamamelis virginiana	U
Meadowsweet	Spiraea latifolia	C
Steeplebush	S. tomentosa	C

TABLE E.3-4 (cont'd)

Common Name	Scientific Name	Abundance
Blackberry	Rubus allegheniensis	C
Raspberry	R. idaeus	C
Black locust	Robinia pseudoacacia	C
Juneberry	Amelanchier sp.	U
Smooth sumac	Rhus glabra	C
Staghorn sumac	R. typhina	C
St. Johnswort[3]	Hypericum sp.	U
Striped maple	Acer pensylvanicum	C
Mountain maple	A. spicatum	C
Wild grape	Vitus spp.	U
Honeysuckle	Lonicera sp.	U
Red-osier dogwood	Cornus stolonifera	C
Silky dogwood	C. amomum	U
Huckleberry	Gaylussacia spp.	U
Lowbush blueberry	Vaccinium vacillans	U
Common lilac	Syringa vulgaris	U
Common privet	Ligustrum sp.	U
American elderberry	Sambucus canadensis	U
Sweet fern	Comptonia peregerina	U
Sheep laurel	Kalmia angustifolia	U
Common chokecherry	Prunus virginiana	U
Mapleleaf viburnum	Viburum acerifolium	U
Smooth blackhaw	V. prunifolium	U
Hobblebush	V. alnifolium	U
Arrowwood	Viburnum sp.	U
III. Ground Cover (herbaceous, including emergent species)		
Mosses	Bryophyta	C
Horsetail	Equisetum sp.	U
Lady fern	Athyrium Filix-femina	U
Spinulose woodfern	Dryopteris spinulosa	C
Marginal woodfern	D. marginalis	U

TABLE E.3-4 (cont'd)

Common Name	Scientific Name	Abundance
Vetch	Vicia sp.	C
Clover	Trifolium spp.	U
Beggar-ticks	Bidens frondosa	U
Poison-ivy	Rhus radicans	U
Virginia creeper	Parthenociccus quinquefolia	C
Common milkweed	Asclepias syriaca	U
Evening primrose	Oenothera biennis	U
Wintergreen	Gaultheria procumbens	U
Bristley sarsaparilla	Aralia hispida	U
Wild sarsaparilla	A. nudicaulis	U
Yarrow	Anchillea millefolium	C
Clintonia	Clintonia borealis	U
Aster[4]	Aster spp.	C
Ground nut	Apios americana	U
Virgin's bower	Clematis virginiana	U
Bulb-bearing water hemlock[3]	Cicuta bulbifera	U
Thistle	Cirsium sp.	U
Wild cucumber	Echinocystis lobata	U
Joe-pye-weed	Eupaturium sp.	C
Purple loosestrife	Lythrum salicaria	U
Goldenrod	Solidago spp.	C
Jewelweed	Impatiens capensis	U
Jack-in-the-pulpit	Arisaema atrorubens	U
IV. Aquatic Bed (Submergent herbaceous)		
Fragrant water-lily	Nymphaea odorata	U
Bushy pondweed[3]	Najas sp.	U
Wild celery	Vallisneria americana	U
Pond weed	Potomogetan spp.	U
Floating brownleaf[3]	P. natans	U
Knotty pondweed[3]	P. nodosus	U
Bullhead-lily	Nuphor variegatum	U

TABLE E.3-4 (cont'd)

Common Name	Scientific Name	Abundance
Boott's fern	D. x Boottii	U
Hayscented fern	Dennstaedtia punctilobuta	C
Cinnamon fern	Osmunda cinnamomea	U
Interrupted fern	O. Claytoniana	U
Royal fern	O. regalis	U
Sensitive fern	Onoclea sensibilis	C
Massachusetts fern	Thelypteris simulata	C
Long beech fern	T. phegopteris	U
Common polypody	Polypodium vulgare	U
Fragile fern	Cystopteris fragilis	U
Bracken fern	Pteridium aquilinum	U
Spikerush[3]	Eleocharis sp.	U
Creeping spikerush[3]	E. palustris	U
Needlerush	E. acicularis	U
Grass	Gramineae	C
Bluejoint[3]	Calamagrostis canadensis	U
Rush	Juncus spp.	U
Sedge	Carex spp.	C
Tussock sedge[3]	C. stricta	C
Bulrush	Scirpus spp.	C
Woolgrass	S. cyperinus	C
Common cattail	Typha latifolia	U
Canada mayflower	Maianthemum canadense	C
Bur-reed	Sparganium sp.	U
Smartweed	Polygonum sp.	U
Japanese knotweed	P. cuspidatum	U
Pinkweed[3]	P. pensylanicum	U
Meadow-rue	Thalictrum sp.	U
Tall meadow-rue	T. pubescens	U
Pickerelweed	Pontederia cordata	U
Big-leaved arrowhead	Sagittaria latifolia	U
Cinquefoil	Potentilla sp.	U

TABLE E.3-4 (cont'd)

Common Name	Scientific Name	Abundance
Waterweed	Elodea canadensis	U
Coontail	Ceratophyllum demersum	U
Duckweed[3]	Lemna minor	U
Big duckweed[3]	Spirodela polyrhiza	U
Watershield[3]	Brasenia Schreberi	U
Bladderwort[3]	Utricularia sp.	U

[1] U = Uncommon, C = Common

[2] Also includes small trees of species listed in overstory.

[3] Listed only in QUEST 1987.

[4] Asters observed not identified to species, but determined not to be leafy-(bracted asters).

APPENDIX G
USFWS MAINE FIELD OFFICE SPECIES LIST

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: July 03, 2019
Consultation Code: 05E1ME00-2019-SLI-0930
Event Code: 05E1ME00-2019-E-02419
Project Name: Rumford Falls Project

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: 05E1ME00-2019-SLI-0930

Event Code: 05E1ME00-2019-E-02419

Project Name: Rumford Falls Project

Project Type: DAM

Project Description: The Rumford Falls Hydro Project (FERC No. 2333) is a multi-development hydroelectric facility located on the Androscoggin River in Rumford, Maine. The Project is 44.5 MW and is operated as run-of-river.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.52602216631955N70.5409967433335W

Counties: Oxford, ME

Endangered Species Act Species

There is a total of 2 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.

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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
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 is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2097	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.