DRAFT ENVIRONMENTAL ASSESSMENT

FOR SURRENDER OF PROJECT LICENSE AND NON-CAPACITY AMENDMENT OF LICENSES

Saccarappa Hydroelectric Project—FERC Project No. 2897-048
Mallison Falls Hydroelectric Project—FERC Project No. 2932-047
Little Falls Hydroelectric Project—FERC Project No. 2941-043
Gambo Hydroelectric Project—FERC Project No. 2931-042
Dundee Hydroelectric Project—FERC Project No. 2942-051
Maine

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Administration and Compliance
888 First Street, NE
Washington, DC 20426

January 23, 2019

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LIST OF ABBREVIATIONS

Advisory Council	Advisory Council on Historic Preservation
American Whitewater	American Whitewater Association
APE	area of potential effect
°C	degrees Celsius
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission, FERC
Commerce	U.S. Department of Commerce
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DEA	Draft Environmental Assessment
DO	dissolved oxygen
EA	environmental assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
F	degrees Fahrenheit
FPA	Federal Power Act
FWS	U.S. Fish and Wildlife Service
GWh	gigawatt-hours
HPMP	Historic Properties Management Plan
Interior	U.S. Department of the Interior
kV	kilovolts
kW	kilowatts
kWh	kilowatt-hours
Licensee	Sappi North America, Inc.
MCP	Maine Coastal Program
Maine DEP	Maine Department of Environmental Protection
Maine DIFW	Maine Department of Inland Fisheries and Wildlife
Maine DMR	Maine Department of Marine Resources
Maine SHPO	Maine State Historic Preservation Office
msl	mean sea level
MOA	Memorandum of Agreement
MW	megawatts
National Register	National Register of Historic Places
NRCM	Natural Resources Council of Maine
NGO	Non-governmental Organizations
NMFS	National Marine Fisheries Service
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

NLEB	northern long-eared bat
PA	Programmatic Agreement
Presumpscot River Projects	Saccarappa, Mallison Falls, Little Falls, Gambo, and Dundee projects
RM	River Mile
SCORP	Maine Statewide Comprehensive Outdoor Recreation Plan
Sebago TU	Sebago Chapter of Trout Unlimited
USGS	U.S. Geological Survey
WQC	Water Quality Certificate

EXECUTIVE SUMMARY

On March 23, 2018, Sappi North America, Inc. (licensee) filed an application with the Commission to surrender the license for the Saccarappa Hydroelectric Project No. 2897.[1] Concurrently, on March 23, 2018, the licensee filed an application to amend the Mallison Falls, Little Falls, Gambo, and Dundee project licenses (Project Nos. 2932, 2941, 2931, and 2942, respectively). The projects (collectively, the Presumpscot River Projects) are located on the Presumpscot River in Westbrook, Cumberland County, Maine.

Proposed Action

Under the proposed action, for the surrender of the Saccarappa Project license, the licensee proposes to: (1) remove the existing powerhouse and other ancillary structures; (2) remove the eastern and western spillways; (3) partially fill the existing tailrace; (4) construct a double Denil fishway within the filled tailrace area to provide fish passage over the lower falls; (5) alter and repair the tailrace guard wall to support the operation of the Denil fishway; (6) construct a fish counting facility at the exit of the Denil fishway; and (7) modify the bedrock in the eastern and western channels to facilitate nature-like fish passage over both the eastern and western sections of the upper falls.

For the amendments to the Mallison Falls, Little Falls, Gambo, and Dundee projects, the licensee proposes to: (1) amend the Mallison Falls Project license (the next upstream project from Saccarappa) to include the new double Denil fish passage facilities built at the Saccarappa site; (2) extend by ten years, until 2053, the license expiration dates for the Mallison Falls, Little Falls, Gambo, and Dundee projects; and (3) remove all fish passage requirements from the Gambo and Dundee licenses.

Public Involvement and Areas of Concern

On May 11, 2018, the Commission issued a notice that the licensee's application for surrender of the Saccarappa Project and amendment of the Mallison Falls, Little Falls, Gambo, and Dundee project licenses was accepted for filing, soliciting motions to intervene and protests, comments, terms and conditions, recommendations, and prescriptions on the applications, and stating that the applications were ready for environmental analysis. Many comments were received in support of the application.

[1] On October 12, 2018, the Commission issued an order amending the licenses of the Presumpscot River Projects to change the licensee's name from S.D. Warren Company to Sappi North America, Inc. *See* 165 FERC ¶ 62,032 (2018). The licensee informed the Commission on August 29, 2018, that the change is in name only with no change in the legal entity holding the licenses.

Protest comments were filed regarding fisheries issues, including objections to changing fish passage conditions and removing fish passage requirements altogether from the Gambo and Dundee project licenses. These comments are addressed in the Fisheries and Aquatic Resources section of this Draft Environmental Assessment (DEA).

Conclusions

The surrender and amendment applications would have no effect on any federally listed threatened or endangered species or critical habitats within the vicinity of the proposed action area. Historic properties would be affected by the proposed action and the licensee consulted with the Maine State Historic Preservation Office (Maine SHPO) on mitigation measures for the undertaking.

In our analysis, we find that the licensee's proposal to decommission and remove the dam and spillways at the Saccarappa Project would eliminate a source of renewable generation but would restore this section of the Presumpscot River to a free-flowing condition. The installation of a double Denil fishway at the lower falls and modifications to create a nature-like fishway at the upper falls would improve conditions for migrating fish, thus ensuring that fish can navigate this section of the river after all decommissioning work is completed.

Concerning the Mallison Falls, Little Falls, Gambo, and Dundee project amendments, the licensee has reached a comprehensive Settlement Agreement with Maine Department of Marine Resources (Maine DMR), U.S. Fish and Wildlife Service (FWS), the City of Westbrook, and others. This agreement, which is reflected in the pending surrender and amendment applications before the Commission, balances the restoration of a free-flowing river and improved fish passage at the Saccarappa Dam site with the license extensions and removal of fish passage requirements at the Gambo and Dundee projects. Although the pending applications are not uncontested, we have reviewed the costs and benefits of the surrender and amendment applications and the Settlement Agreement upon which they are based, and on balance, staff recommends their approval with one staff-recommended additional measure. In summary, staff finds that approval of the surrender of the Saccarappa Project license and amendments to the Mallison Falls, Little Falls, Gambo, and Dundee project licenses would not constitute a major federal action significantly affecting the quality of the human environment.

1.0 INTRODUCTION

1.1 APPLICATIONS

On March 23, 2018, Sappi North America, Inc. (licensee) filed an application with the Commission to surrender the license for the Saccarappa Hydroelectric Project No. 2897.[2] Concurrently, on March 23, 2018, the licensee filed an application to amend the Mallison Falls, Little Falls, Gambo, and Dundee project licenses (Project Nos. 2932, 2941, 2931, and 2942, respectively). The applications were developed to be consistent with a Settlement Agreement signed in March 2018 by the licensee and the U.S. Department of the Interior (Interior), FWS, Maine DMR, Conservation Law Foundation, Friends of Presumpscot River, and the City of Westbrook, Maine regarding the surrender of the Saccarappa Project license and plans for fish passage on the river. The projects (collectively, the Presumpscot River Projects) are located on the Presumpscot River in Westbrook, Cumberland County, Maine.

Under the proposed action, for the surrender of the Saccarappa Project license, the licensee proposes to: (1) remove the existing powerhouse and other ancillary structures; (2) remove the eastern and western spillways; (3) partially fill the existing tailrace; (4) construct a double Denil fishway within the filled tailrace area to provide fish passage over the lower falls; (5) alter and repair the tailrace guard wall to support the operation of the Denil fishway; (6) construct a fish counting facility at the exit of the Denil fishway; and (7) modify the bedrock in the eastern and western channels to facilitate nature-like fish passage over both the eastern and western sections of the upper falls.

For the amendments to the Mallison Falls, Little Falls, Gambo, and Dundee projects, the licensee proposes to: (1) amend the Mallison Falls Project license (the next upstream project from Saccarappa) to include the new double Denil fish passage facilities built at the Saccarappa Dam site; (2) extend by ten years, until 2053, the license expiration dates for the Mallison Falls, Little Falls, Gambo, and Dundee projects; and (3) remove all fish passage requirements from the Gambo and Dundee licenses.

1.2 PURPOSE OF ACTION

The Commission must decide whether to approve the licensee's applications for surrender of the Saccarappa Project and amendments of the licenses for the Mallison Falls, Little Falls, Gambo, and Dundee projects and what conditions should be placed on any surrender and amendment order issued. In deciding whether to approve the licensee's applications, the Commission must determine that the Proposed Action will be

[2] The surrender application was supplemented on June 14, June 25, July 5, and July 30, 2018 in response to a May 24, 2018 request from Commission staff for additional information.

best adapted to a comprehensive plan for improving or developing a waterway. In addition to power and development, the Commission must give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to and enhancement of fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality.

In accordance with the National Environmental Policy Act (NEPA) of 1969 and the Commission's regulations (18 CFR Part 380), this Draft Environmental Assessment (DEA) assesses the effects associated with the surrender and amendments of the projects, alternatives to the Proposed Action, and makes recommendations to the Commission on whether to approve the licensee's applications, and if so, recommends terms and conditions to become part of any surrender and amendment order issued.

In this DEA, we assess the environmental effects of the Proposed Action and the No-Action Alternative. Important issues that are addressed include fish passage and access to recreation.

1.3 STATUTORY AND REGULATORY REQUIREMENTS

1.3.1 Federal Power Act

1.3.1.1 Section 18 Fishway Prescriptions

Section 18 of the Federal Power Act (FPA) states that the Commission is to require construction, operation, and maintenance by a licensee of such fishways as may be prescribed by the Secretaries of the U.S. Department of Commerce or Interior.

On June 11 and 22, 2018, FWS filed Section 18 Fishway Prescriptions for the five projects. These prescriptions would modify the existing fishway prescriptions of the licenses and incorporate provisions for when the surrender of the Saccarappa Project license becomes effective. The prescriptions were developed to be consistent with the Settlement Agreement. Section 2.3.2 lists the fishway prescriptions.

1.3.1.2 Section 10(j) Recommendations

Under section 10(j) of the FPA, each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project. The Commission is required to include these conditions in any new license unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. Before rejecting or

modifying an agency recommendation, the Commission is required to attempt to resolve any such inconsistency with the agency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

No federal or state fish and wildlife agency filed recommendations under section 10(j).

1.3.2 Clean Water Act

Under section 401 of the Clean Water Act (CWA), a license applicant must obtain certification from the appropriate state pollution control agency certifying compliance with the CWA. On March 28, 2018, the licensee applied to the Maine Department of Environmental Protection (Maine DEP) for 401 water quality certification (WQC). On October 9, 2018, Maine DEP issued a water quality certificate for the Presumpscot River Projects (2018 WQC). The conditions in the 2018 WQC are outlined below in Section 2.3.1.

1.3.3 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

The Presumpscot River projects are located within the range of northern long-eared bats (*Myotis septentrionalis*) (NLEB) and the small whorled pogonia plant (*Isotria medeoloides*), which are both listed as threatened under the ESA. As discussed in Section 3.3.5 *Threatened and Endangered Species*, we conclude that construction of a fish ladder and dam removal at the Saccarappa Project site would have no effect on NLEB or small whorled pogonia. The proposed amendments to the Mallison Falls, Little Falls, Gambo, and Dundee projects would also have no effect on these species.

1.3.4 Coastal Zone Management Act

Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), 16 U.S.C.§ 1456(3)(A), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification.

The action area is not located within the state-designated Coastal Management Zone. On June 14, 2018, the licensee filed documentation of consulting with the Maine

Coastal Program (MCP). By an e-mail dated June 1, 2018, the MCP stated that the Presumpscot River Projects do not lie within the coastal area as defined by the CZMA and that CZMA consistency review of the license surrender and fish passage-related actions at the Saccarappa project and related license amendments for the Mallison, Little Falls, Gambo, and Dundee projects is not required.

1.3.5 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA),[3] and its implementing regulations,[4] requires that every federal agency "take into account" how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (National Register).

On July 15, 2002, the Commission, Maine Historic Preservation Officer, and Advisory Council on Historic Preservation (Advisory Council) executed a Programmatic Agreement (PA) for the above projects and the PA was implemented in Article 410 of the projects' licenses. Pursuant to stipulation V(B) of the PA, the Commission must first consult the Maine SHPO, the Penobscot Nation, Advisory Council, and the licensee to consider alternatives to mitigate effects to historic properties before authorizing the decommissioning and removal of a project.

The proposed surrender of the Saccarappa Project is considered an undertaking pursuant to section 106 of the NHPA. Because federal jurisdiction would end, the surrender would have an adverse effect on historic properties within the area of potential of effect (APE). In addition, the Commission has determined that this undertaking would adversely affect the Saccarappa Station and related resources that include the dam, forebay, intake, tailrace, powerhouse, and historic equipment, which are contributing features to the Saccarappa Hydroelectric Project (determined eligible for the National Register in June 2003). Further, in a letter dated December 19, 2013, the Maine SHPO said the removal of some or all of the dam would have an adverse effect on the above historic property. Finally, a Phase I archaeological survey identified two areas in section 9 and 15, respectively, of the National Register-listed Cumberland and Oxford Canal, which were subject to active erosion due to water level fluctuations.

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[3] 54 U.S.C. §§ 306108 et seq. (2016). The National Historic Preservation Act was recodified in Title 54 in December 2014.

[4] 36 C.F.R. Part 800 (2016).

To meet the requirements of section 106, staff executed a Memorandum of Agreement (MOA) to mitigate the adverse effect of removing the Saccarappa Project. The terms of the MOA ensure that the licensee addresses and mitigates adverse effects. The Commission signed the MOA on December 4, 2018, and the Maine SHPO signed the MOA on December 6, 2018. The licensee signed the MOA as a concurring party on December 7, 2018. Commission staff recommend incorporating the executed MOA into any surrender order for the project.

Cultural resource protection is discussed further in Section 3.3.6, *Cultural Resources.*

1.3.6 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions that may adversely affect Essential Fish Habitat (EFH). The Presumpscot River (included as the seawater mixing zone for the Casco Bay estuary) has been designated by the New England Fishery Management Council as EFH for Atlantic salmon. NMFS did not recommend specific measures pursuant to the Act. The proposed dam removal and fish passage installation activities at the Saccarappa site are expected to increase potential available habitat for Atlantic salmon and thus, no adverse effect on EFH is expected. Therefore, no consultation pursuant to this Act is necessary.

1.4 PUBLIC REVIEW AND COMMENT

The Commission's regulations (18 CFR sections 4.38 and 6.1) require licensees to consult with appropriate resource agencies, tribes, and other entities before filing an application for surrender or amendment of license. Pre-filing consultation must be complete and documented according to the Commission's regulations. The section below describes the public outreach and resource agency consultation conducted by the licensee prior to filing its applications with the Commission.

1.4.1 Background and Pre-filing Consultation

On December 31, 2013, the licensee filed an application to surrender its license for the Saccarappa Project, citing, in part, the high cost of constructing and operating required fish passage facilities. Nevertheless, the licensee proposed installing a double Denil fish ladder at the project as one of the terms of its surrender. The licensee then began negotiations with state and federal resource agencies, the City of Westbrook, and non-governmental organizations to jointly investigate fish passage design alternatives to the Denil fish ladder proposed in its surrender application. These discussions resulted in an agreement to request from the Commission a two-year extension of the fish passage deadline at the Saccarappa Project, in order to allow the parties time to engage in a

collaborative process to evaluate fish passage alternatives. On July 30, 2014, after receiving a revised WQC and section 18 fishway prescriptions, the Commission issued an order extending the fish passage deadline from May 2015 to May 2017. Subsequently, on September 4, 2014, the licensee filed a notice withdrawing its surrender application.

The above collaborative process resulted in the licensee filing a second surrender application on December 2, 2015. On March 3, 2016, the Commission issued public notice of the surrender application and solicited comments, motions to intervene, and protests. On March 7, 2016, the licensee requested the Commission immediately stay all filing deadlines in the surrender proceeding until July 1, 2016, to allow the parties additional time to consult and further evaluate fish passage alternatives. On March 27, 2016, the license requested a one-year extension of time of the fish passage deadline, providing a revised WQC and section 18 fishway prescriptions. On July 17, 2016, the Commission granted the licensee's request, extending the deadline from May 2017 to May 2018.

On November 15, 2016, and supplemented on December 28, 2016, the licensee again filed an application to extend the fish passage deadline another year and on February 14, 2017, the Commission granted the license's request extending the deadline from May 2018 to May 2019. Subsequently, on February 17, 2017, the licensee filed another notice withdrawing its second surrender application.

On November 15, 2016, and amended and extended on March 7, 2018, the licensee reached a comprehensive Settlement Agreement with the above parties that resolves all aspects of fish passage for the Presumpscot River Projects. The Settlement Agreement was made and entered into by the licensee, Interior, FWS, Maine DMR, Conservation Law Foundation, Friends of the Presumpscot River and the City of Westbrook, Maine. The agreement sets forth the obligations of the licensee under the FPA and the Maine Waterway and Conservation Act, and other laws, to meet the fish passage and other objectives and responsibilities of all parties, and to bind the parties to implement the Settlement Agreement.

On March 9, April 20, June 22, and August 3, 2017, the licensee held technical review meetings in accordance with the Settlement Agreement and developed its third and final surrender application for the Saccarappa Project and its amendment application for the Mallison Falls, Little Falls, Gambo, and Dundee projects. On March 22, 2018, the licensee held a public meeting in Westbrook, Maine to discuss the above final applications and then filed these applications with the Commission on March 23, 2018.

1.4.2 Responses to Public Notice

On May 11, 2018, the Commission issued a public notice that the licensee's applications for surrender and amendment were accepted for filing, soliciting motions to

intervene and protests, comments, terms and conditions, recommendations and prescriptions, and stating that the applications were ready for environmental analysis. This notice set June 11, 2018 as the deadline for the above filings. Table 1 lists the entities that provided comments and motions to intervene in response to the notice.

Table 1. Responses to Public Notice

Date Filed	Entity	Motion to Intervene
5/22/2018	Maine Department of Marine Resources	X
5/30/2018	Friends of the Presumpscot River	X
5/31/2018	Conservation of Law Foundation	X
5/31/2018	Friends of Merrymeeting Bay and Ed Friedman	X
6/4/2018	Friends of Sebago Lake	X
6/5/2018	Friends of Merrymeeting Bay and Ed Friedman	X
6/8/2018	City of Westbrook, Maine	X
6/8/2018	U.S. Department of Interior on behalf of FWS, Bureau of Indian Affairs, and National Park Service	X
6/8/2018	American Whitewater	X
6/8/2018	Town of Standish, Maine	X
6/11/2018	Natural Resources Council of Maine	X
6/11/2018	City of Westbrook, Maine	
6/11/2018	U.S. Fish and Wildlife Service	
6/11/2018	Maine Department of Marine Resources	
6/11/2018	Sebago Chapter of Trout Unlimited	X
6/11/2018	Maine Rivers	X
6/11/2018	Conservation Law Foundation and Friends of the Presumpscot River	
6/11/2018	Friends of Merrymeeting Bay and Ed Friedman	

All motions to intervene and protests, comments, terms and conditions, recommendations and prescriptions filed in response to the public notice are addressed in the appropriate resource sections of this DEA.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Saccarappa Project license would not be surrendered, no dams would be removed, and the project would continue to operate under the current license which would include the requirement to install fish passage at the Saccarappa Project by May 2019. The Mallison Falls, Little Falls, Gambo, and Dundee project licenses would not be amended and would continue to operate according to the existing terms of their licenses including the requirement to install fish passage at those projects based on fish passage numbers at the Saccarappa Project. We use this alternative as the baseline environmental condition for comparison with the proposed alternative and staff-recommended alternative.

2.1.1 Existing Project Facilities and Operation

2.1.1.1 Saccarappa Project

The Saccarappa Project is located on the Presumpscot River in Westbrook, Cumberland County, Maine at approximately River Mile (RM) 11, where the river is bisected by a small island and creates the eastern and western river channels. The project impoundment stretches approximately 5 miles upstream to the tailwater of the Mallison Falls Dam and has a surface area of approximately 87 acres at normal headpond elevation of 69.95 feet U.S. Geological Survey (USGS) datum. Project facilities consist of a 322-foot-long diversion dam formed by two concrete overflow structures that are separated by an island. The eastern spillway is 220 feet long and 10 feet high, while the western spillway is 102 feet long and 12 feet high. The crest elevations of the spillways vary from 69.8 to 70.0 feet. The project also includes: (1) two free-flowing bypass reaches measuring 475 and 390 feet long on either side of the island; (2) a 380-foot-long and 36-foot-wide intake canal cut into bedrock; (3) a 60-foot-long headgate structure; (4) an 80-foot-long concrete-lined forebay; (5) a 49-foot-wide by 71-foot-long powerhouse; (6) three horizontal Francis turbines direct-connected to generators; each with an installed capacity of 450 kilowatts (kW) for a total project installed capacity of 1.35 megawatts (MW), typical generation ranges from 0.75 to 0.85 MW; (7) a 345-foot-long tailrace channel formed by a 33-foot high concrete guard wall; and (8) a transformer that connects the generators to the open market. The Saccarappa Project operates in a run-of-river mode.

The power turbines were historically connected to a one-mile-long, 2.3-kilovolt (kV) transmission line that terminated at the Warren mill on Cumberland Street in Westbrook, first passing through a transom in an abutment on the Bridge Street Bridge located directly downstream of the Saccarappa Project. In 2013, the Maine Department of Transportation began working on a new design to rebuild the Bridge Street Bridge.

The licensee stated in its surrender application that because it intended to cease power generation at the Saccarappa Project, it decided during the design process that it would be unnecessary to accommodate the existing transmission line in the new bridge design. On July 29, 2015, the transmission line went out of service. The licensee installed a transformer at the Saccarappa Project and tied the Saccarappa Project directly to the local utility distribution system. All power generated at the Saccarappa Project is now sold on the open market. Should the Commission approve the licensee's surrender application, the licensee would then remove this connection.

2.1.1.2 Mallison Falls Project

The Mallison Falls Project consists of the following facilities: (1) a 358-foot-long, 14-foot-high reinforced concrete, masonry, and cut granite diversion dam consisting of a 113.5-foot-long cut granite spillway section, a 174.5-foot-long reinforced concrete spillway section, and a 70-foot-long canal headgate structure; (2) a 0.5-mile-long impoundment extending from the Mallison Falls dam upstream to the tailwaters of the Little Falls Project, with a surface area of approximately 8 acres at normal headpond elevation of 90.6 feet USGS datum; (3) a 675-foot-long, 41-foot-wide, and 6-foot-deep bedrock-lined intake canal; (4) a 33-foot-wide by 51-foot-long reinforced concrete and masonry powerhouse; (5) two vertical Francis turbines direct-connected to generators, each with an installed capacity of 400 kW for a total project installed capacity of 800 kW; (6) a 675-foot bypassed reach; (7) an 11-kV transmission line tied into the Gambo Project transmission line; and (8) other appurtenances. The project operates in a run-of-river mode.

2.1.1.3 Little Falls Project

The Little Falls Project consists of the following facilities: (1) a 331-foot-long and 14-foot-high reinforced concrete and masonry dam incorporating a 160-foot-long spillway section, 101.5 foot-long spillway and sluice gate section, and a 70.5-foot-long intake structure; (2) a 1.7-mile-long impoundment extending from the Little Falls dam upstream to the Gambo dam, with a surface area of approximately 29 acres at normal headpond elevation of 108.7 feet USGS datum; (3) a 25-foot-wide by 95-foot-long masonry powerhouse which is integral to the dam; (4) four vertical Francis turbines direct-connected to generators, each with an installed capacity of 250 kW for a total project installed capacity of 1,000 kW; (5) a 300-foot-long bypassed reach; (6) an 11-kV transmission line tied into the Gambo Project transmission line; and (7) other appurtenances. The project operates in a run-of-river mode.

2.1.1.4 Gambo Project

The Gambo Project consists of the following facilities: (1) a 250-foot-long, 24-foot-high concrete overflow section, a concrete sluice gate structure, and 50-foot-long

canal intake structure; (2) a 3.3-mile-long impoundment extending from the Gambo dam upstream to the tailwaters of the Dundee Project, with a surface area of approximately 151 acres at normal headpond elevation of 135.13 feet USGS datum; (3) a 737-foot-long and 15-foot-deep concrete-lined intake canal; (4) a 47-foot-wide by 78-foot-long reinforced concrete and brick powerhouse; (5) two vertical Francis turbines direct-connected to generators, each with an installed capacity of 950 kW for a total project installed capacity of 1,900 kW; (6) a 300-foot-long bypassed reach; (7) an 8-mile-long, 11-kV transmission line; and (8) other appurtenances. The project operates in a run-of-river mode.

2.1.1.5 Dundee Project

The Dundee Project consists of the following existing facilities: (1) a 1,492-foot-long dam, consisting of a 175-foot-long, 50-foot-high earthen east embankment; a 1,050-foot-long, 50-foot-high earthen west embankment; a 90-foot-long concrete non-overflow section; a 150-foot-long, 42-foot-high concrete spillway; and a 27-foot-long gated concrete canal intake structure; (2) a 1.7-mile-long impoundment extending from the Dundee dam upstream to the tailwaters of the North Gotham Project (FERC Project No. 2519), with a surface area of approximately 197 acres at normal headpond elevation of 187.22 feet USGS datum; (3) a 44-footwide by 74-foot-long reinforced concrete powerhouse which is integral to the spillway section of the dam; (4) three horizontal Francis turbines direct-connected to the generators, each with an installed capacity of 800 kW for a total project installed capacity of 2,400 kW; (5) a 1,075-foot-long bypassed reach; (6) a 1,075-foot-long, 30-foot-wide, and 11-foot-deep tailrace; (7) two 10-mile-long, 11-kV transmission lines; and (8) other appurtenances. The project operates in a run-of-river mode.

2.2 PROPOSED ACTION

The licensee proposes to surrender the Saccarappa Project license and make the following modifications to the Saccarappa site: (1) remove the existing powerhouse and other ancillary structures; (2) remove the eastern and western spillways; (3) partially fill the existing tailrace; (4) construct a double Denil fishway within the filled tailrace area to provide fish passage over the lower falls; (5) alter and repair the tailrace guard wall to support the operation of the Denil fishway; (6) construct a fish counting facility at the exit of the Denil fishway; and (7) modify the bedrock in the eastern and western channels to facilitate nature-like fish passage over both the eastern and western sections of the upper falls.

For the amendments to the Mallison Falls, Little Falls, Gambo, and Dundee projects, the licensee proposes to: (1) amend the Mallison Falls Project license (the next upstream project from Saccarappa) to include the new double Denil fish passage facilities built at the Saccarappa Dam site; (2) extend by ten years, until 2053, the license

expiration dates for the Mallison Falls, Little Falls, Gambo, and Dundee projects; and (3) remove all fish passage requirements from the Gambo and Dundee licenses.

In its application, the licensee requested the Commission issue an order approving the surrender and decommissioning activities at Saccarappa by December 31, 2018. On April 18, 2018, the licensee requested a Commission order be instead issued by November 30, 2018 noting potential legal challenges and the desire to meet construction deadlines. For its construction timeline, the licensee proposed in its surrender application to start construction activities by June 1, 2019. Project operations at Saccarappa would shut down by August 31, 2019 and the licensee would finish construction and fish passage would commence at the Saccarappa fishway by May 1, 2021.

The licensee included a fishway operation and management plan with its amendment application for the proposed double Denil fishway to be built at the Saccarappa site and incorporated into the Mallison Falls license. This operation plan outlines the plan for the operation and maintenance of the fishway, as well as annually evaluating its effectiveness.

2.3 MODIFICATIONS TO APPLICANT'S PROPOSAL-MANDATORY CONDITIONS

2.3.1 Water Quality Certificate Conditions

The new 2018 WQC conditions that are specific to the Saccarappa Project decommissioning activities are summarized below:

- Condition 1- Standard conditions of Maine WQCs.
- Condition 2- The 2003 WQC relating to the operation of the existing hydroelectric project, shall remain in effect until initiation of project decommissioning activities and installation of fish passage facilities at the Saccarappa site. WQC conditions for the Saccarappa Project would remain in effect, including revised fish passage conditions, until the surrender of the project license becomes effective.
- Condition 3 requires that the licensee prepare and implement an erosion and sedimentation control plan for the Saccarappa dam removal and fishway installation.
- Condition 4 requires the licensee to prepare and implement a plan, in consultation with appropriate state and federal resource agencies, to coordinate the timing of project activities including dam removal to minimize the impact on fish passage and resident fish populations.
- Condition 5 requires that the licensee implement its Historic Properties Management Plan (HPMP) to protect Section 9 and 15 of the Cumberland

and Oxford Canal as it relates to erosion and that a written and photographic history of historic structures are preserved and recorded.[5]

- Condition 6 requires that any temporary access roads and cofferdam fill placed in the water way or floodway-boundary shall consist of clean stone fill or sandbagged clean granular fill and that all temporary access roads and cofferdam fill shall be removed after dam removal.
- Condition 7 requires all demolition debris and construction spoils be reused, recycled, or disposed of in accordance with state of Maine regulations.
- Condition 8 concerns requirements for curing of concrete.
- Condition 9 accepts the licensee's plan for a phased drawdown of the Saccarappa project's impoundment during dam removal activities.
- Condition 10 requires the licensee to monitor and implement bank stabilization measures as needed. Within one year of dam removal and fishway installation activities, the licensee is required to submit a report to Maine DEP detailing these monitoring and bank stabilization activities.
- Condition 11 requires the licensee to monitor newly exposed shorelines and river bottom areas following dam removal for invasive plant species for a period of one vegetative season.
- Condition 12 requires the licensee to monitor fish passage following dam removal and fishway installation, and to implement remedial actions as needed, as described in the Settlement Agreement, and as detailed in the Effectiveness Testing and Adjustment Plan- Exhibit B of the Settlement Agreement.
- Condition 13 concerns the requirement to monitor, report, and protect and/or extend upstream drainage and outfall structures as needed, in consultation with the affected parties.
- Condition 14 requires the licensee to provide to the City of Westbrook all potentially useful technical information to revise floodway maps for the Presumpscot River in the City of Westbrook and other affected towns to take into consideration the dam removal and fishway installation. Within six months of the removal of the spillways and reshaping of the eastern and western channels, the licensee must provide the Federal Emergency Management Agency technical engineering data regarding changes in flood flow elevations.
- Condition 15 requires the licensee to modify public boat access sites and existing private docks, as needed, to accommodate lowered water levels following dam removal and fishway installation.

[5] Historic properties are discussed in more detail in Section 3.3.6. This requirement is consistent with the licensee's existing HPMP and the MOA developed for the decommissioning activities at the Saccarappa Project.

The 2018 WQC also amends the April 30, 2003 WQC issued for the Presumpscot River Projects, and subsequent revisions to that WQC, to require construction of a fishway at the Saccarappa site by May of 2021 to include a counting, trapping, and sorting facility designed to pass at least 18,000 American shad, 109,000 blueback herring, and 273 Atlantic salmon annually.[6] For the Saccarappa Project, revised fish passage conditions are to remain in effect until at least the completion of project decommissioning activities and installation of fish passage facilities at the Saccarappa site. Fish passage requirements at the Mallison Falls, Little Falls, Gambo, and Dundee projects are also amended. For Mallison Falls and Little Falls projects, the requirement to install fish passage facilities is revised based on the number of specific species of fish passing in a single season at the Saccarappa fishway. The 2018 WQC states that no fish passage facilities are required at the Gambo and Dundee projects. Specifically, the 2018 WQC states the following regarding fish passage requirements for the five projects:

> **Saccarappa**. The 2018 WQC modifies Special Condition #5A of the 2003 WQC for the Saccarappa Project as follows:
>
> B. The applicant shall install and operate upstream passage facilities at the project:
>
> Phase I. A Denil fishway, or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 18,000 American shad, 109,000 blueback herring, and 273 Atlantic salmon annually. These facilities, which shall include a counting, trapping, and sorting facility, must be in operation no later than eight years after passage is available at the downstream Cumberland Mills dam.
>
> Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing target species, designed to pass up to 58,000 American shad, 353,000 blueback herring, and 426 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

[6] On February 14, 2017, the Commission amended the Presumpscot River licenses to extend fish passage deadlines pursuant to revised WQC conditions and Section 18 fishway prescriptions requiring fish passage at the Saccarappa Project by May 2019. *See S.D. Warren Company*, 158 FERC ¶ 62,093 (2017).

Mallison Falls. The 2018 WQC modifies Condition 5 of the 2003 WQC as follows:

A. Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, [Sappi North America, Inc.] shall either (1) two years thereafter construct and operate upstream and downstream fish passage facilities at the project in accordance with A., Phase I and Phase II, and B. of Section 5 of the 2003 Water Quality Certification for the Mallison Falls Hydroelectric Project (Project #L-19716-33-E-N) and as required by the Mallison Falls Project FERC license, or (2) three years thereafter surrender its FERC license, and remove, at a minimum, all dam spillways at the Project.

Upstream Fish Passage - Phase I. A Denil fishway or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 4,200 American shad, 26,000 blueback herring, and 32 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream Saccarappa Hydroelectric Project.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 44,000 American shad, 270,000 blueback herring, and 185 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources and the Department of Inland Fisheries and Wildlife of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species. Downstream Fish Passage. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Little Falls. The 2018 WQC modifies Condition 5 of the 2003 WQC, as follows:

A. Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, [Sappi North America, Inc.] shall either (1) two years thereafter construct and operate upstream and downstream fish passage facilities at the project in accordance with Section 5 A. of the 2003 Water Quality Certification for the Little Falls Hydroelectric

Project (Project #L-19715-33-E-N) and as required by the Little Falls Project FERC license, or (2) three years after removal of the Mallison Falls spillways, surrender its FERC license, and remove, at a minimum, all dam spillways at the Project.

Upstream Fish Passage - Phase I. A Denil fishway or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 3,100 American shad, 19,000 blueback herring, and 15 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream Saccarappa project.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 43,000 American shad, 263,000 blueback herring, and 168 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources and the Department of Inland Fisheries and Wildlife, of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

Downstream Fish Passage. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Gambo. The 2018 WQC modifies Condition 5 of the 2003 WQC as follows:

A. No fish passage facilities are required for the term of the FERC license issued on October 3, 2003 for the Gambo Hydroelectric Project, or for the term of any extension by amendment of that license.

Dundee. The 2018 WQC modifies Condition 5 of the 2003 WQC as follows:

A. No fish passage facilities are required for the term of the FERC license issued on October 3, 2003 for the Dundee Hydroelectric Project, or for the term of any extension by amendment of that license.

Fish passage conditions required by the 2018 WQC are further discussed in

Section 3.3.3, *Fisheries and Aquatic Resources*. On November 23, 2018 and December 14, 2018, Friends of Merrymeeting Bay filed comments regarding the legality of the 2018 WQC. In response to those comments, the following entities filed statements: Maine DMR, Conservation Law Foundation, Interior, City of Westbrook, and the licensee. A summary of these comments and reply comments are discussed in Section 3.3.3.3, *Comments Received Regarding WQC*. A copy of Maine DEP's full and amended WQC is attached to this DEA in Appendix A.

2.3.2 Section 18 Fishway Prescriptions

The Section 18 fishway prescriptions filed by FWS with the Commission on June 11 and 22, 2018 are consistent with the Settlement Agreement and the 2018 WQC and state the following:

Saccarappa (No. 2897)

1. The deadline for operational upstream passage for anadromous fish at the Saccarappa Project is extended until May 2021.

2. The third sentence of the second paragraph of Section 10.1(E) of the existing prescription is amended to provide as follows:

> "In order to allow for proper consultation with resource agencies and approval by the Commission of all design plans, permanent fish passage must be operational at the Saccarappa Dam within 8 years of the completion of fishway installation at Cumberland Mills Dam, or at such later time as may be designated by the Service by written notice to the Commission."

3. The section of Table 2 in the existing prescription that applies to anadromous fish upstream passage at the Saccarappa Project shall be amended as follows:

> "Upstream passage will be completed 8 years after passage is available at Cumberland Mills Dam, or at such later time as may be designated by the Service by written notice to the Commission."

4. Insert the following new language into the Saccarappa prescription:

> "Warren shall be responsible for operating and maintaining the Denil and supporting structures (including the fish counting facility and any remaining portions of the lower falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil

upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purposes of effectiveness testing."

Mallison Falls (No. 2932)

5A. Consistent with the Settlement Agreement, the Prescription is modified such that (per filing dated June 11, 2018):

> Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, Warren shall, two years thereafter, construct the fish passage as required by Section 10.2.2 of the prescription. The Service will stay the requirement for construction of fish passage, via a letter to the Commission, if, one year after the above trigger numbers are met, Warren has filed with the Commission an application to surrender the license for Mallison Falls and such application proposes to remove all dam spillways at the project. The Service retains the authority to lift or extend the stay, through a subsequent letter to the Commission, if Warren withdraws the surrender application, FERC denies it, or there are excessive or unnecessary delays in the surrender application process attributable to Warren's bad faith action or inaction. The requirement for construction of fish passage at Mallison Falls will be eliminated when FERC grants final approval to Warren to surrender its Mallison Falls FERC license.

5B. Insert the following new language into the Mallison Falls prescription (per filing dated June 22, 2018):

> "Upon the effective date of the surrender of the Saccarappa license, Warren shall be responsible for operating and maintaining the Saccarappa Denil and supporting structures (including the fish counting facility and any remaining portions of the lower falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purposes of effectiveness testing."

Little Falls (No. 2941)

6A. Insert the following new language into the Little Falls prescription (per filing dated June 22, 2018):

> "Upon the effective date of the surrender of the Saccarappa license, Warren shall be responsible for operating and maintaining the Saccarappa Denil and supporting structures (including the fish counting facility and any remaining portions of the lower falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purposes of effectiveness testing."

6B. Consistent with the Settlement Agreement, the Prescription is modified such that (per filing dated June 11, 2018):

> Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility (Trigger Date), Warren shall, two years thereafter, construct the fish passage as required by Section 10.2.3 of the prescription. The Service will stay the requirement for construction of fish passage, via a letter to the Commission, if, at some time less than two years after the Trigger Date, Warren has submitted a letter to the Service indicating an intent to remove the Little Falls project within six years from the Trigger Date. The stay shall be extended if, by one year after the Trigger Date, Warren has filed with the Commission an application to surrender the license for Mallison Falls and that such application proposes to remove all dam spillways at the Mallison project. The stay shall be further extended if, within three years from the Trigger Date, the Mallison Falls project spillway is removed, or Warren has made good faith efforts to do so within that time frame, and subsequently does so. The stay shall be further extended, if, within four years after the Trigger Date, Warren has filed with the Commission an application to surrender the license for Little Falls and that such application proposes to remove all dam spillways at the project. The Service retains the authority to lift or extend the stay, through a subsequent letter to the Commission, if Warren withdraws the surrender application, FERC denies it, or there are excessive or unnecessary delays in the surrender application process attributable to Warren's bad faith action or inaction. The requirement for construction of fish passage at Little Falls will be eliminated when FERC grants final approval to Warren to surrender its Little Falls FERC license.

Gambo (No. 2931) and Dundee (No. 2942)

7. Consistent with the Settlement Agreement, the Prescription is hereby modified to eliminate requirements for fish passage at Gambo and Dundee.

The fishway prescriptions are also discussed in Section 3.3.3, *Fisheries and Aquatic Resources*. A copy of FWS's full and amended fishway prescriptions is attached to the DEA in Appendix B.

2.4 STAFF ALTERNATIVE

As discussed below in the Environmental Analysis section, the staff alternative includes all of the licensee's proposed environmental measures, Maine DEP's WQC conditions, and FWS's section 18 fishway prescriptions.

In addition, staff recommends one new condition: implementing the MOA to mitigate adverse impacts to historic properties. Our justification for the above new condition is contained in our analysis below. All plans required by the WQC, fishway prescriptions, and MOA should also be filed with the Commission.

3.0 ENVIRONMENTAL ANALYSIS[7]

In this section, we describe the environmental setting for the Proposed Action and the scope of our cumulative effects analysis. We also present our analysis of the environmental effects of the Proposed Action. Sections are organized by resource area (water resources, recreation, etc.). Under each resource area, we first describe the current conditions. The existing condition is the baseline against which the environmental effects of the Proposed Action are compared, including an assessment of the effects of proposed mitigation, protection, and enhancement measures, and any potential cumulative effects. Our conclusions and recommended measures are discussed in Section 4.0, *Conclusions and Recommendations* of the DEA.

[7] Unless otherwise indicated, our information is taken from the licensee's March 23, 2018 surrender application for the Saccarappa Project (Sappi North America, Inc., 2018a), the licensee's amendment application filed March 23, 2018 for the Mallison Falls, Little Falls, Gambo, and Dundee Projects (Sappi North America, Inc., 2018b), and supplemental filings made by the licensee on June 14, June 25, July 5, and July 30, 2018. We also reviewed Commission staff's Final Environmental Impact Statement issued on June 2002, which analyzed the effects of relicensing the Presumpscot River Projects as proposed by the licensee in its January 22, 1999 application (FERC, 2002).

3.1 GENERAL DESCRIPTION OF THE RIVER BASIN

The Presumpscot River Projects are located on the Presumpscot River in southern Maine. The Presumpscot River originates at the outlet of Sebago Lake and extends approximately 25 miles to the Atlantic Ocean at Casco Bay. The five projects that are the subject of this environmental review span a river reach of about 12 miles from Windham (about 3 miles downstream of Sebago Lake) to Westbrook, about 10 miles upstream from Casco Bay. Seven tributaries feed the Presumpscot River between Sebago Lake and the Saccarappa Project. These include the Otter, Nason, Black, Colley Wright, and Inkhorn brooks, and the Pleasant and Little rivers.

The topography of the area is gently rolling and hummocky with a few isolated hills. Elevations range from lows of about 80 feet above mean sea level (msl) on the river in the vicinity of the Saccarappa Project to 188 feet msl north of the project between Sebago and Little Sebago lakes. The general geology of the area is typical of southern and central Maine. Igneous rocks and highly deformed metamorphic rocks underlie Wisconsin glacial sediments of variable composition and thickness, some of which are good sources of groundwater.

The climate in this region is highly influenced by the proximity of the North Atlantic Ocean. Precipitation averages approximately 43 inches per year, while average temperatures range from 22 degrees Fahrenheit (F) in the winter to 69 degrees F in the summer.

Vegetation in the vicinity of the projects is predominantly forest and brushland typical of the Northern Hardwoods Ecoregion of northern New England. The forest communities found along the river include mixed hardwood forest, coniferous forest, shrub/successional old field, and agriculture/maintained field.

The land bordering the river is primarily undeveloped in the upper reaches of the watershed, and becomes more developed and industrial downstream. There are eight hydroelectric developments along the river's length. In addition to the five Presumpscot River Project dams, there are two developments upstream and one downstream. The Eel Weir Hydroelectric Project, owned by the licensee, and the North Gorham Hydroelectric Project, owned by FPL Energy Maine Hydro, are located upstream of the Dundee Project. The now defunct Smelt Hill dam is located downstream of the Saccarappa Project at the mouth of Casco Bay. The Cumberland Mills dam, a non-powered dam, is located immediately downstream of the Saccarappa Project (Figure 1).

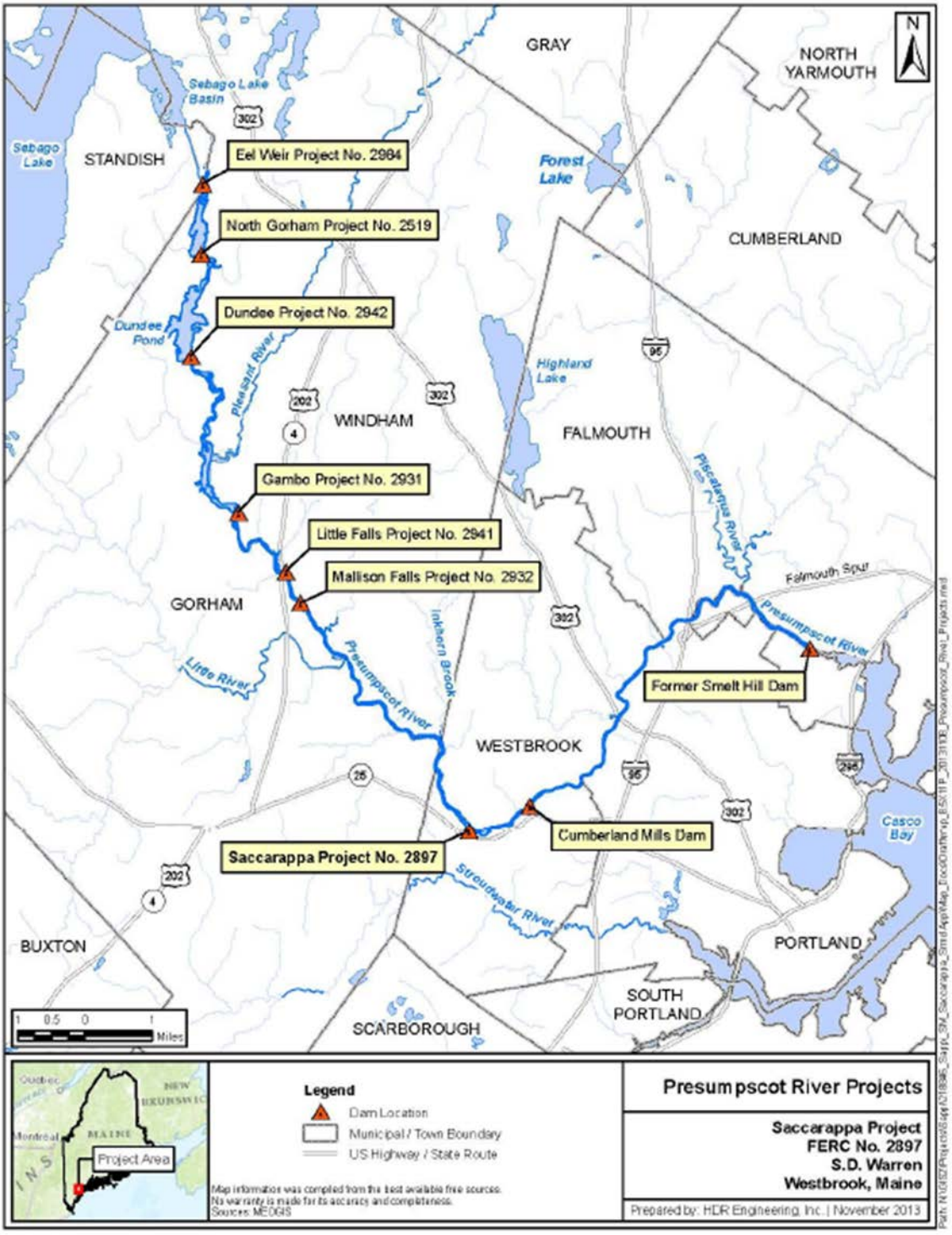

Figure 1. Location of the Presumpscot River Projects P-2897, P-2932, P-2941, P-2931, and P-2942. (Source: Sappi North America, Inc., 2018a).

3.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

According to the Council on Environmental Quality's regulations for implementing NEPA, a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time to include hydropower and other land and water development activities. Based on the licensee's pre-filing consultation and request for public comments, Commission staff have identified one cumulatively affected resources for analysis: fisheries and aquatic resources (migratory fish species).

3.2.1 Geographic Scope

The geographic scope of the environmental analysis defines the physical limits or boundaries of the Proposed Action's effect on the resources. The geographic scope of the effects analysis broadly includes the Presumpscot River and its contributing watershed, lands on and adjacent to the river and the tailrace/spillway areas, and confluences through the hydropower developments.

3.2.2 Temporal Scope

The temporal scope of the environmental analysis includes a discussion of the past, present, and reasonably foreseeable future actions and their effects on affected resources. The cumulative effects analysis in Section 3.5 focuses on the effects of reasonably foreseeable future actions on environmental resources at each project. Because the Commission's jurisdiction over the Saccarappa Project would end if the surrender is accepted, our analysis focuses on the probable time period for this to occur. Our analysis also considers the foreseeable fish passage plans for the five Presumpscot River projects and foreseeable future actions on the resources.

3.3 PROPOSED ACTION

3.3.1 Geologic and Soil Resources

AFFECTED ENVIRONMENT

Surface substrate in the Little Falls, Mallison Falls, and upper part of the Saccarappa impoundment consists of sand, gravel, cobble, boulders, and bedrock with only a small amount of silt/clay. The surface sediments in the lower part of the Saccarappa impoundment consist of a layer of predominantly fine-grained sediment (silt/clay). The Dundee and Gambo projects may be similar in substrate composition to

the Little Falls and Mallison Falls impoundments, although there may be a greater occurrence of fine-grained sediment because the upper reservoirs are larger and deeper than Little Falls and Mallison Falls.

ENVIRONMENTAL EFFECTS

The licensee proposes to remove the two spillways and other project facilities and install a double Denil fish passage facility at the Saccarappa site, which would lower the pool elevation by approximately 6 feet. The removal of the spillways is not expected to cause significant erosion of soils within the existing impoundment or in the project-influenced reach of the Little River, and is not expected to release significant sedimentation into the Presumpscot River or the Cumberland Mills impoundment immediately downstream from the Saccarappa Project.

The licensee proposes to undertake construction activities in a manner that minimizes soil erosion and the release of any sediment. In addition, the licensee would comply with the 2018 WQC that includes mitigation requirements as stated in conditions 3, 6, 9, and 10 listed above in Section 2.3.1. These conditions would require the licensee to implement erosion and sediment control measures during demolition and construction that have been approved by Maine DEP, use road and cofferdam fill that would have a low potential to increase turbidity and sedimentation, conduct the drawdown in a phased approach, and monitor and potentially stabilize banks following dam removal. We reviewed the licensee's Proposed Action, its method of deconstruction, and the specific soil erosion and sediment control conditions in the 2018 WQC. Although there may be some sediment released downstream during demolition activities, we believe such releases would be minor and short-term. The licensee should file its erosion and sedimentation plan required by condition 3 and 10 of the 2018 WQC for Saccarappa dam removal activities for Commission approval.

Additionally, in 2015, the licensee commissioned an engineering survey and site inspections for the purpose of evaluating the potential for future embankment instability and/or soil erosion within the river channel following removal of the spillways at Saccarappa (Appendix F, Sappi North America, Inc., 2018a). The findings of the survey and inspections show that in the lower reach upstream of the Saccarappa dam, there is little to no accumulated sediment. Therefore, lowering the impoundment by 6 feet and restoring a free flowing river in this area would not cause significant re-suspension of sediments.

3.3.2 Water Resources

AFFECTED ENVIRONMENT

Water Quantity

The current Saccarappa Project impoundment has a normal headpond elevation of 69.95 feet USGS datum and negligible usable storage capacity. The impoundment extends about 4.95 miles on the Presumpscot River upstream from the Saccarappa spillways and about 1.41 miles into the Little River upstream from its confluence with the Presumpscot River. The Saccarappa Project license incorporates, as Appendix A, the WQC issued April 30, 2003 that identifies specific water levels and flows for the project.[8] The 2018 WQC for the proposed surrender addresses the proposed lowering of the pool elevation by about 6 feet due to the removal of the two spillways and other project facilities at the Saccarappa site.

Water Quality

The Presumpscot River is classified as Class B waters from its confluence with the Pleasant River to U.S. Route 202 to Saccarappa. Class B is the third highest water quality classification and waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired. The dissolved oxygen (DO) content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean DO concentration may not be less than 9.5 parts per million and the 1-day minimum DO concentration may not be less than 8.0 parts per million in identified fish spawning areas. Discharges to Class B waters may not cause adverse impacts to aquatic life and the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

Maine DEP has identified instances of non-attainment of the Class B minimum DO criterion in the Gambo, Little Falls, Mallison Falls, and Saccarappa impoundments during both low and high flow events. During high flow events, non-attainment was likely due to non-point source pollution, but during low flow, non-attainment was due to the flow conditions caused by the impoundments.

[8] *S.D. Warren Company*, 105 FERC ¶ 61,013 (2003).

In 2002, as recommended by the Maine DEP, the licensee provided additional spillage flows of 50 cfs at Dundee Project and 100 cfs at the Gambo Project whenever river temperatures exceed 22°C, as measured at the Gambo Project before 8 a.m. It was predicted that the increased spillage, in addition to current bypass flow, would provide enough re-aeration to attain Class B concentrations of DO. This increased spillage became a condition of the 2003 WQC. In addition, as part of the condition, the licensee monitors the impoundments for DO.

Total phosphorous concentrations measured by Maine DEP in 1993 and during a study in 1990 indicated eutrophic conditions in the Saccarappa Project impoundment. Total suspended solids concentrations monitored during the study were low, ranging from 0.64 to 1.43 mg/l. Higher concentrations were measured in the tributaries (specifically in the Little River). Potential sources of eutrophication are agricultural runoff.

The licensee conducted a study of the benthic macroinvertebrate community in the Saccarappa Project study areas in 1997. Six sites were monitored in the stretch below the Dundee Project to the Saccarappa Project. One site was located in the middle of the Saccarappa impoundment. All sites were found to be attaining applicable aquatic life criteria. Specifically, the Saccarappa impoundment had the highest overall diversity when compared to the other sites and the combined diversity of caddisflies and mayflies was similar to the other two sites. Additionally, Maine DEP's monitoring included one site in the upper extent of the Saccarappa impoundment. The benthic community at this location was found to be attaining Class B standards.

ENVIRONMENTAL EFFECTS

For the proposed removal of the eastern and western spillways at the Saccarappa site, the licensee completed transects of the existing Saccarappa impoundment and Little River impoundment to assess the effect of the proposed drawdown on the impounded sections of the Presumpscot and Little Rivers. Removing the spillways would expose approximately 19 acres of previously inundated shoreline, leaving these areas susceptible to erosion from wind, rain, and other weather conditions. Such conditions may transport sediment to the river which could be suspended within the water column, resulting in impaired water quality. However, in the long term, vegetation on the existing embankment is expected to migrate into the exposed shoreline and eventually revegetate these areas.

During demolition, there may be increases in turbidity downstream of the licensee's proposed activities, though such effects would be minor and short term. In addition, condition 9 of the 2018 WQC requires a two-phase drawdown which requires the licensee to divert flow to the western channel while demolishing the eastern spillway. Following removal of that structure, the condition requires the licensee to divert flow to the eastern channel while removing the western spillway. In that way, the licensee would

conduct the work outside the active river channel, and any effect on water quality directly caused by construction activities could be more readily mitigated and limited in area while implementing erosion and sediment control measures required by condition 3 of the WQC.

The future elevation of the water in the river, after the Saccarappa spillways are removed, would be dependent on the distance upstream from the former dam and the flow in the river. At a river flow of 1,000 cfs, the water level in the section of river upstream of the Saccarappa site would be lowered by approximately 6.0 feet below the spillway crest elevation of 69.95 feet. In accordance with the 2018 WQC, the licensee should, in consultation with Maine DIFW, the City of Westbrook, and affected parties, take appropriate measures, as needed, to modify remaining public boat access sites and certain private docks, as necessary to accommodate lowered water levels following dam removal and fishway installation.

Removal of the Saccarappa dam spillways and installation of the fish passage facilities is expected to result in a decrease in water temperatures and an increase in DO levels during critical summer low-flow, high-temperature conditions. Removal of the Saccarappa dam is expected to result in an increase in the abundance and diversity of aquatic macroinvertebrates in the river upstream from the dam as a result of increased DO and decreased temperatures.

Newly poured concrete can be toxic to aquatic life unless properly cured prior to coming into contact with surface water. Installation of a double Denil fishway requires concrete work which may have a detrimental impact on water quality. The use of cofferdams to pour fresh concrete in the dry, and releasing flows over cured concrete equal to or exceeding 15 gallons per square foot, would mitigate any toxicity and ensure this work meets the water quality criteria of a pH less than 8.5.

The portion of the Presumpscot River that is the Saccarappa impoundment and the portion of the Little River impounded by the Saccarappa Project (approximately 6.36 miles in both rivers) would revert back to the conditions that existed prior to construction of the first hydroelectric development at the Saccarappa site. Approximately 4.4 miles of the Presumpscot River above Saccarappa would still have the appearance of an impoundment, because the bottom of the Presumpscot River from Saccarappa to Mallison Falls is below elevation 62 feet. The upstream portions of the impoundment would become a free flowing river. Water quality is expected to remain the same or improve with removal of the spillways.

3.3.3 Fisheries and Aquatic Resources

AFFECTED ENVIRONMENT

Resident Species

The existing fishery resources of the 12-mile reach of the Presumpscot River bounded by the Dundee, Gambo, Little Falls, Mallison Falls, and Saccarappa projects include self-sustaining resident warmwater species and the American eel. The eel is a catadromous species that spawns at sea and returns to freshwater as juveniles to grow. The current warmwater recreational fishery includes smallmouth bass, largemouth bass, yellow perch, brown bull head, and chain pickerel. There are also small numbers of coldwater salmonid species such as brook trout, brown trout, and landlocked American salmon. The Maine Department of Inland Fisheries and Wildlife (Maine DIFW) maintains a coldwater fishery in the upper reaches of the Presumpscot River and has stocked coldwater species including brook trout, brown trout, and landlocked Atlantic salmon between the Eel Weir dam (at Sebago Lake) and the Gambo tailrace, as well as within some of the larger Presumpscot River tributaries. The Maine DIFW has also stocked the tailrace area of the Mallison Falls Project. The Maine DIFW rates the habitat quality of the river, from Route 202 downstream (including the Mallison Falls project), as "medium" and the fishing quality as "low." Natural reproduction is listed as "high" similar to upstream reaches of the river including the Dundee and Gambo projects. The composition of the fish community at the five projects is similar to those reported for other nearby impoundments. There are differences in overall species composition between the more complex lacustrine impoundments (Dundee and Gambo) and the more riparian lotic impoundments (Little Falls, Mallison Falls, and Saccarappa). Fish habitat diversity and quality is generally higher at the Dundee and Gambo impoundments compared to Little Falls, Mallison Falls, and Saccarappa impoundments. Previous baseline fisheries studies indicate more suitable smallmouth bass habitat in the Dundee and Gambo impoundments. Limited natural reproduction of landlocked Atlantic salmon, brown trout, and brook trout has been reported in the Presumpscot River and its tributaries, although the exact extent is not known.

Anadromous/Catadromous Species

The Presumpscot River supported populations of Atlantic salmon, American shad, river herring (alewife and blueback herring), rainbow smelt, and American eel. The first documented dam was constructed in the 1730's. Due to decreasing runs of anadromous species, the installation of fish passage facilities at all dams on the Presumpscot River began in 1741. In 1802, a dam was built at the head of tide without fish passage. By the 1850's alewife and shad populations were decimated and sea-run Atlantic salmon were almost extirpated from the system. An 1867 report on the status of anadromous fish in Maine prompted a statewide program to construct fishways and

by 1887, all the dams on the Presumpscot River had fishways in place. Over the 10-year span following fish passage completion, the fishways fell into disrepair or were destroyed by flooding. Attempts to augment salmon populations through fry stocking in 1880 and 1890 were largely unsuccessful. Atlantic salmon were still reported in the tributaries to Sebago Lake in 1867, 1880, and 1882, but no runs of anadromous species were reported after 1900 (letter from George D. Lapointe, Commissioner, Maine DMR, Augusta, ME, January 24, 2001; and letter from Judith M. Stolfo, Agency Counsel, Interior, Newton, MA, February 2, 2001). The Smelt Hill dam, at head of tide, was removed in 2002 and currently two migratory species, American eel and alewives, utilize the Presumpscot River during a portion of their lives. Due to their ability to move over and around dams, American eel are found in all the impoundments and reaches of the river. A remnant population of American shad probably utilizes the river below the former Smelt Hill dam. Fish passage was completed at the Cumberland Mills Dam in 2013, downstream of the Saccarappa project.

The Dundee impoundment has well established, self-sustaining smallmouth bass and panfish populations, with some larger bass, yellow perch, and brown bullhead available to support a recreational fishery. It also supports a limited trout and salmon fishery in the winter and spring. The Gambo impoundment supports a more limited fishery for smallmouth bass and yellow perch. The three downstream impoundments (Little Falls, Mallison, and Saccarappa) provide lower quality habitat for many species of fish inhabiting these reaches of the Presumpscot River. Below the Saccarappa dam there is likely the same assemblage of fish found above Saccarappa, except that below Cumberland Mills, some migratory fish (alewives, blueback herring, American shad, and striped bass) may be present as a result of the removal of the gates at the Smelt Hill dam. American eel are fairly common in all of the impoundments.

Threatened or Endangered Species

No federally listed endangered or threatened fish or aquatic species are in the vicinity of these projects.

Fisheries Management

The Maine DIFW has managed the Presumpscot River to promote a season-long naturally reproducing recreational bass fishery and a limited seasonal salmonid fishery by stocking for brown trout, brook trout, and landlocked American salmon in the tailraces of the Dundee, Gambo, and Mallison Falls projects. In the past, the river was not managed for restoration of wild stocks of salmonid species and is classified as a low-priority river for salmon restoration. Recent management goals for the river and connected water bodies include the enhancing of migratory routes, spawning and rearing habitat for restoration of anadromous species including alewives, blueback herring, American shad, striped bass, Atlantic salmon, and possibly Atlantic sturgeon, rainbow smelt, sea-run

brook and brown trout and tomcod; provide migratory routes and habitat suitable for American eel, sustain the production of existing riverine and targeted anadromous and catadromous species, manage the fisheries in accordance with interstate fishery management plans, promote the existing and potential commercial and sport fisheries for diadromous and resident species, establish a recreational fishery for stocked trout in the mainstem and manage specific tributaries for the production of wild brook trout. The overall management goals are designed for two phases. The first phase would restore anadromous fish up to the base of Gambo dam and phase two would restore them up to the base of Eel Weir dam. Phase two would not proceed until the fishery agencies evaluated the results of the first phase and agreed to continue with phase two.

ENVIRONMENTAL EFFECTS

Continued operation of the projects would obstruct the upstream and downstream passage of anadromous and catadromous species that inhabit the downstream reaches of the Presumpscot River since the removal of the Smelt Hill dam and passage installation at the Cumberland Mill dam. Presently, the project area is subject to impoundment fluctuations or maintenance drawdowns which can adversely affect fish populations by decreasing spawning success and reducing juvenile survival. Drawdowns can expose spawning nests and dewater eggs and larvae or cause shallow spawning fish to abandon nests, resulting in higher predation on the eggs and larvae that remain in the nest.

Drawdowns also displace juvenile fish from shallow vegetated areas that provide refuge from predators. Impoundment fluctuations may also reduce prey for juvenile fish by stranding and dewatering benthic macro invertebrates and decreasing prey production. Spillage from flow changes at the projects may result in fish stranding and flushing of fish from habitat reaches in the river. Removal of the dam and power producing activity would eliminate these impacts.

American eels are already present in the river and would benefit from the upstream and downstream fish passage improvements at the Saccarappa project.

Restoration of Atlantic salmon is proposed for the Presumpscot River up to the Eel Weir dam and anadromous clupeids (American shad, Alewife, and blueback herring) as far upstream as the North Gorham dam. This would be dependent on productive habitat (spawning and rearing) available which would be increased upon removal of the Saccarappa project dam. Blueback herring are known to prefer spawning in faster currents and over hard surfaces while alewives utilize ponded habitat preferentially. Removal of the dam may increase Blueback herring production but loss of impounded habitat may negatively affect alewife production versus a fish passage facility (maintaining the dam intact).

The licensee is required by the 2018 WQC to develop a plan for the coordination of dam removal activities, developed in consultation with state and federal fisheries agencies, to minimize impacts on fish passage and resident fish populations to be approved by Maine DEP prior to the initiation of dam removal activities. The plan should detail when temporary access roads and cofferdams would be removed in accordance with 2018 WQC condition 6 and when the phased drawdown of the Saccarappa impoundment would occur in accordance with 2018 WQC condition 9. This plan should also be filed with the Commission. Additionally, the fishway operation and management plan provided in the licensee's application should be approved by the Commission, also in accordance with 2018 WQC condition 12 and fishway prescriptions 4, 5B, and 6A, to clarify how the double Denil fishway would be operated and maintained.

3.3.3.1 Comments Received During Public Comment Period Regarding Fish Passage

This section summarizes the comments the Commission received during the public comment period of the May 11, 2018 notice specific to fish passage concerns.

Maine Department of Marine Resources

In comments filed with the Commission on May 22, 2018, the Maine DMR notes that it is a signatory to the Settlement Agreement with the licensee regarding the surrender of the Saccarappa project. The Maine DMR says the Settlement Agreement is consistent with its long term management plan for the Presumpscot River and its implementation is necessary to achieve the goals of the plan. The intent of that plan, according to the licensee, developed in 2001 with Maine DMR and other state agencies, is to integrate the fishery management goals so as to cooperatively manage the diadromous and resident fishes of the Presumpscot River for optimum habitat utilization, abundance, and public benefit. The plan has two phases with the final phase being the restoration of fish up to the base of the North Gorham dam. The Maine DMR believes that the Settlement Agreement, agreed to with the licensee and other signatories such as FWS, Friends of the Presumpscot River, Conservation Law Foundation, and the City of Westbrook, is reasonable and consistent with its restoration plan for the Presumpscot River. The Settlement Agreement contains important provisions for fish counting, effectiveness testing, and ongoing operation and maintenance of the fishway. To reach that agreement, changes to fish passage requirements at Mallison Falls, Little Falls, Gambo, and Dundee were needed. While fish passage requirements for Gambo and Dundee were removed from their licenses, the requirements for Mallison Falls and Little Falls are in effect with the option to remove the spillways. Maine DMR notes that restoration of anadromous species in the Presumpscot River has just begun and that restoring riverine habitat and fish populations below Gambo and Dundee is the most important objective at this stage of the restoration effort. Therefore Maine DMR believes

these changes are justified and appropriate for fisheries management of the Presumpscot River.

Conservation Law Foundation and Friends of the Presumpscot River

Conservation Law Foundation and Friends of the Presumpscot River stated in comments filed with the Commission on June 11, 2018, that they committed time and associated resources in order to achieve safe, timely, and effective fish passage at the Saccarappa site, which it believes contains a large amount of excellent riverine spawning and rearing habitat (the first such habitat on the river), which will significantly advance the likelihood of the successful, long-term restoration of sea-run fisheries in the entire river. It has worked on a multi-party effort since 2013 resulting in the execution of the Settlement Agreement. They note that approval of the Settlement Agreement will save time and money, avoid the need for protracted litigation, and continue to promote the development of positive relationships among entities who will be working together during the course of surrender implementation and for years thereafter. Conservation Law Foundation and Friends of the Presumpscot River are aware that the altered habitat and present-day conditions of the Presumpscot River require significant intervention to restore river herring and American shad populations and that the surrender of the Saccarappa project and the development of a restoration plan play a major role in that implementation. Conservation Law Foundation and Friends of the Presumpscot River are concerned that absent the Settlement Agreement, the licensee cannot be compelled to implement such a restoration effort. They refer to the Commission's Decommissioning Policy Statement that once a license is surrendered, the Commission does not maintain general, ongoing jurisdiction at the former project site, and the terms of a surrender application proposed either by the licensee alone or in the settlement context have to take this situation into account. They also surmise that unless an agreement was reached, the licensee was prepared to challenge the legal authority of the Commission to pay for and maintain all those measures as a condition of surrender. The terms of the Settlement Agreement and the resulting surrender application address and solve each of these problems, and do so in a non-litigious way that satisfies the licensee, the state and federal agencies charged with protecting the fishery resources of the river, and the non-governmental organizations (NGOs) with demonstrated longstanding involvement in restoration. Conservation Law Foundation and Friends of the Presumpscot River state that, in their research and study of previous Commission surrender decisions, they have been unable to locate a single Commission surrender decision in which such extensive, important fish passage measures have been agreed upon by the applicant for surrender, or even ordered by the Commission. The difficult issues resolved by these measures, combined with the significant public recreation and access benefits of the surrender application and the fact that the applicant who is relinquishing its right to operate this project agrees to undertake these measures, all demonstrates that the terms of surrender application are very much in the public interest.

Conservation Law Foundation and Friends of the Presumpscot River believe that amending the Mallison Falls, Little Falls, Gambo, and Dundee licenses is consistent with the statutory standards of the FPA. During the 2003 relicensing proceeding, the licensee and intervenor parties supported the Commission's decision to conduct a single, integrated licensing review process. Consistent with this approach, Maine fishery agencies submitted to the Commission a comprehensive plan that set forth a two-phase approach to fisheries restoration and requested, along with the FWS and the NGOs, that FERC reconsider dam removals at the Saccarappa, Mallison Falls, and Little Falls sites to most quickly and fully achieve the first phase of sea-run fish restoration. The Commission adopted both the restoration ends and the approach of examining all the projects and their impacts through a holistic, balanced lens. Licensing decisions were based on each project's impact in affecting the other projects and the river system as a whole. Conservation Law Foundation and Friends of the Presumpscot River believe that the Commission should also approach the requested license amendments and their impacts on fisheries restoration with a holistic, comprehensive, equal consideration lens. They note that the requirements for fish passage at Mallison Falls and Little Falls will not change except to facilitate a more rapid surrender of those projects if the licensee decides not to build fishways. Conservation Law Foundation and Friends of the Presumpscot River contend that, when viewed with a comprehensive, equal consideration lens, the combination of the extensive and unprecedented fish passage provisions voluntarily proposed at the to-be-surrendered Saccarappa site, along with both the recreational amenities secured and the expedited dam removal pathway established at the Mallison Falls and Little Falls sites will end up being, at most, modest delays in fish passage far upriver. Conservation Law Foundation and Friends of the Presumpscot River are convinced that these plans embody the requirements and standards of the FPA. Conservation Law Foundation and Friends of the Presumpscot River believe that if no American shad, river herring, and other species pass at Saccarappa, the comprehensive planning and equal consideration decisions in the 2003 relicensing will become irrelevant in changed circumstances and legal uncertainties. They believe that delaying fish passage at Gambo and Dundee will not setback agency fish restoration goals for the river. In fact, they argue, the amendments will advance restoration by targeting available resources to a site most critical for restoration success. Finally, they state the Settlement Agreement and surrender application were the result of years of good faith efforts undertaken by the parties and that rejection of the surrender application will lead to a contracted, contentious, and protracted uncertainty for anadromous fish restoration in the Presumpscot River.[9]

[9] We note that Conservation Law Foundation and Friends of the Presumpscot River filed comments on June 11, 2018 in response to Friends of Sebago Lake comments filed June 4, 2018. These comments largely center on disputing the level of engagement of Friends of Sebago Lake in various state and federal proceedings concerning fish passage issues associated with the Presumpscot River projects. These comments are not summarized here.

Friends of Sebago Lake

In comments filed with the Commission on June 4, 2018, Friends of Sebago Lake notes that while it is not a signatory to the Settlement Agreement, it intervened in the relicensing of the five Presumpscot River projects in 2003. Friends of Sebago Lake believes it has been denied the right to participate in the consultation and negotiation process that resulted in the execution of the Settlement Agreement and that this consultation was conducted in secrecy. Friends of Sebago Lake asserts that it provided critical 'backroom work' that formed the bulwark of the defense for the Maine DEP in court proceedings related to fish passage on all the Presumpscot River dams. Friends of Sebago Lake states its goal is to maintain the phased fish passage deadlines at Gambo and Dundee found in the 2003 Maine WQC and FERC license.

Friends of Sebago Lake states the application for surrender and amendment is a license compliance issue and that the licensee has already been granted numerous extensions of deadlines to implement the fish passage requirements of the Presumpscot River licenses. It believes that the combination of the Saccarappa surrender and amendment of the other licenses is only an out-of-time re-argument of the 2003 license and original Maine DEP WQC applications.

Friends of Merrymeeting Bay/Ed Friedman

In comments filed with the Commission on May 31, June 5, and June 11, 2018, Friends of Merrymeeting Bay and Ed Friedman noted several issues with the surrender application: (1) they believe that the application and subsequent Settlement Agreement exceeds jurisdictional purview in that it limits conditions affecting upstream licensed projects comprising 75% of the upper Presumpscot River watershed; (2) they note that the proposed measures at the four upstream projects reduces the potential for positive restoration of fish passage; (3) they believe that the license amendments for the upstream projects are not ripe for review as the triggers for fish passage have not been reached and may not be reached in the near future; (4) they believe that the modification to the Maine WQC degrade the native fishery restoration since it's a re-argument and reopening of the 2003 WQC's and licenses; (5) that the removal of fish passage requirements at Gambo and Dundee is a violation of state water quality standards by changing the designated use and this can only be done by an act of the State legislature; (6) states that most Presumpscot River/Sebago fish habitat is upstream of Mallison and Gambo and that more fish will be restored if access above these projects is implemented; (7) that the FWS and Maine DMR have conflict of interest as signatories of the Settlement Agreement and cannot offer objective review of the surrender application; (8) that the Settlement Agreement has significant failures related to fish stocking and restrictive species biological triggers and finally; (9) the surrender application incorporates previous testimony of the Maine DMR in the 2009 Cumberland Mills fishway proceeding and court decision upholding the 2003 Maine WQC.

American Whitewater Association

The American Whitewater Association (American Whitewater) filed comments with the Commission on June 8, 2018 in which it noted that while it participated in the 2015 surrender application process, it was not invited to participate in negotiations for the Settlement Agreement. It is agreeable to the application to provide safe, timely, and effective fish passage, but notes that impacts on recreational use and river navigability must be considered as well. Because American Whitewater's comments are largely concerned with recreational issues, these comments will be further discussed in Section 3.3.7, *Recreation, Land Use, and Aesthetics.*

City of Westbrook

In comments filed June 8, 2018, the City of Westbrook states that is has been an active participant in the discussions that led to the Settlement Agreement that underlies the licensee's surrender application. The City of Westbrook states it was instrumental in facilitating the agreement among various constituent groups and offering funding and technical support for issues that arose during the consultation process. The City of Westbrook notes that if the parties failed to reach agreement, the project site located in the heart of the City's downtown would have been subject to years of litigation with the resultant delay in the City's efforts to restore lands available for public use and enjoyment. The City of Westbrook notes that the Presumpscot River corridor is an important resource to its citizens, the activity furthers the public interest, and strongly supports the request for surrender along with the concomitant restoration of the Saccarappa project site for public access and fish passage.

Town of Standish

On June 8, 2018, the Town of Standish filed comments with the Commission stating that on April 10, 2018 the town council resolved to support the 2003 license and fish passage requirements and was opposed to the surrender application that includes the removal of fish passage requirements at Gambo and Dundee. The Town of Standish believes that removal of those requirements would remove from its citizens the economic and ecosystem value derived from restoration of anadromous fish to the entire Presumpscot River watershed. The Town of Standish notes that its community relies heavily on tourism, which would be bolstered by increased fish stock diversity but also appreciates the intrinsic value of a natural river system. It is concerned that fish restoration to the upper Presumpscot River and Sebago Lake would be delayed until 2053 and believes it has the responsibility to act as stewards of natural resources in the Town.

Natural Resources Council of Maine

On June 11, 2018, Natural Resources Council of Maine (NRCM) filed comments in support of the application stating that in return for allowing surrender of the Saccarappa license, the Commission should impose conditions on this surrender that are consistent with FERC's public interest determination over a decade ago to correct the imbalance between hydropower generation and the ecological health of the river. NRCM states that it supports the Settlement Agreement, noting that it presents the best outcome for restoration of fish passage on the Presumpscot River in the foreseeable future. It notes that the Saccarappa site has been heavily altered over time and cannot effectively pass fish upstream without state-of-the-art engineering and monitoring. NRCM believes that the application to monitor and maintain the double Denil fishway at Saccarappa is in the public interest and will achieve the goals of future fish restoration in the river.

Maine Rivers

Maine Rivers states in comment filed with the Commission on June 11, 2018, that it is the only statewide organization to focus on the ecology and health of Maine's rivers and has participated in discussions of the surrender application. It believes that restoring the balance between ecological health of the river and its industrial uses is key. It notes that the decision in the surrender application will have implications for other locations in Maine. Finally it notes that its members and supporters live near the river and take advantage of its resources for recreation and other pursuits.

Trout Unlimited (Sebago Chapter)

In comments filed with the Commission on June 11, 2018, the Sebago Chapter of Trout Unlimited (Sebago TU) states that its members regularly fish in the Presumpscot River and its tributaries and has completed numerous conservation projects in the watershed. Sebago TU supports the surrender application including the removal of Saccarappa dam and amendment of the upstream licenses. It has submitted comments in support of the Settlement Agreement and notes that restoration of fish passage at Saccarappa is critical to the ultimate restoration of fish to the upper watershed. Sebago TU believes that without the restoration at the Saccarappa site, fish restoration of native sea-run fish species to the upper reaches of the river will not be possible.

U.S. Fish and Wildlife Service

FWS filed its fishway prescriptions for Saccarappa, Mallison Falls, Little Falls, Gambo, and Dundee on June 11, 2018, with modification filed June 22, 2018 as described above. In its June 11, 2018 filing with the Commission, FWS also provided a discussion of its involvement in the Settlement Agreement process and an analysis of available fish population information to support its decision to sign the Settlement

Agreement. FWS notes that there has been no active stocking of American shad on the Presumpscot River but they have instead naturally colonized the river following removal of the Smelt Hill Dam. At the time of filing its letter with the Commission, the FWS notes that few shad have passed the Cumberland Mills fishway. Blueback herring population growth has been slow and very few blueback herring have been stocked in the Presumpscot River. The 2018 fishway prescriptions retain the fish passage trigger numbers for the Mallison Falls and Little Falls projects, but allows for delays to accommodate license surrender and removing spillways should that be pursued as an alternative to building fishways at these two projects. Considering available fish population numbers, FWS estimates, based on Maine DMR's blueback herring population growth models, that the Mallison Falls trigger for installing fish passage based on fish passage numbers at the Saccarappa fishway could be achieved no earlier than 2028. FWS reasons that maintaining trigger numbers from its original 2002 fishway prescription required by the 2003 license in exchange for fish passage at the Saccarappa site will provide a biological benefit to the system. It notes that without passage facilities at Saccarappa, shad and blueback herring restoration in upstream waters will not be possible.

FWS also stated in their June 11, 2018 filing that it analyzed current population levels of blueback herring and observations of species' recovery rates on other Maine rivers, such as the Kennebec and Saco rivers, and concludes that the fish passage triggers currently required at Gambo and Dundee would not be reached for many years, if not decades. FWS notes that eel passage requirements are still in place for the Dundee and Gambo projects and that it would revisit fishway prescriptions at the time of relicensing these projects. Even with the much improved fish passage anticipated by the Settlement Agreement, it is uncertain whether there would be fish in sufficient numbers to trigger fish passage at Gambo and Dundee during the term of the existing licenses. FWS concludes that under the original 2002 fishway prescription required by the 2003 license, passage at Gambo and Dundee was unlikely to be triggered until well into the future, FWS does not believe it has conceded much time, if any, in providing for passage at Gambo and Dundee. Even with the much improved fish passage anticipated by the Settlement Agreement conditions, it is uncertain whether there would be fish in sufficient numbers to trigger fish passage at Gambo and Dundee during the term of the existing FERC licenses.

Maine Department of Marine Resources

Maine DMR notes that it is a state agency with responsibility for the conservation and development of marine and estuarine fish resources and has extensive experience in restoring alewife, American shad, and blueback herring to both natural and impounded habitat throughout Maine. It, along with other agencies and organizations consulted and negotiated an agreement forming the basis for the surrender of the Saccarappa project and amendment of the upstream licenses. Maine DMR states that the Settlement Agreement

is consistent with the long term management plan for the Presumpscot River and that approval of the application that is consistent with the Settlement Agreement is crucial to the achievement of the management goals of the plan. Maine DMR states that in 2001 a "Draft Fishery Management Plan for the Presumpscot River Drainage" was developed by it, the Maine DIFW and the Maine Atlantic Salmon Commission. The plan anticipated a phased approach with Phase I restoring fish up to the Gambo dam. Phase II would then restore fish up to the base of the North Gorham dam. Maine DMR entered into negotiations with the licensee and others to develop the Settlement Agreement since it was concerned how the surrender application would be reviewed including the effectiveness of fishway designs and lack of post surrender operations and maintenance plans. The Settlement Agreement contains important provisions for fish counting, effectiveness testing, and ongoing operation and maintenance of the fishway. In order to reach agreement on these provisions, Maine DMR found it necessary to agree to changes in fish passage requirements at the upstream projects. At Mallison Falls, the current trigger for fish passage remains in effect although the licensee has the option to surrender and remove those project works within three years of the trigger. At Little Falls the licensee will construct fish passage as required by the current license or surrender its license and remove the project within three years after removal of the Mallison Falls project. Finally, fish passage at Gambo and Dundee would be deferred until the end of their license terms.

Maine DMR believes that for the above reasons, implementation of the Settlement Agreement is essential. Restoration of anadromous fish species on the Presumpscot River has just begun and the upstream license amendments are consistent with and support Maine DMR's restoration efforts. It notes that American shad have only had two generations to utilize spawning habitat in the lower watershed that became available when the Smelt Hill dam was removed in 2002. Eight years ago, Maine DMR began annually stocking river herring (alewives and some blueback herring) into the Saccarappa headpond but the stock of blueback herring remained low until 2016. Given the current low numbers of American shad and apparent lack of blueback herring that have passed the Cumberland Mills dam (species that trigger passage dams upstream of Saccarappa), Maine DMR believes the changes at Gambo and Dundee to be reasonable in exchange for the superior design of fish passage at Saccarappa. Maine DMR states that restoration of these species below Gambo and Dundee is the most important objective at this stage of restoration effort on the Presumpscot. With the removal of Saccarappa, the river will be restored to a free flowing one with improved oxygen and temperature regime and better light penetration resulting in valuable spawning habitat below Gambo. Maine DMR compares recolonization of American shad on the nearby Saco River, which since 1993 has only passed a maximum of 16,459 fish in one year (2015). Since no shad have been documented at the Cumberland Mills site, Maine DMR believes that recolonization could easily take until 2053. Finally, Maine DMR states that a consistent order for surrender will provide for regulatory oversight of the double Denil fishway and ensure ongoing maintenance and operations of the fishway are the responsibility of the licensee and/or its

successors. The operation of the counting facility is essential to the fish passage triggers at the upstream dams. That and the ongoing testing of the effectiveness of the facility would be funded by the licensee and provide for any future adjustments in order to obtain effective and timely fish passage at the site.

3.3.3.2 Fish Passage Conditions and Response to Public Comments Regarding Fish Passage

Conditions regarding fish passage were filed by FWS and Maine DEP through section 18 fishway prescriptions and a WQC, respectively. Both sets of conditions change existing fish passage requirements for all five projects. The conditions are consistent with each other and are in keeping with the Settlement Agreement.

Friends of Merrymeeting Bay, Ed Friedman, and the Town of Standish filed comments opposing the deletion of fish passage requirements for the Gambo and Dundee projects through the revised fishway prescriptions and 2018 WQC filed by FWS and Maine DEP, respectively. Friends of Merrymeeting Bay and Ed Friedman argue that they would "suffer particularized injury from delays to and possible elimination of fish passage on the Presumpscot River and in the Sebago Lake watershed" noting that Friends of Merrymeeting Bay and Ed Friedman have spent considerable time and money in active pursuit of diadromous fish restoration on the river. The Town of Standish characterizes the further modifications to fish passage conditions at these projects as a "taking from Standish citizens of the great economic and ecosystem value that will be derived from restoring anadromous fish to the entire Presumpscot watershed region."

In response to these comments, we reference Maine DMR's and FWS's comments detailed above. Given the current low numbers of American shad and apparent lack of blueback herring that have passed the Cumberland Mills dam, Maine DMR believes the deletion of fish passage requirements at Gambo and Dundee to be reasonable in exchange for the superior design of fish passage at the Saccarappa site. Since no shad have been documented at the Cumberland Mills site, Maine DMR believes that recolonization could easily take until 2053. FWS also stated in their June 11, 2018, filing that its analysis of current population levels of blueback herring provided by Maine DMR and observations of species' recovery rates on other Maine rivers, such as the Kennebec and Saco rivers, have led it also to conclude that the fish passage triggers currently required at Gambo and Dundee would not be reached for many years, if not decades, and it would revisit fishway prescriptions at the time of relicensing the projects. According to FWS, even with the much improved fish passage anticipated by the Settlement Agreement, it is uncertain whether there would be fish in sufficient numbers to trigger fish passage at Gambo and Dundee during the term of the existing licenses.

Commission staff finds the resource agencies assessments reasonable regarding the likelihood of fish passage at the Gambo and Dundee projects, even under existing

license conditions. For fish passage at the upstream projects to be feasible, the downstream projects must allow for it and the surrender and amendment applications provide such a plan. We agree with FWS and Maine DMR that removing fish passage at Gambo and Dundee is a reasonable compromise in exchange for greatly improved passage at the Saccarappa site. With the passage of anadromous fish at the downstream Cumberland Mills site, it is critical that these populations reach further into the watershed to be able to begin reestablishing migration cycles into the Presumpscot River. It is a well-accepted practice to establish migrating populations into the lower watershed successfully before expanding access to upper watershed habitats.

3.3.3.3 Comments Received Regarding WQC

Comments on the 2018 WQC were filed with the Commission on November 23, 2018 and December 14, 2018 by Friends of Merrymeeting Bay. Friends of Merrymeeting Bay states in its comments that it believes the 2018 WQC violates state and federal law by eliminating existing and designated uses for waters above the Gambo and Dundee dams, specifically referring to migratory fish. In response, the following entities filed reply comments: Maine DMR and the licensee on November 29, 2018; the City of Westbrook, Interior, and the Conservation Law Foundation and Friends of the Presumpscot River on November 30, 2018.

Friends of Merrymeeting Bay questions the legality of the 2018 WQC. In response, the licensee, Maine DMR, City of Westbrook, Interior, Conservation Law Foundation and Friends of the Presumpscot River note that Friends of Merrymeeting Bay was a participant in the 2018 WQC proceeding but did not file an appeal of the 2018 WQC with the Maine DEP or challenge the WQC through state courts.

Commission staff considers the 2018 WQC final and will incorporate the mandatory conditions of the 2018 WQC into any Commission order which may arise from this proceeding.

3.3.4 Wildlife and Terrestrial Resources

AFFECTED ENVIRONMENT

Wildlife

Wildlife habitat occurs within the riparian zone of the Presumpscot River. The interface between land and water provides edge habitat, benefitting species utilizing aquatic and terrestrial habitats. This riparian zone also provides wildlife with undeveloped travel corridors. Table 2 below provides a summary of wildlife grouped by habitat cover type potentially occurring in the vicinity of the Presumpscot River projects.

Table 2: Wildlife potentially occurring at the projects (Sappi North America, Inc. 2018a.)

Class	Species
	Mixed Hardwood Forest
Mammalian	Deer mouse, chipmunk, red squirrel, smoky shrew, northern flying squirrel, woodland jumping mouse, coyote, gray and red fox, porcupine, southern red-backed vole, red squirrel, snowshoe hare, white-tailed deer, black bear, moose
Avian	Red-eyed vireo, American redstart, very, hairy woodpecker, eastern wood peewee, ruffed grouse, white-throated sparrow, dark-eyed junco, purple finch, northern water thrush, mourning warbler, Canada warbler, black-throated blue warbler, Tennessee warbler, hermit thrush, red-tailed hawk, broad-winged hawk, common raven, blackcapped chickadee, brown creeper, golden-crowned kinglet, oven bird, northern oriole, cedar waxwing, wood thrush, wild turkey
Amphibian	Redback salamander, northern dusky salamander, blue-spotted salamander, Jefferson salamander, gray treefrog, spring peeper, wood frog, American toad
Reptilian	Eastern garter snake, eastern milk snake, ringneck snake, redbelly snake, wood turtle
	Coniferous Forest
Mammalian	Fisher, deer mouse, red squirrel, smoky shrew, longtailed shrew, southern red-backed vole, gray squirrel, northern flying squirrel, woodland jumping mouse, snowshoe hare, coyote, white-tailed deer, black bear, moose, bobcat, porcupine
Avian	Warblers, evening grosbeak, blue jay, golden-crowned kinglet, solitary vireo, pine grosbeak, red crossbill, boreal chickadee, pileated woodpecker, hairy woodpecker, black-capped chickadee, red-breasted nuthatch, purple finch, winter wren, hermit thrush, dark-eyed junco, Swainson's thrush, pine siskin
Amphibian	Wood frog, redback salamander, American toad
Reptilian	Eastern garter snake, eastern milk snake, redbelly snake, ringneck snake
	Shrub/successional field
Mammalian	Striped skunk, field mouse, red fox, eastern mole, meadow jumping mouse, meadow vole, woodchuck, white-tailed deer

Avian	American robin, short-cared owl, American tree sparrow, eastern screech owl, eastern bluebird, red-tailed hawk, vesper sparrow, savannah sparrow, mourning warbler, Tennessee warbler, barn swallow, brown-headed cowbird, eastern meadowlark, American crow, American kestrel
Reptilian	Redbelly snake, smooth green snake, eastern garter snake, eastern milk snake
	Palustrine forested wetlands
Mammalian	White-tailed deer, moose, raccoon, water shrew, snowshoe hare, red squirrel, northern flying squirrel
Avian	Northern saw-whet owl, belted kingfisher, red-eyed vireo, American redstart, redbellied woodpecker, pileated woodpecker, yellow warbler, ruffed grouse, wood duck, black capped chickadee
Amphibian	Spring peeper, spotted salamander, wood frog, pickerel frog
Reptilian	Eastern garter snake, painted turtle
	Palustrine scrub/shrub wetlands
Mammalian	Raccoon, mink, moose, red squirrel, weasel, snowshoe hare, short-tailed shrew
Avian	American woodcock, common yellow throat warbler, common snipe, belted kingfisher, yellow warbler, blackburnian warbler, mourning warbler, northern waterthrush, southern red backed vole
Amphibian	Green frog, gray tree frog, American toad, spring peeper, redback salamander
Reptilian	Eastern garter snake, redbelly snake
	Palustrine emergent wetlands
Mammalian	Water shrew, meadow jumping mouse, muskrat, beaver, river otter, meadow vole, striped skunk, moose, raccoon, red fox
Avian	Great blue heron, barn swallow, red-winged blackbird, swamp sparrow, song sparrow, common yellow throat warbler, common grackle, common snipe, belted kingfisher, spotted sandpiper, American black duck, mallard, common loon, ring-necked duck, redbreasted merganser
Amphibian	American toad, spring peeper, northern leopard frog, pickerel frog, bullfrog
	Palustrine unconsolidated bottom
Mammalian	Beaver, muskrat
Amphibian	Bullfrog
Reptilian	Snapping turtle, painted turtle

Botanical Resources

The Presumpscot River is located in the Northern Hardwoods Ecoregion of northern New England. Fertile loamy soils, suitable moisture conditions, and elevations below 2,500 feet are abiotic characteristics typical of this Ecoregion and reflect conditions found in the vicinity of the Saccarappa Project.

The lower segment of the Presumpscot River, downstream from the Westbrook city line, is dominated by urban/industrial and residential development within the City of Westbrook. The Saccarappa Project is located in this reach of the river and has limited vegetative resources relative to the middle and upper Presumpscot River reaches. There are, however, narrow stretches of naturally vegetated riparian habitat extending along the river banks, including some isolated upland forest stands and palustrine wetlands. These naturally vegetated areas are concentrated upstream from the Saccarappa Project.

The licensee conducted a vegetative cover study in support of the relicensing in the vicinity of the Saccarappa Project in 1997 (Kleinschmidt, 1999). The river is flanked by a mostly forested landscape consisting of mixed hardwood forest and coniferous forest with smaller areas of palustrine forested wetlands. The exception of this forested landscape is the Saccarappa Project and other buildings located in the City of Westbrook. The major cover types in the Saccarappa Project area are discussed in further detail below:

Mixed Hardwood Forest

The mixed hardwood forest cover type is characterized by mature second-growth trees. Dominant tree species are red oak, red maple, sugar maple, American beech, black cherry, yellow birch, and white pine. Subdominant species include quaking and big tooth aspen (poplar), white ash, eastern hemlock, gray birch, white birch, red pine, and basswood. The shrub/sapling stratum in this cover type is dominated by saplings of the more shade-tolerant overstory species such as beech and hemlock, as well as shrubs and small trees such as witchhazel, striped maple, beaked hazelnut, hobblebush, and eastern hophornbeam. Typical herb layer species are Canada mayflower, bracken fern, bunchberry, purple trillium, wild sarsaparilla, common wood-sorrel, and spinulose woodfern. Shade intolerant species such as gray birch, white birch, and quaking aspen are common along the immediate river bank, but are only a minor component of the forest interior.

Coniferous Forest

Coniferous forest cover type in the area is characterized by mature, relatively even-aged forest stands dominated by white pine and eastern hemlock. White pine-

dominated areas consist both of plantations as well as historical crop and pasture lands which naturally seeded-in to pine.

Hemlock dominated coniferous forests occur primarily in areas which were historically logged, and include some of the steeper areas and slopes with northern aspects. Subdominant tree stratum species in the coniferous forests include northern white cedar, red pine, balsam fir, and red spruce. The understory is sparse and contains primarily hemlock. Wintergreen, starflower, and Canada mayflower are found in the herb stratum.

Shrub/Successional Old Field

The shrub/successional old field cover type occurs sporadically in the area and occurs primarily in areas of abandoned farm fields and maintained utility and railroad rights-of-way. Dominant woody species include quaking aspen, white birch, gray birch, white pine, common juniper, and staghorn sumac. Dominant herbaceous species in this cover type include Queen Anne's lace, Canada goldenrod, bracken fern, common milkweed, New England aster, witch grass, and hawkweed.

Agriculture/Maintained Field

The agriculture/maintained field cover type occurs sporadically in the area and consists of corn, hay, market vegetables, and a variety of row crops as well as pasture for livestock. Typical species in pastures are grasses including Timothy grass, little bluestem, blue-joint grass and fescues and broad-leaved herbs including clover, New England aster, common lamb's-quarters, common milkweed, wild oats, witch grass, common strawberry, common goldenrod, Queen Anne's lace, and thistle.

Wetlands

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 FWS (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 non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year."

Riparian habitats are areas that support vegetation found along waterways such as lakes, reservoirs, rivers, and streams. The boundary of the riparian area and the adjoining uplands is gradual and not always well defined. However, riparian areas differ from the uplands because of their high levels of soil moisture, frequency of flooding, and unique assemblage of plant and animal communities (Virginia State University 2000, as cited by Sappi North America, Inc., 2018a.). These habitats can range from mature forests to areas covered by emergent vegetation and shrubs. Riparian habitats are unique because of their linear form and because they process large fluxes of flow energy and materials from upstream systems (Mitsch and Gosselink 1993, as cited by Sappi North America, Inc., 2018a.). Riparian areas and the associated vegetation provide important habitat for wildlife and may contain a higher number of species, both plant and animal, than surrounding upland areas due to the proximity to water. These areas may be important avian habitats for resident and migratory birds. Riparian habitats typically function as travel corridors for migratory wildlife species.

During the growing season in 1997, the licensee completed a vegetative cover type mapping study in the study area as part of relicensing of the Presumpscot River Projects. The landward boundary of the cover type mapping extended from the edge of the Presumpscot River to a variable distance of between 300 to 500 feet horizontally from the river, terminating at logical landmarks, such as roads and railroad tracks (Kleinschmidt 1999). Interpretation of aerial photography was used to delineate between different cover types and ground-truthing of the mapped cover types was completed in June 1997. As part of the study, all wetland cover types were ground-truthed, as were at least 20% of the upland cover types (Kleinschmidt 1999).

In August 2015, Mark Hampton Associates, Inc. conducted an assessment of wetland resources due to the proposed lowering of the Saccarappa impoundment. This assessment included identification of all existing wetlands located within the Saccarappa impoundment and the portion of the Little River impounded by the Saccarappa Dam. The report details existing wetland conditions within the project area. Refer to Appendix M for the “Assessment of Wetland Resources due to Lowering of Impoundment” in the surrender application (Sappi North America, Inc., 2018a).

ENVIRONMENTAL EFFECTS

Wildlife

Existing wildlife species within the Saccarappa Project are not expected to be adversely impacted by the removal of the spillways or construction of the double Denil fishway. Noise and habitat disturbance are expected to occur at construction sites and at staging areas, but these effects would occur for a short period of time. In regards to changes in water levels, it is expected that wildlife species will easily adapt to the

lowering of water levels between Saccarappa and Mallison Falls. No mitigation measures are proposed specific to wildlife.

Botanical Resources

Existing botanical species within the Saccarappa Project are not expected to be adversely impacted by the removal of the spillways. The water level in the river segment from Saccarappa to Mallison Falls will be lowered approximately 6.0 feet under average flow conditions. However, botanical species are expected to adapt to the lowering of water levels between Saccarappa and Mallison Falls. Botanical species are not expected to be impacted by removal of the spillways.

Wetlands

There are two categories of wetland impacts associated with the Saccarappa fishway installation; those due to proposed modifications at the Saccarappa site, and those related to lowering of the water level in the river between Saccarappa Dam and Mallison Falls.

The first category of potential impacts at the Saccarappa site includes both temporary and permanent impacts. The removal of the eastern spillway, western spillway and ancillary structures in the forebay channel is a positive, permanent impact. Removal of these structures will expose a large area of benthic habitat across the entire river that does not exist today. The only potentially negative permanent impact is related to the filling of the tailrace channel. This man-made channel with concrete walls and smooth bedrock bottom is not riverine habitat but it is hydraulically connected to the river. The proposed fishway will be constructed on the fill to be placed in the tailrace channel.

Temporary impacts at the Saccarappa site are all related to the short-term use of cofferdams and wet roads that are necessary to facilitate construction of the various elements of the project. Temporary wet roads that will double as cofferdams will be needed to gain access to the dam structures for demolition with excavators and trucks. There is an existing wet road upstream of the dam that will be utilized for this project and will be removed as the dam is removed. Removal of that existing wet road will be a permanent positive impact.

The second category of potential wetland impacts is related to the lowering of the water level in the section of river between Saccarappa and Mallison Falls. Once the spillways are removed and the bedrock in the eastern and western channels is removed to the elevations indicated on the design drawings filed with the surrender application, the water level in the river upstream of the spillways will be about 6 feet lower under average flow conditions.

The report, Mark Hampton Associates, Inc. in August 2015, concluded that the proposed fishway installation and associated lowering of the impoundment water level after removal of the spillways at Saccarappa would result in no net loss of wetlands within the impoundment area. The report indicates that the proposed work may result in a slight increase in wetland area at locations where surface water tributaries empty into the impoundment. The report states that at drawdown, wetlands located adjacent to the impoundment will migrate with the lowering of water levels. Wetlands associated with tributaries emptying into the impoundment will not be affected by the drawdown, as they do not derive their primary source of water from the impoundment. After the drawdown, the wetlands at these locations will expand to meet the new shoreline.

The 2018 WQC condition 11 requires an invasive plant species monitoring and control report for one vegetative growing season following dam removal activities be filed with Maine DEP. This report would help determine how wetlands respond to the lowered water level and it should also be filed with the Commission.

Most of the impacts to wetlands will exist for a short period of time during construction. Potential wetland impacts related to the lowering of the water level in the section of river between Saccarappa and Mallison Falls are negligible and available wetland area may increase after dam removal.

3.3.5 Threatened and Endangered Species

AFFECTED ENVIRONMENT

The Presumpscot River projects are located within the range of NLEB (*Myotis septentrionalis*), which are listed as threatened under the ESA. On June 14, 2018, the licensee filed documentation of consulting with the FWS regarding the presence of NLEB or hibernacula within the project area. By an e-mail dated June 11, 2018, FWS confirmed that the Saccarappa Project is not near any known hibernacula or roost trees. Nevertheless, on June 13, 2018, the licensee provided the FWS with a Streamlined Consultation Form pursuant to the FWS's January 5, 2016, Programmatic Biological Opinion on the final 4(d) rule for the NLEB for section 7(a)(2) compliance of the ESA for tree clearing activities.

The small whorled pogonia (*Isotria medeoloides*), is a federally-listed threatened species, which may occur in the Presumpscot River projects area. In addition to being listed federally, the small-whorled pogonia is also listed as endangered on the state level. However, this plant is not expected to occur at the Saccarappa Project area (Sappi North America, Inc., 2018a citing personal communication with Maine Department of Agriculture, Conservation, and Forestry, 2013).

ENVIRONMENTAL EFFECTS

As discussed above, only the NLEB and the small whorled pogonia could potentially exist within the range of the Presumpscot River projects but neither of these two species are known to be located within the Saccarappa Project area where any ground-disturbance would occur. Therefore, the proposed surrender would not affect these species.

The proposed amendments to the Mallison Falls, Little Falls, Gambo, and Dundee project licenses would extend the license terms by 10 years and make certain changes to these projects' fish passage requirements. There would be no ground-disturbing activities, noise, or changes to flows that that could affect NLEB or the small whorled pogonia. Therefore, these proposed amendments would not affect these two species either.

3.3.6 Cultural Resources

AFFECTED ENVIRONMENT

Definition of Cultural Resources, Historic Properties, Effects, and Area of Potential Effects

Historic properties are cultural resources listed or eligible for listing in the National Register. Historic properties can be buildings, structures, objects, districts (a term that includes historic and cultural landscapes), or sites (archaeological sites or locations of important events). Historic properties also may be resources of traditional religious and cultural importance to any living community; such as an Indian tribe or a local ethnic group, that meet the National Register criteria; these properties are known as traditional cultural properties. Cultural resources must possess sufficient physical and contextual integrity to be considered historic properties. For example, dilapidated structures or heavily distributed archaeological sites, although they may retain certain historical or cultural values, may not have enough integrity to be considered eligible.

Section 106 of the NHPA requires the Commission to evaluate potential effects on properties listed or eligible for listing the National Register prior to an undertaking. An undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including, among other things, processes requiring a federal permit, license or approval. Advisory Council on Historic Preservation (Advisory Council) regulations implementing section 106 define effects on historic properties as those that change characteristics that qualify those properties for inclusion for the National Register. In this case, the undertaking is the surrender of the Saccarappa project license, which would involve the removal of the Saccarappa station

and related resources, which is eligible for the National Register, and would affect the National Register-listed Cumberland and Oxford Canal.

Determination of effects on historic properties first requires identification of any historic properties in the APE. The Advisory Council's regulations define the APE 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."[10] For this undertaking, the APE includes lands within the project boundary as well as lands outside of the project boundary where project construction and/or operation may affect historic properties. The APE includes all access roads, laydown areas, and other locations required during construction and a 100-foot buffer around these areas.

Cultural History Overview

The Presumpscot River has been used heavily throughout history as a water passage route between Casco Bay and Sebago Lake. The Cumberland and Oxford Canal, listed on the National Register, extends along the western shore of the Presumpscot River from the Sebago Lake to the Portland waterfront. The canal served as a major transportation route from the 1820s until the 1870s, when the railroad made this means of transportation obsolete. The canal system includes the canal itself, the raised tow path, and a series of 27 locks. Although approximately 2.25 miles of the canal have been inundated, much of the canal and tow path are still intact and visible. Sections of the tow path are integrated with local recreational trails. Remains of the Cumberland and Oxford canal exist on the west side of the Saccarappa Project, some within close proximity of the river.

Since the early settlement of the Westbrook area, the Saccarappa project site has been used for hydro-mechanical purposes to support a variety of manufacturing. In 1887, the Presumpscot Water Company built the Saccarappa Project, which was the first hydroelectric project on the Presumpscot River, and it was later replaced by the current project facilities in 1907. The Saccarappa Project includes a powerhouse, equipment contained within the powerhouse, two concrete dam sections, a headgate structure, intake canal, forebay, and tailrace. The licensee has retained the two-story powerhouse exterior, and made few modifications since its original construction. The licensee also uses much of the original equipment within the powerhouse, and made few modifications to the dam, intake and outlet structures. Because the Saccarappa station represents an important example of early 20th century hydroelectric engineering and its structures retain a high degree of historic integrity, the Maine SHPO determined that the project is eligible for the National Register.

[10] 36 C.F.R. Section 800.16(d).

Between 1997 and 2000, the licensee conducted an evaluation of project facilities for National Register eligibility (Roberts and Ball 1997); two archaeological sensitivity assessments, called "Phase 0" surveys (Corey et al, 1997; Wilson 1998); surveys to locate prehistoric sites, called phase I surveys; and surveys to evaluate National Register eligibility, called Phase II surveys (Wilson, 1999; Wilson and Bourque, 2000). The licensee also conducted a Phase I historic archaeological survey which focused on the current condition of the Cumberland and Oxford canal and Oriental Powder Mills Complex, also known as the Gorham-Windham Powder Mill Complex (Dinsmore and Reiss, 1998). Based on the results from these investigations, showing that site yielded information from the Early Archaic through the Early Historic periods, the licensee developed a program to monitor and evaluate erosion conditions. Since the licensee implemented the monitoring program, it has not observed any changes in erosion of the archaeological sites. In addition, on July 30, 2018, the licensee filed a cultural resources assessment for the Saccarappa project specifically addressing the Saccarappa Island (Will, 2018). The survey identified 21 structural features, many which relate to industrial elements on and around the Saccarappa Island. All of these cultural resource studies were developed in consultation with the Maine SHPO, which reviewed the resulting reports and concurred with the ultimate findings. The licensee also completed Historic American Engineering Record (HAER) documentation of the Saccarappa station. In a letter dated July 24, 2018, the Maine SHPO said it accepted the cultural resource assessment for the Saccarappa Island, and the HAER documentation for the Saccarappa station.

On July 15, 2002, a Programmatic Agreement (PA) was executed among the Commission, the Advisory Council on Historic Preservation (Council), and the Maine SHPO. Concurring parties to the PA included the licensee and the Penobscot Indian Nation. The PA, and license article 410 required the licensee to develop and submit a HPMP for managing historic properties that may be affected by the relicensing of the Saccarappa, Mallison Falls, Little Falls, Gambo, and Dundee Projects, which was approved on August 8, 2005. The PA also specifies that in the event that the Commission may authorize the decommission and removal of a project for which a license has been issued, the Commission would first consult with the Maine SHPO, the Penobscot Indian Nation, the Advisory Council and the licensee to consider alternatives to adversely affecting historic properties.

ENVIRONMENTAL EFFECTS

Effects on cultural resources within the APE can result from project-related activities such as reservoir operations, modifications to project facilities, or project related ground-disturbing activities. Effects also can result from other forces such as wind and water erosion, recreational use (project and non-project related), vandalism, and private and commercial development. In the case of the licensee's proposal to surrender the Saccarappa project license, it would directly affect the following three historic

properties: (1) prehistoric site 8.20 which is located below the Mallison Falls dam (specific location omitted for security reasons) which is eligible for the National Register as a large multi-component site with archaeological materials dating from the early Archaic to early historic period; (2) sections 9 and 15, respectively, of the National Register-listed Cumberland and Oxford Canal which is located on the west side of the project and subject to active erosion due to water level fluctuations; and (3) the Saccarappa Project facilities which include the dam, forebay, intake, tailrace, powerhouse and historic period equipment. These facilities are eligible for the National Register as an example of early 20th century hydroelectric station design and construction, and as an example of the manner in which the licensee developed electrical generating capacity to operate its paper mill in Westboro. Also, removal of the Saccarappa dam could expose previously submerged sites that could be adversely affected by erosion and artifact collection.

Pursuant to the Commission's Tribal Policy,[11] Commission staff consulted with the federally-recognized Tribes that have interests within the project's APE. On May 18, 2018, Commission staff sent a letter to the Penobscot Nation and the Aroostook Band of Micmacs (Tribes) requesting comments on the surrender application for the Saccarappa Project and the proposal to amend the licenses for the Mallison Falls, Little Falls, Gambo, and Dundee Projects. In addition, the Commission attempted to contact the Tribes again on June 12 and 19, 2018. No comments were received from the Tribes.

The licensee and the Maine SHPO, in conjunction with the Commission, have consulted and developed an MOA to mitigate adverse impacts to historic properties. The proposed MOA states that the Commission, subsequent to any authorization of the proposed surrender, and prior to construction activities, would ensure that the measures stipulated in the MOA are carried out, including, but not limited to: (1) development and submittal of HAER documentation of the Saccarappa Project, including the dam and related resources; (2) producing a cultural resource assessment, which includes a prehistoric and historic archaeology report; (3) conducting an assessment of foundations in the east and west channel prior to demolition; (4) performing prehistoric archaeological surveys of exposed portions of the project subsequent to dam removal; (5) installing interpretive signage within the vicinity of the powerhouse, once removal and construction activities are completed; (6) monitoring sections 9 and 15 of the Cumberland and Oxford Canal and its towpath for erosion and stability; and (7) providing training to the licensee's project management personnel prior to demolition activities on proper procedures for the protection of previously identified archaeological resources and procedures to follow in the event of the unanticipated discovery of cultural material or

[11] https://www.ferc.gov/industries/hydropower/indus-act/order-2002/tribal-policy.pdf

human remains. The licensee says it also intends to conduct a phase I archaeological study of the Saccarappa Project once the dam is breached, water levels have receded exposing old riverbanks, and conditions are safe for a pedestrian survey in the drawdown zone.

3.3.7 Recreation, Land Use, and Aesthetics

AFFECTED ENVIRONMENT

The Presumpscot River region includes opportunities for a variety of land and water-based activities, which include hiking, camping, open water fishing, and swimming. Undeveloped land uses dominate the upstream projects, while more industrialized land use and development tend to occur at the downstream projects. The Saccarappa Project is located near the City of Westbrook. The shoreline of the upstream projects of the impoundment include both undeveloped and agricultural lands. However, commercial and industrial-zoned lands surround the portion of the impoundment closest to the project dam and powerhouse. Saccarappa Park, owned and maintained by the City of Westbrook, is an urban park located on the western shore, overlooking the Saccarappa Falls, dam and powerhouse. The licensee says there are twelve park benches available for seating and a walkway along the riverbank provides views of the Saccarappa Project. As required by the project's license, recreation facilities at the Saccarappa Project consist of a car-top boat take-out upstream of the dam, with signage and parking. The take-out area is located above the Saccarappa dam and is intended to provide boaters with egress only, prior to entering the urban setting of Westbrook, Maine. In 2008, the licensee completed the recreation site at the project located on Mill Street in Westbrook, Maine.

There are approximately 123 formal recreational access sites within 60 miles of the Saccarappa Project that provide recreational opportunities in a variety of riverine and palustrine environments. The most notable of the regional recreational opportunities occur on Sebago Lake just upstream of the projects. Sebago Lake offers 18 public boat ramps, sand beaches, campgrounds, and resort areas. A site upstream from Saccarappa Dam is available as a take-out/launch area for hand-carried boats and car top launching, and shoreline fishing may also occur at this location. The area is located on the western shore just upstream of the Saccarappa powerhouse. In addition to public access areas, there are also private piers, docks, and other water-access points along the impoundment. Along the Saccarappa Project impoundment, there are eight private sites in various states of repair and disrepair, and one set of steps into the river. During the summer, the more traditional activities that occur in the area include canoeing, hiking, camping, open water fishing, and swimming. Fall offers the opportunity to view foliage, as well as deer hunting. The winter months offer downhill and cross country skiing, ice fishing, and snowmobiling.

The Maine Statewide Comprehensive Outdoor Recreation Plan 2014-2019 (SCORP) (Maine DACF, 2015) identified hiking, walking, boating, and fishing as among the more popular outdoor recreation activities in the state. Two-thirds of Maine's population enjoys hiking, with more than 25 percent using non-motorized trails at least weekly, based on SCORP surveys. The SCORP seeks to support both local and regional trails, including local trail planning that increases "access to key community attributes." Surveys indicate the greatest need is for easy trails in natural settings. Interest in marine and freshwater boating access and water trails for canoeing, kayaking, and stand up paddle board use has increased in recent years, while the demand for fishing opportunities is considered strong but not increasing. Whitewater boating is not specifically addressed by the SCORP. The Maine Bureau of Parks and Lands (Maine BPL) owns and manages 616,952 acres of public reserved and non-reserved lands, which are used for multiple uses such as: forestry, wildlife, and recreation. The following Maine BPL sites are located within 25 miles of Westbrook, Maine: (1) Bradbury Mountain State Park; (2) Crescent Beach State Park; (3) Ferry Beach State Park; (4) Mackworth Island; (5) Pinelands Land Unit; (6) Two Lights State Park; (7) Crescent Beach State Park; and (8) Scarborough Beach State Park. In addition, Cumberland County, Maine has 39 public boat launch sites, and six hand-carry only sites. The licensee says within 60 miles of the Saccarappa Project, there are approximately 123 formal access sites for a variety of uses, which includes: hiking, camping, open-water fishing, and swimming. In the immediate vicinity of the Saccarappa Project, there are three ramp and float facilities operated by the City of Westbrook, which are located between the Saccarappa dam and the Cumberland project. They are intended to increase recreational access to the Presumpscot River.

ENVIRONMENTAL EFFECTS

The licensee says the removal of the eastern spillway would enhance the recreation opportunities from Mallison Falls to Cumberland Mills, opening up a 5.8-mile stretch of river to boaters without portage around non-natural structures. Long-term benefits would include improved opportunities for a wide variety of recreational activities including boating and fishing. The introduction of anadromous fish to the area may also allow for the establishment of fisheries upstream of Saccarappa and increase the viability of recreational fishing. A recent study examined the potential benefits associated with the removal of the Saccarappa facility which include short-term construction-based benefits, recreational enhancements, and festival events.

The licensee also conducted several studies in the Saccarappa impoundment in order to identify manmade features that may be impacted by the projected project. The licensee identified the following manmade features as a result from its investigations, as follows: seven private docks; one public dock, one set of steps into the river; a city-owned boat launch located upstream from the Saccarappa Dam on the eastern-shore; a hand-carry launch required by the project's license; a canoe and kayak put-in area on the

Little River; a water intake pipe and a culvert. The licensee says all but two of the private docks are seasonal, and in its assessment, the impact of the proposed drawdown on each of the structures would be negligible because they are installed and removed each spring and fall. The licensee also says the proposed drawdown would not have a significant effect to the steps in the river. While there would be a gap between the bottom step and the proposed water surface elevation, it would be unnecessary to construct additional steps to lead to proposed surface elevation as bathymetry data indicates that this newly exposed area would be relatively flat and easily traversable. The licensee anticipates the small amount of foot traffic would not lead to erosion. The licensee indicates that normal use of the hand carry launches may result in rutting, erosion, and sedimentation into the river. The licensee says in order to minimize this risk, the hand carry launch owned by the licensee would be modified to provide continuous access to the water line by extending the existing crushed stone surface to the proposed water line.

The licensee does not propose to provide any measures to enhance recreation in the project area. The licensee plans to construct the extension during a low flow period in accordance with the State of Maine's Erosion Control Best Management Practices and would use clean materials to minimize siltation and impact to the river. The licensee's proposal to extend the launch would consist of an approximately 12 foot by 16 foot layer of crushed stone leading from the end of the existing erosion control mesh at the site to the new waterline. Therefore, the two boat launches would remain publically accessible following the proposed surrender. However, following the removal of the spillways at the Saccarappa Project, the hand-carry boat launch into the Little River would not be suitable for launching boats except under unusually high water conditions because this section of the river would no longer be deep enough to launch boats except under high flow conditions. The drawdown would also increase the distance between the existing launches and the water, which may become rutted and eroded. The licensee owns one of the existing boat launches on the Presumpscot River, which will no longer be usable following the drawdown. The other boat launch on the Presumpscot River is owned by the City of Westbrook and the licensee proposes to mitigate any adverse effect by extending an existing crushed stone walkway to the proposed waterline. After the drawdown, the boat launch on the Little River would no longer be usable, though walk-in access for anglers would still be available.

In a July 8, 2018 filing, American Whitewater says the Saccarappa Project is uniquely situated in an area where flows from the Presumpscot River descend the Saccarappa Falls in downtown Westbrook. As such, they contend that the licensee's hydropower operations have disrupted the natural flow of the river and adversely impacted both fish passage and recreational opportunities. While American Whitewater agrees that the proposed surrender of the Saccarappa Project would be in the public's best interest, they say that the licensee must consider how channel modifications, flow alterations, and fishway construction would impact recreational use and river

navigability. American Whitewater states the licensee must consider how the upper falls would accommodate boat passage through the nature-like fishway rather than create a navigational hazard that would have unintended public safety consequences. The licensee says that the removal of the eastern spillway would enhance the recreational opportunities from Mallison Falls to Cumberland Mills by opening up a 5.8 mile stretch of river to boaters without portage around non-natural structures. In addition, the licensee speculates that the Saccarappa Falls may act as a natural barrier for some boaters under some flow conditions.

In addition, American Whitewater contends it is unclear whether there will be safe boating passage over the lower falls on either the western or eastern channel due to the construction of the double Denil fish ladder in the western channel and the limited flows and lack of sculpted in the eastern channel over the lower falls. With respect to the lower falls, the licensee says the proposed design does not include any alterations to the lower falls and includes the removal of deep river gates, which are already used by whitewater enthusiasts. The licensee says that during the public meetings held to discuss the project's surrender, it was specifically requested not to make any changes to the lower falls. The licensee contends that redesigning the proposed fish passage to include a provision to modify the lower falls would be inconsistent with the Settlement Agreement and is likely to adversely affect fish passage since competing attraction flows would adversely impact the overall effectiveness of the design and could delay fish passage. Moreover, the licensee says to its knowledge, no natural waterfalls in Maine have been modified to create safe boating passage.

American Whitewater notes the licensee does not include any provision for portage around the falls. To that effect, American Whitewater requests the licensee to conduct a recreation facility and a use and needs assessment to obtain information about the condition of existing recreation access sites at the project; evaluate the impact of proposed modification to the river channel and construction of fish passage on the ability of recreational boaters to navigate the Presumpscot River over the upper and lower falls of the Saccarappa Falls; and develop a proposal that provides recreational boaters with the ability to portage around and navigate over the Saccarappa Falls. The licensee notes it is possible that a short portage along the edge of the river would be needed, although this portage would be shorter in length than portage around the current configuration of the Saccarappa Project. The licensee says it plans to sell certain project lands to the City of Westbrook, including the island and land downstream from the Saccarappa Falls. The licensee suggests that American Whitewater work with the City of Westbrook regarding recreational access opportunities at the site.

In the licensee's June 22, 2018 response to American Whitewater's request, it says the Commission does not have the authority to order construction of recreational facilities in a surrender proceeding. The licensee argues that the Commission previously stated that it is not appropriate to place encumbrances on a licensee's ownership of project lands

after the Commission's jurisdiction ends. Secondly, the licensee says it did consider the impact of the proposed fish passage facilities on recreational boating while discussing its proposal with the other parties to the Settlement Agreement. Thirdly, the licensee says that it is inappropriate to construct new portage facilities since the natural falls never had any prior facilities nor does the licensee own or control the lands required for a portage route. Additionally, the licensee says that the proposal would drawdown the existing impoundment from 69.95 feet to 64 feet at average flows of 1,000 cfs, and it does not expect the anticipated drop to negatively impact property owners or property values along the Saccarappa project upstream to Mallison Falls. The licensee notes there are seven private docks above the Saccarappa dam, and all except two are seasonal. The licensee says the proposed drawdown may require some reconfiguration of the docks, but the costs associated with such alterations is expected to be minimal. Therefore, it says it would relocate the existing docks closer to the river edge or extend the existing docks as the individual situation requires.

In our review of the licensee's proposal, we have to consider advantages to restoring fish passage while also concurrently examining the effect to recreational resources. In order to identify the impacts to recreation due to the proposed removal of the Saccarappa dam and project facilities, the licensee reached out to state and federal agencies, interested stakeholders, and held public discussions. The licensee also conducted several field studies to identify and mitigate any concerns regarding recreation. The licensee has made a good faith effort to resolve issues regarding recreation while also considering the concerns to fish passage. In a June 11, 2018 filing, the City of Westbrook says it has worked with the licensee to reach a comprehensive agreement not only for the removal of the Saccarappa project, but also to address its concerns regarding public use and recreation. The City says the licensee is committed to making certain project lands available to them for an enhanced river walk and to enhance public access to a river corridor, which is a benefit to the City and the local business community.

In our assessment, we agree with the licensee that redesigning the proposed fish passage in order to modify the lower falls would be inconsistent with the Settlement Agreement and could adversely affect fish passage since competing attraction flows would adversely impact the overall effectiveness of the design and could delay fish passage. Secondly, while dam removal would eliminate the impoundment and associated fish and boating opportunities currently available above the dam, these activities would be replaced with new opportunities for recreational fishing. Moreover, as part of a surrender proceeding, the Commission does not typically require boating portages to be installed by the licensee because we cannot ensure the long-term maintenance and safety once the project is removed from the Commission's jurisdiction. We note that restoring anadromous fish to the Presumpscot River would also enhance the public's angling experience, and the loss of the Little River hand-carry boat launch would be mitigated by the continued walk-in access for fishing.

We also recognize that because the whitewater reach below the dam is short relative to other resources in the region, even if the flows were increased, the reach would likely be used primarily by local whitewater enthusiasts and would not attract those outside of the Westbrook area. Such opportunities can be found on the Kennebec, Dead, Magalloway, and Rapid Rivers which all have significantly longer runs and offer a diversity of whitewater experiences for all skill levels (ELC Outdoors 2018, 2018; Maine DIFW, 2018).

3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the proposed surrender and amendment applications would not be approved and the Presumpscot Projects would continue to operate under the terms and conditions of the existing licenses. The existing geology and soils, water resources, botanical resources, wildlife, cultural, and recreation resources would not be changed.

Under the No-Action Alternative, the existing 2003 WQC and fishway prescriptions for the projects would continue to be effective. As such, fish passage is required to be installed at the Saccarappa Project by May 2019. Upon passage of certain numbers of fish at the Saccarappa fishway, fish passage would be required to be installed at the upstream projects.

3.5 CUMULATIVE EFFECTS ANALYSIS

Based on the licensee's pre-filing consultation and request for public comments, Commission staff have identified one cumulatively affected resources for analysis: fisheries and aquatic resources (migratory fish species).

The licensee's proposed action would likely have a positive cumulative impact on migratory fisheries restoration in the Presumpscot River. In December 2001, the agencies issued a report of management goals, objectives, and strategies for fishery management in the Presumpscot River. Decommissioning the Saccarappa Project, removing the spillways, reshaping the eastern and western channels into nature-like fish passages, and installing a double Denil fishway is compatible with and supportive of the management goals, objectives, and strategies for fishery management set forth by the agencies. The proposed Saccarappa fish passage design will make the five-mile section of the Presumpscot River up to Mallison Falls and all of its tributaries accessible to migratory anadromous fish. The effects of the proposal will increase the production potential of the target species of interest and meet the management goals for the river outlined in the agencies 2001 report. This change will generally result in decreased habitat suitability for warmwater species, such as smallmouth bass and pickerel, but also result in increased habitat suitability for coldwater fish, such as brook trout and landlocked salmon. Overall fish abundance and diversity are expected to increase

following dam removal. The Saccarappa project decommissioning, dam removal activities, and fish passage facility construction as proposed, would only result in short-term harm to fish resources during construction. This would be ameliorated by the implementation of an erosion control plan, a phased drawdown of the impoundment, and a coordinated timing of project decommissioning to minimize any short-term effects on anadromous and resident fish. The removal of the spillways and construction of fish passage facilities, as proposed, should result in a significant long-term benefit to diadromous fish resources through improved habitat value and accessibility in the Presumpscot River.

The Settlement Agreement, 2018 WQC, and fishway prescriptions mention the prospect of the licensee seeking surrender of the Mallison Falls and Little Falls project licenses in the future. The potential surrender of additional Presumpscot River projects is speculative at this time, as no application has been filed for Commission approval. If in the future, the licensee were to file an application to surrender one or more project licenses, it would have to consult with all applicable resource agencies including the Maine DEP and FWS, and fish passage plans for the Presumpscot River system may need to be revisited. Any such license surrender would have to be filed with the Commission for appropriate environmental and public review before approval.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our independent review and evaluation of the environmental effects of the Proposed Action and the No Action Alternative, we recommend the Proposed Action, with one additional staff-recommended measure, as the preferred alternative. Under the Proposed Action as modified by staff, the Commission would authorize the licensee to remove the Saccarappa dam, install a double Denil fishway at the Saccarappa site, incorporate the fishway into the Mallison Falls license, and surrender the Saccarappa project license. The license terms for the Mallison Falls, Little Falls, Gambo, and Dundee projects would be extended for ten years.

We recommend this alternative because the Settlement Agreement, of which the Commission is not a signatory, provides for a reasoned approach to decommissioning a hydroelectric project while also addressing fish passage concerns, both of which will benefit fishery and aquatic resources in the Presumpscot River. The public benefits of the Proposed Action as modified by staff and including mandatory conditions would exceed those of the No Action Alternative.

In our analysis, we find that the licensee's proposal to decommission and remove the dam and spillways at the Saccarappa Project would eliminate a source of renewable generation but would restore this section of the Presumpscot River to a free-flowing condition. The installation of a double Denil fishway at the lower falls and modifications to create a nature-like fishway at the upper falls would improve conditions for migrating

fish, thus ensuring that fish can navigate this section of the river after all decommissioning work is completed. For the Mallison Falls, Little Falls, Gambo, and Dundee project amendments, the licensee has reached a comprehensive Settlement Agreement with Maine DMR, FWS, the City of Westbrook, and others. This agreement and the associated surrender and amendment applications balances the restoration of a free-flowing river and improved fish passage at the Saccarappa Dam site with the license extensions and removal of fish passage requirements at the Gambo and Dundee projects. We have reviewed the costs and benefits of the surrender and amendment applications and the Settlement Agreement upon which they are based, and on balance, staff recommends their approval.

We recommend the MOA developed between the Commission and Maine SHPO, with Penobscot Nation and the licensee as concurring parties, should be incorporated into any surrender order for the Saccarappa project to mitigate adverse effects to historic properties.

4.1 UNAVOIDABLE ADVERSE IMPACTS

The licensee's proposal to remove certain project facilities which are eligible for listing on the National Register constitutes an unavoidable adverse impact. Removal of the dam and the project facilities would result in a permanent loss of historical resources which are eligible for the National Register. This loss would require mitigation through data recovery in order to document the historic properties effected by its removal. In addition, the removal of the dam, powerhouse, and other project facilities could also result in the exposure of currently inundated and as yet unidentified cultural sites. This action could expose these resources to the public, resulting in illicit artifact collection and site vandalism. However, through the implementation of measures outlined in the MOA, this adverse impact would be mitigated.

4.2 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA, 16 U.S.C. § 803 (a)(2)(A), 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. We reviewed 16 qualifying comprehensive plans that are applicable to the Presumpscot River Projects, located in Maine. The Proposed Action is consistent with these comprehensive plans.

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5.0 FINDING OF NO SIGNIFICANT IMPACT

The surrender of the Saccarappa Project license and amendments to the upstream Mallison Falls, Little Falls, Gambo, and Dundee projects licenses would assist in the restoration of the lower Presumpscot River. On the basis of our independent analysis, we find that the proposed surrender and amendment applications, as modified by staff, would not constitute a major federal action significantly affecting the quality of the human environment.

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7.0 LIST OF PREPARERS

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APPENDIX A
WATER QUALITY CERTIFICATE
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
(Original April 30, 2003, as amended on December 27, 2016)

Water Quality Certification Conditions for the Saccarappa (P-2897), Mallison Falls (P-2932), Little Falls (P-2941), Gambo (P-2931), and Dundee (P-2942) Hydroelectric Projects, Issued April 30, 2003, as amended on December 27, 2016 by the State of Maine Department of Environmental Protection

THEREFORE, the Department APPROVES the applications of S.D. WARREN COMPANY and GRANTS CERTIFICATION that there is a reasonable assurance that the continued operation of the PRESUMPSCOT RIVER HYDRO PROJECTS, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. **Water Levels and Flows**

A. Except as temporarily modified by (1) approved maintenance activities, (2) extreme hydrologic conditions, as defined below, or (3) emergency electrical system conditions, as defined below or (4) agreement between the applicant and other appropriate state and/or federal agencies, all projects shall be operated in a run-of-river mode, with outflow approximately equal to inflow on an instantaneous basis except during flashboard failure or replacement, and with impoundment levels maintained within 1 foot of full pond when flashboards are in place and within 1 foot of spillway crest elevation when flashboards are not in place.

B. Except as temporarily modified by (1) approved maintenance activities, (2) extreme hydrologic conditions, as defined below, or (3) emergency electrical system conditions, as defined below or (4) agreement between the applicant and other appropriate state and/or federal agencies, the following minimum flow releases shall be provided annually into the project bypass reaches:

- Dundee: 60 cfs from May 1 through October 31 and
  40 cfs from November 1 through April 30.
- Gambo: 60 cfs year-round.
- Little Falls: Existing leakage (approximately 26 cfs).
- Mallison Falls: 60 cfs from May 1 through October 31 and

40 cfs from November 1 through April 30.

- Saccarappa: Existing leakage (approximately 13 cfs).

Minimum bypass flows shall consist of uncontrolled leakage, spillage, and any flows released into the bypass reaches through any upstream and downstream eel passage and anadromous fish passage facilities provided at the projects. To the extent possible, all minimum flows shall be provided as spillage at the project dams, in order to provide maximum reaeration.

C. "Extreme Hydrologic Conditions" means the occurrence of events beyond the Licensee's control such as but not limited to abnormal precipitation, extreme runoff, flood conditions, ice conditions or other hydrologic conditions such that the operational restrictions and requirements contained herein are impossible to achieve or are inconsistent with the safe operation of the Project.

D. "Emergency Electrical System Conditions" means operating emergencies beyond Licensee's control which require changes in flow regimes to eliminate such emergencies which may in some circumstances include but are not limited to equipment failure or other abnormal temporary operating condition, generating unit operation or third-party mandated interruptions under power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.

E. The applicant shall, within 6 months of issuance of a New License for the project by FERC or upon such other schedule as established by FERC, submit plans for providing and monitoring run-of-river operations, impoundment levels, and minimum bypass flows as required by Parts A and B of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

F. Upon completion of a habitat assessment by the Atlantic Salmon Commission and notification to the applicant of initiation of active Atlantic salmon restoration activities in the Presumpscot River, the applicant shall conduct a study to evaluate the effectiveness of the minimum bypass flows required by Part B of this condition in providing habitat for various life stages of Atlantic salmon.

G. The applicant shall, within 6 months after notification from the Atlantic Salmon Commission on initiation of active Atlantic salmon restoration activities in the Presumpscot River, or upon such other schedule as established by FERC, submit plans for a study to evaluate the effectiveness of minimum bypass flows required by Part B of this condition in providing habitat for Atlantic salmon, prepared in consultation with ASC. This study shall include evaluation of the effectiveness of bypass flows in providing habitat for Atlantic salmon spawning and egg incubation

and production of juvenile Atlantic salmon. This plan shall be reviewed by and must receive approval of the DEP prior to implementation. In reviewing the plan, the DEP will consider the recommendations of the ASC.

H. The applicant shall, in accordance with a schedule set forth in the study plan or upon such other schedule as established by FERC, submit the results of any bypass flow effectiveness study, along with any recommendations for changes in the minimum bypass flows required by this condition. After reviewing the study results, and after notice to the applicant and opportunity for hearing, the Department reserves the right to require such changes in the minimum bypass flows established in this certification as may be deemed necessary to provide Atlantic salmon habitat in the bypass reaches.

2. **Impoundment Drawdown and Refill Procedures**

A. The applicant shall, unless necessary to address emergency situations or to address dam safety and/or public safety concerns, avoid maintenance drawdowns of the project impoundments during the months of May and June.

B. The applicant shall implement the following procedures for refilling the project impoundments after any impoundment drawdowns:

- If allowed under the FERC-approved Sebago lake level management plan, outflows shall be temporarily increased from Sebago Lake to refill the impoundments while flows from each project are maintained as required by the flow/temperature curve component of the lake level management plan.

- If increased outflows from Sebago Lake are not allowed under the FERC-approved Sebago lake level management plan, a maximum of 25% of the outflow from Sebago Lake shall be used to refill the impoundments while flows from each project are maintained at 75% or more of the outflow from Sebago Lake.

3. **Upstream Eel Passage**

A. Upstream eel passage facilities shall be installed and operational at all projects within 2 years following the issuance of a new FERC license for the projects.

B. The applicant shall, at least 60 days prior to construction or upon such other schedule as established by FERC, submit final design and operational plans for the upstream eel passage facilities required by Part A of this condition, prepared in consultation with the Department of Marine Resources. These plans shall be reviewed by and must receive the approval of DEP prior to construction. In reviewing the plans, the DEP will consider the recommendations of DMR.

C. The applicant shall, in consultation with the Department of Marine Resources, conduct a study or studies to determine the effectiveness of the upstream eel passage facilities required by this condition.

D. The applicant shall, concurrent with the commencement of facilities operation or upon such other schedule as established by FERC, submit plans for a study or studies to determine the effectiveness of the upstream eel passage facilities required by Part A of this condition, prepared in consultation with the Department of Marine Resources. These plans shall be reviewed by and must receive the approval of DEP prior to implementation. In reviewing the plans, the DEP will consider the recommendations of DMR.

E. The applicant shall, in accordance with a schedule set forth in the study plan or upon such other schedule as established by FERC, submit the results of any upstream eel passage effectiveness studies, along with any recommendations for changes in the design and/or operation of any passage facilities installed pursuant to this condition.

F. The applicant shall be responsible for taking such actions as are needed to effectively pass eels upstream through the projects. After reviewing the study results, and after notice to the applicant and opportunity for hearing, the Department reserves the right to require reasonable changes in the design and/or operation of the upstream eel passage facilities installed pursuant to this condition as may be deemed necessary to effectively pass eels upstream through the projects.

5. **Downstream Eel Passage**

A. The applicant shall, immediately following the issuance of a new FERC license for the projects, institute operational measures to provide downstream eel passage at all projects. These measures must include suspending generation at each project for at least 4 hours per night for at least four one-week periods during the downstream eel migration period. The timing of the generation shutdown shall be determined each year, in consultation with the Department of Marine Resources, to maximize the expected benefit for downstream eel migration.

B. The applicant shall, in consultation with the Department of Marine Resources, conduct a 3-year study to determine the exact timing of the generation shutdown, so as to result in the optimum benefit for downstream eel migration.

C. The applicant shall, within 60 days following the issuance of a new FERC license for the project or upon such other schedule as established by FERC, submit plans for a study to determine the exact timing of the generation shutdown required by Part B of this condition, prepared in consultation with the Department of Marine Resources. These plans shall be reviewed by and must receive the approval of DEP prior to implementation. In reviewing the plans, the DEP will consider the recommendations of DMR.

D. The applicant shall, in accordance with a schedule set forth in the study plan or upon such other schedule as established by FERC, submit the results of the downstream eel passage study, along with any recommendations for the exact timing of the generation shutdowns required by this condition.

E. The applicant shall be responsible for taking such actions as are needed to effectively pass eels downstream through the projects. After reviewing the study results, and after notice to the applicant and opportunity for hearing, the Department reserves the right to require changes in the timing of the operational shutdowns required by this condition as may be deemed necessary to effectively pass eels downstream through the projects.

F. In the event that downstream passage facilities are installed at a project pursuant to Condition 5 below, the applicant may, in consultation with the Department of Marine Resources, conduct a study to determine the effectiveness of these facilities in passing eels downstream through the project. Upon request by the applicant, and after reviewing the study results and the recommendations of DMR, the Department reserves the right to reduce or terminate the operational shutdowns required by this condition.

5. **Upstream and Downstream Anadromous Fish Passage**

Saccarappa Project

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

- Phase I. A Denil "fish ladder," or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 18,000 American shad, 109,000 blueback herring, and 273 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than **6** years after passage is available at the downstream Cumberland Mills Dam.

- Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 58,000 American shad, 353,000 blueback herring, and 426 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring, and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Saccarappa Dam, whichever comes first.

Mallison Falls Project

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

- Phase I. A Denil "fish ladder," or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 4,200 American shad, 26,000 blueback herring, and 32 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least

2,960 American shad or 18,020 blueback herring in any single year at the downstream Saccarappa Project.

- Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 44,000 American shad, 270,000 blueback herring, and 185 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring, and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Little Falls Project

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

- Phase I. A Denil "fish ladder," or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 3,100 American shad, 19,000 blueback herring, and 15 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream Saccarappa Project.

- Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 43,000 American shad, 263,000 blueback herring, and 168 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above

Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring, and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Little Falls Dam, whichever comes first.

Gambo Project

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

- Phase I. No upstream fish passage facilities required.

- Phase II. A fish lift, or other passage facilities of comparable efficiency in passing the target, designed to pass up to 40,000 American shad, 244,000 blueback herring, and 153 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) passage of at least 620 American shad or 3,800 blueback herring in any single year at the downstream Little Falls Project.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring, and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Gambo Dam, whichever comes first.

Dundee Project

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

- Phase I. No upstream fish passage facilities required.

- Phase II. A fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 20,000 American shad, 122,000 blueback herring, and 64 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) passage of at least 4,020 American shad or 24,460 blueback herring in any single year at the downstream Gambo Project.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring, and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Dundee Dam, whichever comes first.

All Projects

C. The applicant shall, at least 180 days prior to construction or upon such other schedule as established by FERC, submit final design and operational plans for the upstream and downstream anadromous fish passage facilities required by Parts A and B of this condition, prepared in consultation with the Department of Marine Resources and the Atlantic Salmon Commission. These plans shall be reviewed by and must receive the approval of DEP prior to construction. In reviewing the plans, the DEP will consider the recommendations of the ASC and DMR.

D. The applicant shall, in consultation with the Department of Marine Resources and the Atlantic Salmon Commission, conduct a study or studies to determine the effectiveness of the upstream and downstream anadromous fish passage facilities required by this condition.

E. The applicant shall, concurrent with the commencement of facilities operation or upon such other schedule as established by FERC, submit plans for a study or studies to determine the effectiveness of the upstream and downstream anadromous fish passage facilities required by Parts A and B of this condition, prepared in consultation with the Department of Marine Resources and the Atlantic Salmon Commission. These plans shall be reviewed by and must receive the approval of DEP prior to implementation. In reviewing the plans, the DEP will consider the recommendations of the ASC and DMR.

F. The applicant shall, in accordance with a schedule set forth in the study plan or upon such other schedule as established by FERC, submit the results of any upstream and downstream anadromous fish passage effectiveness studies, along with any recommendations for changes in the design and/or operation of any passage facilities installed pursuant to this condition.

G. The applicant shall be responsible for taking such actions as are needed to effectively pass anadromous fish upstream and downstream through the projects, insofar as passage is required in accordance with Parts A and B of this condition. After reviewing the results of the study, and after notice to the applicant and opportunity for hearing, the Department reserves the right to require reasonable changes in the design and/or operation of the upstream and downstream anadromous fish passage facilities installed pursuant to this condition as may be deemed necessary to effectively pass anadromous fish upstream and downstream through the projects.

6. **Reaeration Measures**

A. The applicant shall, commencing with the issuance of a new FERC license for the project, institute the spillage of 50 cfs at the Dundee Dam and 100 cfs at the Gambo Dam, or take other equivalent measures as may be approved by the Department, in order to meet Class B dissolved oxygen standards in the river from Dundee Dam to Saccarappa Dam under dry weather conditions. Spillage must occur whenever river temperatures exceed 22 degrees Celsius, as measured at the Gambo Dam before 8 AM, and shall be in addition to the minimum bypass flows required by Condition 1 above.

B. The applicant shall, within 6 months of issuance of a New License for the project by FERC or upon such other schedule as established by FERC, submit plans for providing and monitoring spillage or other approved reaeration measures as required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

C. The applicant shall, in consultation with the Department, conduct a study or studies to determine the effectiveness of the spillage or other measures required by this condition in meeting Class B dissolved oxygen standards.

D. The applicant shall, within 60 days following the issuance of a new FERC license for the project or upon such other schedule as established by FERC, submit plans for a study or studies to determine the effectiveness of the spillage or other measures taken pursuant to Part A of this condition in meeting Class B dissolved oxygen standards. These plans shall be reviewed by and must receive the approval of DEP prior to implementation.

E. The applicant shall, in accordance with a schedule set forth in the study plan or upon such other schedule as established by FERC, submit the results of any studies to determine the effectiveness of the spillage or other measures taken pursuant to Part A of this condition to meet Class B dissolved oxygen standards in the river from Dundee Dam to Saccarappa Dam, along with any recommendations for changes in measures taken pursuant to this condition.

F. The applicant shall be responsible for taking such actions as are needed to meet dissolved oxygen standards in the river from Dundee Dam to Saccarappa Dam, insofar as the project dams cause or contribute to a violation of these standards under dry weather conditions. After reviewing the study results, and after notice to the applicant and opportunity for hearing, the Department will reopen and modify the terms of this certification to require reasonable changes in the design and/or operation of the projects as may be deemed necessary to meet Class B dissolved oxygen standards in the river from Dundee Dam to Saccarappa Dam under dry weather conditions.

7. **Recreational Facilities**

A. The applicant shall develop and implement a Recreational Facility Enhancement Plan for each project, which shall include, at a minimum, the following measures to maintain and/or enhance recreational access and use in the project areas:

Dundee Project

- Rerouting, stabilizing, and maintaining the existing canoe portage trail;
- Seeking an easement to provide walk-in angler access to the project bypass reach; and
- Investigating whether an existing access easement can be altered to permit fishery agency access for stocking purposes.

Gambo Project

- Enhancing and maintaining the existing informal canoe portage trail;
- Developing an interpretive sign to explain the history of the Oriental Powder Mill Complex;
- Providing walk-in angler access to the bypass reach;

- Developing parking and signs for carry-in boat access at the portage take-out location; and

- Assisting the Town of Gorham in regrading and enhancing the Gambo Road approach to the former bridge area immediately upstream from the dam.

Little Falls

- Establishing and maintaining a canoe portage trail;

- Assist Gorham Trails in developing parking, signage, and access for a carry-in boat launch at the Gorham Land Trust Property off of the Tow Path Road; and

- Donate approximately 0.8 acres of land on the island located off-shore of the Hawkes Property to the Gorham Land Trust.

Mallison Falls

- Establishing and maintaining a formal canoe portage trail;

- Providing signs for parking and access at the existing carry-in boat access site at the project powerhouse;

- Developing parking, signage, and access for a carry-in boat access site above the project dam;

- Seeking permission from the Department of Transportation and the Town of Gorham to provide a roadside pullout and carry-in boat access site next to the bridge abutment above the project dam; and

- Continuing to seek an easement or other opportunities to provide walk-in angler access to the bypass reach.

B. The applicant shall, within 12 months following the issuance of a new FERC license for the project or upon such other schedule as established by FERC, submit a Recreational Facility Enhancement Plan for each project as required by Part A of this condition. This plan shall be prepared in consultation with the Department of Conservation and the Department of Inland Fisheries and Wildlife, and shall include a schedule for implementation. This plan shall be reviewed by and must receive approval of the DEP.

8. **Limits of Approval**

   This approval is limited to and includes the proposals and plans contained in the applications and supporting documents submitted and affirmed to by the applicant.

9. **Compliance with all Applicable Laws**

   The applicant shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements and orders required for the operation of the projects in accordance with the terms of this certification.

10. **Effective Date**

    This water quality certification shall be effective concurrent with the effective date of the licenses issued for the projects by the Federal Energy Regulatory Commission.

WATER QUALITY CERTIFICATE
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
(Amendments October 10, 2018)

1. STANDARD CONDITIONS OF APPROVAL

All Standard Conditions of Approval for projects under the MWDCA.

2. CONDITIONS OF PRIOR APPROVAL

All terms and conditions of Department Order #L-19717-33-E-N dated April 30, 2003 relating to the operation of the existing SHP shall remain in effect and enforceable by the Department until at least such time as project decommissioning and dam removal and fishway installation activities have commenced.

All terms and condition of Department Order #L-19717-33-E-N dated April 30, 2003 relating to upstream fish passage at the SHP shall remain in effect and enforceable by the Department until at least the completion of the SHP activities to the satisfaction of the Department, in consultation with MDMR and USFWS as necessary, including the removal of the spillways, the construction of the double Denil fishway, and the reshaping of the eastern and western channels.

Furthermore, all Findings of Fact and Conclusions, as well as all other terms and conditions, in Department Order #L-19717-33-E-N and subsequent Orders shall remain in effect until FEC issues a final surrender Order.

3. EROSION AND SEDIMENTATION CONTROL PLAN

A. The applicant shall, in consultation with the Department and the general contractor chosen to perform the dam removal and fishway installation activities, prepare, submit, and implement a final erosion and sedimentation control plan for project dam removal and fishway installation activities, including plans to secure the site for over-wintering between construction seasons, if necessary. The plan shall be reviewed and approved by the Department prior to the initiation of dam removal activities. Review and approval by the Department is achieved through application for a condition compliance order.

B. In addition to any specific erosion and sedimentation control measures included in the plan approved by the Department under Part A of this condition or otherwise set forth in this Order, the applicant and its agents shall take all necessary measures to ensure that their activities do not result in erosion or sedimentation during or following the approved activities, except for any

unavoidable sedimentation that occurs as a result of dam removal and fishway installation activities.

4. TIMING OF ACTIVITIES

The applicant shall, in consultation with the Department and appropriate state and federal fisheries agencies, prepare, submit, and implement a plan to coordinate the timing of project activities to minimize the impact on fish passage and resident fish populations. The plan shall be reviewed and approved (Review and approval by the Department is achieved through application for a condition compliance order) by the Department prior to the initiation of dam removal activities.

5. HISTORIC AND ARCHAEOLOGICAL RESOURCES

The applicant shall implement the Historic Properties and Management Plan (HPMP) based on the Programmatic Agreement as required by the FERC and the Maine SHPO to protect Section 9 and 15 of the Cumberland and Oxford Canal as it relates to erosion.

The applicant will ensure that a written and photographic history of the National Register of Historic Places mill structures are preserved and are recorded with the Historic American Engineering Record/Historic American Building Survey.

6. ACCESS ROAD/COFFERDAM FILL

Any temporary access road and cofferdam fill placed in the waterway or within the 100-year floodway boundaries of the waterway shall consist of clean stone fill or sandbagged clean granular fill free from vegetable matter, lumps or balls of clay and other deleterious substances. That portion passing a No. 200 sieve shall not exceed 10% fines, by weight.

All temporary access road and cofferdam fill shall be removed following completion of dam removal activities.

7. DEMOLITION DEBRIS

All demolition debris and construction spoils shall be reused, recycled or otherwise disposed of in accordance with the Maine Solid Waste Management Regulations.

8. CONCRETE CURING

Concrete shall be precast and cured at least three weeks before placing in the water, or where necessary, shall be placed in forms and shall cure at least one week prior to contact with surface water. A minimum of 15 gallons of water per square foot of new

concrete shall be flowed over new concrete to maintain the pH of discharge water at or below 8.5.

9. IMPOUNDMENT DRAWDOWN

The drawdown of the SHP impoundment shall occur in phases, as proposed by the applicant, in order to minimize the impact on fish and wildlife resources, shoreline stability, and water quality. In the first phase, the initial drawdown of the impoundment will be accomplished by opening the head gate and waste gates to direct the Presumpscot River flow to the western channel and dewater the eastern channel for demolition and removal of the eastern portion of the dam. In the second phase, the head gates will be closed to stop flow in the western channel and fill placed to divert flow to the eastern channel for demolition and removal of the western portion of the dam.

10. BANK STABILIZATION

a. The applicant shall, in consultation with the Department, take appropriate measures to monitor the shoreline following dam removal and to implement bank stabilization measures, as needed.

b. Within one year following the completion of dam removal and fishway installation activities, the applicant shall submit a report detailing the results of shoreline monitoring and any bank stabilization measures taken to remediate any significant stream bank erosion or slumping. This report shall be reviewed and approved by the Department (Review and approval by the Department is achieved through application for a condition compliance order).

11. INVASIVE PLANT SPECIES MONITORING AND CONTROL

a. The applicant shall monitor the newly exposed shoreline and river bottom areas following dam removal for invasive plant species, for a period of one vegetative growing season following completion of dam removal activities.

12. POST-DAM REMOVAL FISH PASSAGE

a. The applicant shall take appropriate measures to monitor fish passage following dam removal and fishway installation, and to implement remedial actions, as needed, to ensure adequate passage through the affected river reach and its tributaries, as described in Sections 2.1.6, 2.1.7.1, and 2.1.7.2 of the Settlement Agreement, and as detailed in

Exhibit B of the same document, titled "Effectiveness Testing and Adjustment Plan".

13. UPSTREAM DRAINAGE/OUTFALL STRUCTURES

a. The applicant shall, in consultation with the affected parties, monitor and protect and/or extend upstream drainage and outfall structures, as needed.

b. Within one year following the completion of dam removal activities, the applicant shall submit a report detailing the results of the monitoring and any measures taken to protect and/or extend upstream drainage and outfall structures following dam removal and fishway installation. This report shall be reviewed and approved by the Department (Review and approval by the Department is achieved through application for a condition compliance order).

14. FLOODWAY MAP REVISIONS

Within one year following completion of dam removal and fishway installation activities, the applicant shall provide to the City of Westbrook all potentially useful technical information in the applicant's possession or control to support a request to the Federal Emergency Management Agency to revise the floodway maps for the Presumpscot River in the City of Westbrook and other affected towns to take into account the dam removal and fishway installation. A copy of this technical information shall also be provided to the Department. The applicant shall provide technical engineering data to the Federal Emergency Management Agency (FEMA) regarding changes in flood flow elevations within six months of the removal of the spillways and reshaping of the eastern and western channels.

15. PUBLIC BOAT LAUNCHES and PRIVATE DOCKS

The applicant shall, in consultation with the MDIFW and the City of Westbrook and affected parties, take appropriate measures, as needed, to modify remaining public boat access sites and private docks existing at the time of application was submitted to the Department, as necessary to accommodate lowered water levels, following dam removal and fishway installation.

16. SEVERABILITY

In the event that any provision, or part thereof, of this permit and/or certification is declared to be unlawful by a reviewing court, the remainder of the permit and/or certification shall remain in full force and effect, and shall be construed and enforced

in all respects as if such unlawful provision, or part thereof, has been omitted, unless otherwise ordered by the court.

11. WQC AMENDMENT APPLICATIONS – CONCLUSIONS AND APPROVALS WITH CONDITIONS

BASED on the above Findings of Fact and the evidence contained in the WQC Amendment applications and supporting documents, comments, and other record materials, and subject to the Conditions listed below, which are appropriate and reasonable to protect and preserve the environment and the public's health, safety and general welfare, the Department makes the following CONCLUSIONS:

1. SHP. The applicant has provided sufficient evidence that an extension of time to conduct all construction activities contemplated by Sappi's MWDCA application, including the demolition of the east channel and west channel spillways at the SHP and install the proposed two-channel fish passage facility, is warranted and does not impact water quality or violate any water quality standards. Therefore, the Department concludes that, as conditioned below, the proposed revision of the existing WQC for the SHP with respect to the deadline for operational upstream fish passage is a minor change and will not significantly affect any issues identified during previous Department reviews of the SHP.

2. Mallison Falls. The applicant has provided adequate evidence that the proposed WQC amendment to have the additional option to surrender its FERC license for the Mallison Falls Project and remove all dam spillways within three years of achieving the American shad and blueback herring trigger numbers at Saccarappa will create an appropriate opportunity for volitional fish passage as an alternative to engineered fish passage; therefore, the Department concludes that, as conditioned below, the proposed WQC amendment meets the designated use of habitat for fish and other aquatic species, 38 M.R.S § 465(4)(A), and all other applicable water quality standards.

3. Little Falls. The applicant has provided adequate evidence that the proposed WQC amendment to have the additional option to surrender its FERC license for the Little Falls Project and remove all dam spillways within three years of removal of the dam spillways at Mallison Falls will not adversely affect species of indigenous fish or violate any applicable water quality standards; therefore, the Department concludes that, as conditioned below, the proposed WQC

amendment meets the designated use of habitat for fish and other aquatic species, 38 M.R.S § 465 (3)(A), and all other applicable water quality standards.

4. Gambo. The applicant has provided adequate evidence that the proposed WQC amendment to remove the requirement for fish passage construction for the term of the license for the Gambo Project is warranted under the changed circumstances since issuance of the 2003 Combined WQC and does not affect or violate any fish passage requirements or applicable water quality standards. There are no Phase I fish passage requirements for this project under the existing 2003 Combined WQC, and Phase II fish passage provisions for this project have no firm deadline and are left to the discretion of MDMR, which now includes ASC and supports the WQC amendment, and MDIFW, which does not oppose the WQC amendment. As conditioned, applicable water quality standards will continue to be met for the term of the license, even if extended as contemplated by the Settlement Agreement; therefore, the Department concludes that the proposed WQC amendment meets the designated use of habitat for fish and other aquatic species, 38 M.R.S.§ 465(4)(A) and all other applicable water quality standards.

5. Dundee. The applicant has provided adequate evidence that the proposed WQC amendment to remove the requirement for fish passage construction for the term of the license for the Dundee Project is warranted under the changed circumstances since issuance of the 2003 Combined WQC and does not affect or violate any fish passage requirements or applicable water quality standards. There are no Phase I fish passage requirements for this project under the existing 2003 Combined WQC, and Phase II fish passage provisions for this project have no firm deadline and are left to the discretion of MDMR, which now includes ASC and supports the WQC amendment, and MDIFW, which does not oppose the WQC amendment. As conditioned, applicable water quality standards will continue to be met for the term of the license, even if extended as contemplated by the Settlement Agreement; therefore, the Department concludes that the proposed amendment meets the designated use of habitat for fish and other aquatic life, 38 M.R.S § 465-A (1)(A), and all other applicable water quality standards.

THEREFORE, the Department APPROVES the above noted WQC Amendment applications of S.D. Sappi Company for the Saccarappa, Mallison Falls, Little Falls, Gambo, and Dundee Projects, as described

above, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations:

STANDARD CONDITIONS OF APPROVAL

Standard Conditions #1, 2, 3, 4, and 10, as attached below, apply to the upstream WQC Amendments.

1. SPECIAL CONDITIONS OF APPROVAL

All terms and conditions of Department Order #L-19717-33-E-N dated April 30, 2003 and subsequent Orders relating to the operation of the existing SHP, including fish passage, shall remain in effect and enforceable by the Department as specified above in Condition 2 ("Conditions of Prior Approval") set forth in Section 10 of this Order.

2. WQC AMENDMENTS

All terms and conditions of Department Orders #L-19717-33-N-M (Saccarappa), #L- 19716-33-E-N (Mallison Falls), #L-19715-33-E-N (Little Falls), #L-19714-33-E-N
(Gambo), and #L-19713-33-E-N (Dundee) remain in effect for the upstream Mallison Falls, Little Falls, Gambo and Dundee Projects, except as follows:

Saccarappa. Special Condition #5.A. of Department Order #L-19717-33-E-N reads as follows:

A. The applicant shall install and operate upstream fish passage facilities at the project:

Phase I. A Denil "fish ladder" or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 18,000 American shad, 109,000 blueback herring, and 273 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage is available at the downstream Cumberland Mills dam.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 58,000 American shad, 353,000 blueback herring, and 426 Atlantic salmon

annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

Department Order #L-19717-33-N-M hereby modifies Special Condition #5.A. for the Saccarappa Project as follows:

B. The applicant shall install and operate upstream passage facilities at the project:

Phase I. A Denil fishway, or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 18,000 American Shad, 109,000 blueback herring, and 273 Atlantic salmon annually. These facilities, which shall include a counting, trapping, and sorting facility, must be in operation no later than eight years after passage is available at the downstream Cumberland Mills dam.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing target species, designed to pass up to 58,000 American shad, 353,000 blueback herring, and 426 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

Mallison Falls. Condition 5. of Department Order #L-19716-33-E-N reads as follows:

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

Phase I. A Denil "fish ladder" or other passage facilities of comparable efficiency in passing the target species, designed to

pass at least 4,200 American shad, 26,000 blueback herring, and 32 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream SHP.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 44,000 American shad, 270,000 blueback herring, and 185 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Department Order #L-19716-33-G-M herby modifies Condition 5. as follows:

A. Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, S.D. Sappi shall either (1) two years thereafter construct and operate upstream and downstream fish passage facilities at the project in accordance with A., Phase I and Phase II, and B. of Section 5 of the 2003 Water Quality Certification for the Mallison Falls Hydroelectric Project (Project #L-19716-33-E-N) and as required by the Mallison Falls Project FERC license, or (2) three years thereafter surrender its FERC license, and remove, at a minimum, all dam spillways at the Project.

Upstream Fish Passage - Phase I. A Denil fishway or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 4,200 American shad, 26,000 blueback herring, and 32 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream SHP.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 44,000 American shad, 270,000 blueback herring, and 185 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources and the Department of Inland Fisheries and Wildlife of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

Downstream Fish Passage. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Little Falls. Condition 5. of Department Order #L-19715-33-E-N reads as follows:

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

Phase I. A Denil "fish ladder" or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 3,100 American shad, 19,000 blueback herring, and 15 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or

18,020 blueback herring in any single year at the downstream SHP.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 43,000 American shad, 263,000 blueback herring, and 168 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources, the Department of Inland Fisheries and Wildlife, and the Atlantic Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Little Falls Dam, whichever comes first.

Department Order #L-19715-33-G-M hereby modifies Condition 5. as follows:

A. Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, S.D. Sappi shall either (1) two years thereafter construct and operate upstream and downstream fish passage facilities at the project in accordance with Section 5 A. of the 2003 Water Quality Certification for the Little Falls Hydroelectric Project (Project #L-19715-33-E-N) and as required by the Little Falls Project FERC license, or (2) three years after removal of the Mallison Falls spillways, surrender its FERC license, and remove, at a minimum, all dam spillways at the Project.

Upstream Fish Passage - Phase I. A Denil fishway or other passage facilities of comparable efficiency in passing the target species, designed to pass at least 3,100 American shad, 19,000 blueback herring, and 15 Atlantic salmon annually. These

facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after passage of at least 2,960 American shad or 18,020 blueback herring in any single year at the downstream SHP.

Phase II. Convert or replace the Phase I passage facilities with a fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 43,000 American shad, 263,000 blueback herring, and 168 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after (1) notification from the Department of Marine Resources and the Department of Inland Fisheries and Wildlife, of initiation of Phase II restoration above Gambo Dam and (2) the capacity of the installed Phase I passage facilities has been reached for any of the target species.

Downstream Fish Passage. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources of sustained stocking of anadromous fish above the Mallison Falls Dam, whichever comes first.

Gambo. Condition 5. of Department Order #L-19714-33-E N reads as follows:

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

Phase I. No upstream fish passage facilities required.

Phase II. A fish lift, or other passage facilities of comparable efficiency in passing the target [species], designed to pass up to 40,000 American shad, 244,000 blueback herring, and 153 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after
(1) notification from the Department of Marine Resources, the Department of Inland Fisheries and wildlife, and the Atlantic

Salmon Commission of initiation of Phase II restoration above Gambo Dam and (2) passage of at least 620 American shad or 3,800 blueback herring in any single year at the downstream Little Falls Project.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources or the Atlantic Salmon Commission of sustained stocking of anadromous fish above the Gambo Dam, whichever comes first.

Department Order #L-19714-33-G-M herby modifies Condition 5. as follows:

A. No fish passage facilities are required for the term of the FERC license issued on October 3, 2003 for the Gambo Hydroelectric Project, or for the term of any extension by amendment of that license.

Dundee. Condition 5. of Department Order #L-19713-33-E-N reads as follows:

A. The applicant shall install and operate the following upstream fish passage facilities at the project:

Phase I. No upstream fish passage facilities required.

Phase II. A fish lift, or other passage facilities of comparable efficiency in passing the target species, designed to pass up to 20,000 American shad, 122,000 blueback herring, and 64 Atlantic salmon annually. These facilities, which shall include a counting, trapping and sorting facility, must be operational no later than 2 years after
(1) notification from the Department of Marine Resources and the Department of Inland Fisheries and wildlife, of initiation of Phase II restoration above Gambo Dam and (2) passage of at least 4,020 American shad or 24,460 blueback herring in any single year at the downstream Gambo Project.

B. The applicant shall install and operate downstream passage facilities designed to pass American shad, blueback herring and Atlantic salmon at the project. These facilities shall be operational concurrent with the completion of upstream anadromous fish passage facilities at the project or within 2 years following notification by the Department of Marine Resources of sustained stocking of anadromous fish above the Dundee Dam, whichever comes first.

Department Order #L-19713-33-N-M hereby modifies Condition 5. as follows:

A. No fish passage facilities are required for the term of the FERC license issued on October 3, 2003 for the Dundee Hydroelectric Project, or for the term of any extension by amendment of that license.

4. SEVERABILITY

If any provision, or part thereof, of any of these certifications is declared to be unlawful by a reviewing court, the remainder of the certification shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

APPLICABLE WATER QUALITY STANDARDS

A. Classification. The waters of the Presumpscot River including all impoundments, and its tributaries that will be affected by all five Presumpscot River Projects, are currently classified as follows:

Presumpscot River and its tributaries:

Class A – from the outlet of Sebago Lake to its confluence with the Pleasant River, excluding Dundee Pond.

Class GPA – Dundee Pond.

Class B – from its confluence with the Pleasant River to Saccarappa Falls.

The receiving water that may be affected by the proposed project is currently classified as follows:

Class C – from Saccarappa Falls to tidewater.

B. Designated Uses. Pursuant to 38 M.R.S. § 465(2) (A), Class A waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life.

Pursuant to 38 M.R.S. § 465(3) (A), Class B waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life.

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

Pursuant to 38 M.R.S. § 465-A(1)(A), Class GPA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; recreation in and on the water; fishing; agriculture; industrial process and cooling water supply; hydroelectric power generation; navigation; and as habitat for fish and other aquatic life

C. Numeric Standards. Pursuant to 38 M.R.S. § 465(2)(B), the dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% saturation, whichever is higher.

Pursuant to 38 M.R.S. § 465(3)(B), the dissolved oxygen content of Class B waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration shall not be less than 9.5 parts per

million and the 1-day minimum dissolved oxygen concentration shall not be less than 8.0 parts per million in identified fish spawning areas.

Pursuant to 38 M.R.S. § 465(4) (B), the dissolved oxygen content of Class C waters 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. In order to provide additional protection for the growth of indigenous fish, the 30-day average dissolved oxygen criterion of a Class C water is 6.5 parts per million using a temperature of 22 degrees centigrade or the ambient temperature of the water body, whichever is less, if (a) a license or water quality certificate other than a general permit was issued prior to March 16, 2004 for the Class C water and was not based on a 6.5 parts per million 30-day average dissolved oxygen criterion, or (b) a discharge or a hydropower project was in existence on March 16, 2005 and required but did not have a license or water quality certificate other than a general permit for the Class C water. In Class C waters not governed by the conditions described in (a) and (b), 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. This criterion for the water body applies to licenses and water quality certificates issued on or after March 16, 2004.

Pursuant to 38 M.R.S. § 465-A(1)(B), Class GPA waters must be described by their trophic state based on measures of the chlorophyll "a" content, Secchi disk transparency, total phosphorous content, and other appropriate criteria. Class GPA waters must a have a stable or decreasing trophic state, subject only to natural fluctuations, and must be free of culturally induced algae that impair their use and enjoyment.

In accordance with 38 M.R.S. § 464(13), compliance with dissolved oxygen criteria in existing riverine impoundments is measured as follows:

1. Compliance is not measured within 0.5 meters of the bottom;

2. Where mixing is inhibited due to thermal stratification, compliance is not measured below the point of thermal stratification when such stratification occurs; and

3. Where mixing is inhibited due to natural topographic features,

compliance is not measured within that portion of the impoundment that is topographically isolated. Such natural topographic features may include, but not be limited to, natural deep holes or river bottom sills.

D. Narrative Standards. The habitat of Class A waters shall be characterized as natural. Except as provided in 38 M.R.S. § 465(2)(C), direct discharges to these waters licensed after January 1, 1986 are permitted only if, in addition to satisfying all the requirements of this article, the discharged effluent will be equal to or better than the existing water quality of the receiving waters.

The habitat of Class B waters shall be characterized as unimpaired. Discharges to Class B waters shall not cause adverse impact to aquatic life in that the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

Discharges to Class C waters may cause some changes to aquatic life, except that the receiving waters must be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community[8].

The habitat of Class GPA waters shall be characterized as natural. There may be no new direct discharge of pollutants into Class GPA waters. Material may not be placed on or removed from the shores or banks of a Class GPA water body in such a manner that materials may fall or be washed into the water or that contaminated drainage may flow or leach into those waters, except as permitted pursuant to section 480-C. A change of land use in the watershed of a Class GPA body may not, by itself or in combination with other activities, cause water quality degradation that impairs the characteristics and designated uses of downstream GPA waters or causes an increase in the trophic state of those GPA waters. 38 M.R.S. § 465(3)(A), 38 M.R.S. § 465(3)(C), 38 M.R.S. § 465(4)(C), 38 M.R.S. § 465-A(1)(A).

Pursuant to 38 M.R.S. § 467(9)(1-A), for the purposes of water quality certification of the Dundee hydropower project, Class A habitat characteristics and aquatic life criteria of the waters immediately downstream and measurably affected by that project are deemed to be met if the Class B habitat characteristics and aquatic life criteria, as described in 38 M.R.S. § 465(3)(A,C), are met.

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

APPENDIX B
FISHWAY PRESCRIPTIONS
U.S. DEPARTMENT OF INTERIOR
(Original issuance February 5, 2002, and amended on November 15, 2016)

UNITED STATES DEPARTMENT OF THE INTERIOR'S DECISION DOCUMENT, PRESCRIPTIONS FOR FISHWAYS PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT

10. Prescription for Fishways

Pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Department of the Interior, as delegated to the Service, exercises her authority to prescribe the construction, operation, and maintenance of such fishways as deemed necessary.

10.1 General Prescriptions for the Presumpscot River Projects

A. This prescription for fishways is based on the assumption that fish passage or dam removal would be achieved at the downstream Smelt Hill Dam and the Cumberland Mills Dam, and that the Commission will not order the removal of the Saccarappa, Mallison Falls, and/or Little Falls Projects, as described in the DEIS. (DEIS, p. 28). Several interested parties, including the Department, have urged the removal of one or more of these projects. If, in its public interest consideration and licensing decision, the Commission orders the removal of one or more of these projects, the Department will modify its Prescription for Fishways accordingly.

B. Fishways shall be constructed, operated, and maintained to provide safe, timely, and effective passage for Atlantic salmon, American shad, blueback herring, and American eels at the licensee's expense.

To ensure the immediate and timely contribution of the fishways to the on-going and planned anadromous and catadromous fish restoration and enhancement program in the Presumpscot River, the following are included and shall be incorporated by the licensee to ensure the effectiveness of the fishways pursuant to Section 1701(b) of the 1992 National Energy Policy Act (P.L. 102-486, Title XVII, 106 Stat. 3008).

C. <u>Design Populations</u>

The total number of returning fish reaching the lowermost of the five projects covered in this relicensing would depend on a number of factors, including whether fishways are installed or dam removals are used to achieve passage. Overall fishway efficiency and

cumulative losses of fish attempting to use the upstream and downstream fish passage facilities also would affect the total potential restored run of shad, river herring, salmon, and eels.

1. Shad and River Herring

Based on current estimates, restored runs of shad and river herring in the Presumpscot River could approach 75,000 Shad, 200,000 Alewives, and 450,000 Blueback Herring. The numbers of fish expected to pass each of the dams on the river are contained in the Department's Administrative Record and are summarized below (See Table 1).

2. Atlantic Salmon

Projections for restored runs of Atlantic salmon runs have been calculated, along with minimum levels of escapement at each dam needed to ensure that restoration and management goals are met. Those numbers of fish also are summarized below. It is unlikely, however, that the run of salmon would be large enough to affect the design of fishways at any of the five project dams. The more numerous species (Shad and Herring) typically determine the kind of fish passage that should be built at a hydroelectric project.

3. American Eel

American eels already are present in the area occupied by the five projects. While the Department does not have a precise estimate of the numbers of eels that would be expected to use fish passage at the projects, such passage would enhance the eel stocks and help achieve overall management goals. In addition, upstream passage needs for eels differ from those of salmon, shad, and river herring. Separate upstream eel fishways typically are installed at barriers in addition to those that are provided for anadromous fish.

Table 1. Summary of Fishway Design Populations

Project	Species	Phase 1*	Phase 2*
Saccarappa	American shad	18,000	58,000
	Blueback herring	109,000	353,000
	Atlantic salmon	273	426
	American eel	undetermined	undetermined
Mallison Falls	American shad	4,200	44,000
	Blueback herring	26,000	270,000
	Atlantic salmon	32	185
	American eel	undetermined	undetermined
Little Falls	American shad	3,100	43,000
	Blueback herring	19,000	263,000
	Atlantic salmon	15	168

	American eel	undetermined	undetermined
Gambo	American shad Blueback herring Atlantic salmon American eel	-- -- -- undetermined	40,000 244,000 153 undetermined
Dundee	American shad Blueback herring Atlantic salmon American eel	-- -- -- undetermined	22,000 122,000 64 undetermined

Note: Data provided by State agencies rounded to nearest (1,000) above 10,000.
(*) See Paragraph 10.1.E on Scheduling.

4. Other Species

Fish passage provided at one or more of the five projects would be expected to pass trout, landlocked salmon, and other riverine species. The numbers of riverine fish using the fishways are likely to be small, relative to anadromous and catadromous species.

D. Upstream fishways shall be operationa1 during the designated migration period at river flows up to 3,000 cfs (See Table 2), as measured at the USGS gage at Westbrook (#01064118). Downstream fishways shall be operated during the designated migration period whenever units are operated at the Presumpscot River projects.

Table 2. Upstream and downstream migration periods for species covered in this Prescription for Fishways. *

Species	Upstream Migration Period	Downstream Migration Period
Atlantic salmon	April 15 – November 15	April 1 – June 30 (smolts & kelts) October 15 – December 31 (kelts)
American shad	May 1 – July 15	August 1 – November 15 (juv.) May 15 – August 1 (adult)
Alewife & blueback herring	May 1 – July 15	July 15 – November 15 (juv.) May 15 – August 1 (adult)
American eel	April 1 – June 30 **	July 15 – November 15 ***

* Any of these migration periods may be changed during the term of the license by the

Service, based on new information, in consultation with the other fishery agencies and the licensee.

** The eel upstream migration period will need to be refined as more information is made available. The Service is calling for the licensee to study the duration and timing of upstream eel migration through the projects so that the effectiveness of this period can be evaluated.

*** July 15 – November 15 is the period set by the State of Maine for harvesting silver eels. The Service is initially using a reduced period, September 1 – October 31 as the downstream migration period for eels. The Service is calling for the licensee to study the magnitude and timing of downstream eel migration through the projects so that the effectiveness of the reduced period can be evaluated.

E. Scheduling

The timing of installation of fish passage at all five projects would be based on the growth of migratory and riverine fish populations in the Presumpscot River. American eels already are present in the river and would benefit from the immediate implementation of safe, timely, and effective upstream and downstream fishways. The Commission's DEIS also recommends permanent upstream eel fishways at all five projects (DEIS, p. 225).

A fishway must be installed at Saccarappa Dam as soon as passage is achieved at Smelt Hill and Cumberland Mills. The Commission will need to include appropriate license articles requiring preparation of detailed design plans, installation schedules, and studies to evaluate effectiveness of all upstream and downstream measures to be developed in consultation with the Service and other resource agencies. In order to allow for proper consultation with resource agencies and approval by the Commission of all design plans, permanent fish passage must be operational at the Saccarappa Dam within**6** years of the completion of fishway installation at Cumberland Mills Dam (or within 2 years of its removal or breaching). If Saccarappa Dam is not relicensed, and is subsequently removed, the Commission must place similar requirements for implementing fish passage at the license for the next upstream project (Mallison Falls). Numbers of fish counted at each barrier that would be sufficient to trigger installation of fishways at upstream dams is provided below in Table 3.

Upstream fish passage for American eels shall be fully operational no later than 2 years after the date of issuance of a new license. Downstream passage (shutdowns) shall be implemented as soon as the licenses are effective (30 days after date of license issuance). This will ensure that the existing eel resource in the Presumpscot River benefits from passage improvements as soon as practicable.

Table 3. Schedule for implementation of fish passage at Presumpscot River Projects.

Project	Phase 1	Phase 2
Saccarappa	**Anadromous Fish**: **Upstream passage** completed **6** years after passage is available at Cumberland Mills Dam. **Downstream passage** will be completed concurrent with the completion of upstream passage. However, in the event that the Department notifies the licensee that sustained annual stocking of anadromous fish above the project has begun or will begin within 2 years, the downstream passage facility shall be constructed within 2 years of this notice. **American Eel**: **Upstream passage** within 2 years of licensing. **Downstream passage** (shutdowns) within 30 days of licensing. (*)	**Anadromous Fish**: **Upstream passage** upgrade of capacity in accordance with design populations for Phase 2.
Mallison Falls and Little Falls	**Anadromous Fish**: **Upstream passage** will be completed 2 years after 2,960 American shad or 18,020 blueback herring are passed in any single season at Saccarappa Dam. (**)(***) **Downstream passage** will be completed concurrent with the completion of upstream passage. However, in the event that the Department notifies the licensee that sustained annual stocking of anadromous fish above the project has begun or will begin within 2 years, the downstream passage facility shall be constructed within 2 years of this notice.	**Anadromous Fish**: **Upstream passage** upgrade of capacity in accordance with design populations for Phase 2.

	American Eel: **Upstream passage** within 2 years of licensing **Downstream passage** (shutdowns) within 30 days of licensing. (*)	
Gambo	**American Eel**: **Upstream passage** within 2 years of licensing **Downstream passage** (shutdowns) within 30 days of licensing. (*)	**Anadromous fish**: **Upstream passage**, pending agency review of Phase 1 for the downstream projects, will be completed 2 years after 620 American shad or 3,800 blueback herring are passed in any single season at Little Falls Dam. **Downstream passage** will be completed concurrent with the completion of upstream passage. However, in the event that the Department notifies the licensee that sustained annual stocking of anadromous fish above the project has begun or will begin within 2 years, the downstream passage shall be constructed within 2 years of this notice.
Dundee	**American Eel**: **Upstream passage** within 2 years of licensing **Downstream passage** (shutdowns) within 30 days of licensing. (*)	**Anadromous fish**: **Upstream passage**, pending agency review of Phase 1 for the downstream projects, will be completed 2 years after 4,020 American shad or 24,460 blueback herring are passed in any single season at Gambo Dam. **Downstream passage** will be completed concurrent with the completion of upstream passage. However, in the event that the Department notifies the licensee that

		sustained annual stocking of anadromous fish above the project has begun or will begin within 2 years, the downstream passage shall be constructed within 2 years of this notice.

(*) Initially, downstream passage will be via spill resulting from project shutdown for 8 hours per day beginning at sunset from September 1 through October 31. The timing and magnitude of eel migration through the projects is to be evaluated and reported by the licensee and changed as deemed necessary and appropriate by the Service. There will be consultation at each step.

(**) The trigger numbers represent 20 percent of the estimated production of these species for each reach.

(***) Design of upstream fishways will be based on potential size of the runs of shad and blueback Herring. In the event that the shad and blueback herring trigger numbers are not reached, the Service, in consultation with the MASC, will assess the options for passing any runs of Atlantic salmon that may be present.

F. The timely installation of the prescribed fishway structures, facilities, or devices is a measure directly related to those structures, facilities, or devices and is necessary to ensure the effectiveness of such structures, facilities, or devices. Therefore, the Department's Prescription includes the express requirement that the licensee (1) notify, and (2) obtain approval from the Service for any extensions of time to comply with the provisions included in the Department's Prescriptions for fishways.

G. Regarding the timing of seasonal fishway operations, fishways shall be maintained and operated, at the licensee's expense, to maximize fish passage effectiveness throughout the upstream and downstream migration periods for Atlantic salmon, American shad, blueback herring, and American eel. The migration periods for these fish species in the Presumpscot River are shown above in Table 2.

H. The licensee shall keep the fishways in proper order and shall keep fishway areas clear of trash, logs, and material that would hinder passage. Anticipated maintenance shall be performed sufficiently before a migratory period such that fishways can be tested and inspected, and would operate effectively prior to and during the migratory periods. In consultation with the Service and other fishery agencies, the licensee shall develop a fishway maintenance plan describing the anticipated maintenance, a maintenance schedule, and contingencies. The plan shall be submitted to the Service for final review and approval, and the plan shall contain the consultation comments of the fishery agencies. If any agency

recommendation is not incorporated, the licensee's explanation shall be in the plan that is filed with the Commission. Upon approval by the Service, the licensee shall submit the plan to the Commission for approval.

I. The licensee shall develop plans for and conduct fishway effectiveness evaluations in consultation with the Service and other fishery agencies on all prescribed fish passage. The plans and results of effectiveness studies shall be submitted to the Service for final review and approval, and the plan shall contain the consultation comments of the fishery agencies. If any agency recommendation is not incorporated, the licensee's explanation shall be in the plan that is filed with the Commission. Upon approval by the Service, the licensee shall submit the plan to the Commission for approval.

J. The licensee shall provide personnel of the Service, and other Service-designated representatives, access to the project site and to pertinent project records for the purpose of inspecting the fishways to determine compliance with the fishway prescriptions.

K. The licensee shall develop, in consultation with and submit for approval by the Service, all functional and final design plans, construction schedules, and any hydraulic model studies for the fishways or modifications to existing fishways described herein.

10.2 Specific Prescriptions for the Presumpscot River Projects

10.2.1 Saccarappa Project (FERC #2897)

10.2.1.1 Phase 1

10.2.1.1.1 Upstream Fishways

Prescription item #1 – Construct a Denil fish ladder (4 ft. W x 1-on-8 slope) at the Saccarappa project powerhouse. The fishway is to include facilities for counting, trapping, and sorting in the exit channel, and have two gated entrances capable of collecting migrants in the powerhouse tailrace and at the west side of the spillway. The design of the Phase 1 Denil fish ladder should include provisions to facilitate the conversion to a possible future Phase II fish lift. Modifications are to be made to the tailrace guard wall to provide access for fish attracted to the spillway.

Prescription item #2 – Provide up to 30 cfs attraction flow at each of two fish ladder entrances (up to 60 cfs total attraction flow).

Prescription item #3 – Install a separate upstream fishway for American eels; the specific location of this eelway at the project and other design criteria to be determined by the U.S. Fish and Wildlife Service following consultation with the licensee and Maine Department of Marine Resources.

10.2.1.1.2 Downstream Fishways

Prescription item #4 – Install trashracks with a 1-inch clear opening at the powerhouse turbine intake and gated surface bypass discharging up to 40 cfs during the downstream migration periods.

Prescription item #5 – Shutdown generation at sunset for at least 8 hours per night from September 1 through October 31 to provide out-migrating American eels safe and timely passage downstream via flows over the dam. To aid in the effectiveness evaluation of this item, monitor and report the timing and magnitude of eel out-migration past the project for 3 years.

10.2.1.2 Phase II

Prescription item #6 – Construct a separate Denil fish ladder at the spillway; include facilities for counting, trapping, and sorting. Attraction flow at the entrance of the Denil should be up to 30 cfs.

Prescription item #7 – Convert the Phase I Denil fish ladder at the powerhouse to a fishlift (hopper capacity: 750 gallon) when the capacity of the Denil fish ladder is reached (20,000 shad or 200,000 river herring). The Phase II fishlift will continue to have two gated entrances (powerhouse tailrace and west side of spillway), each discharging up to 30 cfs attraction flow, and retain existing or modified facilities for counting, trapping, and sorting.

U.S. DEPARTMENT OF INTERIOR
SECTION 18 MODIFIED FISHWAY PRESCRIPTIONS
(Amendments June 11 and 22, 2018)

Pursuant to the Agreement and its Amendment, the Service hereby exercises its reserved authority under the Federal Power Act to amend its Section 18 prescription for the Saccarappa Project (P-2897), Mallison Falls Project (P-2932), Little Falls Project (P-2941), Gambo Project (P-2931), and Dundee Project (P-2942), as provided below.

Please note that none of the below changes are intended to adjust or remove prescription requirements for the passage of American Eel. Therefore, all American Eel prescription requirements remain unchanged.

Saccarappa (No. 2897)

Consistent with Section 2.1.4.1 of the Agreement and its Amendment:

1) The deadline for operational upstream passage for anadromous fish at the Saccarappa Project is extended until **May 2021**.

2) The third sentence of the second paragraph of Section 10.1(E) of the prescription is hereby amended to provide as follows:

"In order to allow for proper consultation with resource agencies and approval by the Commission of all design plans, permanent fish passage must be operational at the Saccarappa Dam within **8 years** of the completion of fishway installation at Cumberland Mills Dam, or at such later time as may be designated by the Service by written notice to the Commission."

3) The section of Table 2 in the prescription that applies to anadromous fish upstream passage at the Saccarappa Project shall be amended as follows:

"Upstream passage will be completed **8 years** after passage is available at Cumberland Mills Dam, or at such later time as may be designated by the Service by written notice to the Commission."

Consistent with Section 2.1.8.1 of the Agreement:

4) Insert the following new language into the Saccarappa prescription:

"Warren shall be responsible for operating and maintaining the Denil and supporting structures (including the fish counting facility and any remaining portions of the lower

falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purposes of effectiveness testing."

Mallison Falls (No. 2932)

5) Consistent with Section 2.2.1 of the Agreement, the Prescription is hereby modified such that:

Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility, Warren shall, two years thereafter, construct the fish passage as required by Section 10.2.2 of the prescription. The Service will stay the requirement for construction of fish passage, via a letter to the Commission, if, one year after the above trigger numbers are met, Warren has filed with the Commission an application to surrender the license for Mallison Falls and such application proposes to remove all dam spillways at the project. The Service retains the authority to lift or extend the stay, through a subsequent letter to the Commission, if Warren withdraws the surrender application, FERC denies it, or there are excessive or unnecessary delays in the surrender application process attributable to Warren's bad faith action or inaction. The requirement for construction of fish passage at Mallison Falls will be eliminated when FERC grants final approval to Warren to surrender its Mallison Falls FERC license.

Upon the effective date of the surrender of the Saccarappa license, Warren shall be responsible for operating and maintaining the Saccarappa Denil and supporting structures (including the fish counting facility and any remaining portions of the lower falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purpose of effectiveness testing.

Little Falls (No. 2941)

6) Consistent with Section 2.2.2 of the Agreement, the Prescription is hereby modified such that:

Upon the occurrence of 2,960 American shad or 18,020 blueback herring passing in any single season at the Saccarappa fish counting facility (Trigger Date), Warren shall, two years thereafter, construct the fish passage as required by Section 10.2.3 of the

prescription. The Service will stay the requirement for construction of fish passage, via a letter to the Commission, if, at some time less than two years after the Trigger Date, Warren has submitted a letter to the Service indicating an intent to remove the Little Falls project within six years from the Trigger Date. The stay shall be extended if, by one year after the Trigger Date, Warren has filed with the Commission an application to surrender the license for Mallison Falls and that such application proposes to remove all dam spillways at the Mallison project. The stay shall be further extended if, within three years from the Trigger Date, the Mallison Falls project spillway is removed, or Warren has made good faith efforts to do so within that time frame, and subsequently does so. The stay shall be further extended, if, within four years after the Trigger Date, Warren has filed with the Commission an application to surrender the license for Little Falls and that such application proposes to remove all dam spillways at the project. The Service retains the authority to lift or extend the stay, through a subsequent letter to the Commission, if Warren withdraws the surrender application, FERC denies it, or there are excessive or unnecessary delays in the surrender application process attributable to Warren's bad faith action or inaction. The requirement for construction of fish passage at Little Falls will be eliminated when FERC grants final approval to Warren to surrender its Little Falls FERC license.

Upon the effective date of the surrender of the Saccarappa license, Warren shall be responsible for operating and maintaining the Saccarappa Denil and supporting structures (including the fish counting facility and any remaining portions of the lower falls tailrace guard wall), in accordance with the O&M Plan attached as Exhibit D to the November 15, 2016 Settlement Agreement, incorporated herein and attached hereto. Fish counting at the Saccarappa Denil upstream fishway facility is not required to commence until 2024, although state and federal resource agencies shall be provided access to the fish counting facility for the purposes of effectiveness testing.

Gambo (No. 2931) and Dundee (No. 2942)

7) Consistent with Section 2.2.3 of the Agreement, the Prescription is hereby modified to eliminate requirements for fish passage at Gambo and Dundee.