

Appendix B

Draft Operations and Compliance Monitoring Plan

RIPOGENUS HYDROELECTRIC PROJECT

(FERC NO. 2572)

PENOBSCOT MILLS HYDROELECTRIC PROJECT

(FERC NO. 2458)

DRAFT OPERATIONS AND COMPLIANCE MONITORING PLAN

GREAT LAKES HYDRO AMERICA, LLC

Millinocket, Maine

July 2025

RIPOGENUS HYDROELECTRIC PROJECT (FERC NO. 2572)
PENOBSCOT MILLS HYDROELECTRIC PROJECT (FERC NO. 2458)
DRAFT OPERATIONS AND COMPLIANCE MONITORING PLAN

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Draft Operations and Compliance Monitoring Plan

1.0 Introduction

Great Lakes Hydro America, LLC (“GLHA” or “Licensee”) is the Licensee of the Ripogenus Hydroelectric Project (FERC No. 2572) and the Penobscot Mills Hydroelectric Project (FERC No. 2458) (hereinafter referred to individually as the “Ripogenus Project” or “Penobscot Mills Project” or collectively as the “Projects”). The Projects are located on the West Branch of the Penobscot River (West Branch) and Millinocket Stream in Piscataquis and Penobscot Counties, Maine.

On October 22, 1996, FERC issued new, 30-year licenses for the Projects, which expire on September 30, 2026. GLHA is in the process of pursuing new licenses from FERC for the continued operation of the Projects.

On September 30, 2024, GLHA filed the Final License Application (FLA) for the continued operations and maintenance of the Projects as proposed in the FLA. This Operations and Compliance Monitoring Plan was developed to describe the proposed operations and associated compliance and monitoring for the Projects.

2.0 Description of the Projects

2.1 Ripogenus Project

The Ripogenus Project is located on the West Branch in Piscataquis County, Maine. The principal features of the Ripogenus Project include: 1) a 795-foot-long, concrete gravity dam; 2) a 3,850-foot-long tunnel; 3) a powerhouse, known as McKay Station, containing three turbine-generator units with an authorized installed capacity of 37.5 MW and a total hydraulic capacity of approximately 3,500 cubic feet per second (cfs); 4) a 20.8-mile-long impoundment having a normal full pond elevation of 941.59 feet (National Geodetic Vertical Datum 1929 [NGVD29]) with a surface area of 29,270 acres and Umbazooksus Lake with a surface area of 1,600 acres; 5) a 29.4-mile-long transmission line; and 6) a battery energy storage system.

2.2 Penobscot Mills Project

The Penobscot Mills Project includes five developments (four hydropower developments and one storage development). The four hydropower developments are (listed in descending order from upstream to downstream): North Twin, Millinocket, Dolby, and East Millinocket, which are

located between river mile (RM) 15 and 2, respectively, on the West Branch. The Millinocket Lake Storage Development is located on Millinocket Stream, which enters the West Branch downstream of the Millinocket Development. The total authorized installed capacity of the Penobscot Mills Project is 67.7 MW.

Millinocket Lake Storage Development

The principal works of the Millinocket Lake Storage Development include: 1) an impoundment having a normal full pond elevation of 480.0 feet with a surface area of 8,640 acres; 2) a concrete and earth-filled dam, measuring approximately 635 feet in length, located at the outlet of Millinocket Lake; and 3) a pumping station containing two pumps, located approximately 6.2 miles from the dam, two 4-foot, 6-inch-diameter steel pipes measuring approximately 544 feet in length, and a concrete outlet structure discharging to Ambajejus Lake (within the North Twin impoundment). No hydroelectric generating facilities are located at this development.

North Twin Development

The principal works of the North Twin Development include: 1) an impoundment having a normal full pond elevation of 491.92 feet with a surface area of 17,790 acres; 2) a concrete and earth-filled dam measuring approximately 1,051 feet in length, including an intake structure and powerhouse containing three turbine-generator units and appurtenant equipment; 3) a series of six earthen dikes having a combined length of 2,530 feet, located upstream of the dam; 4) a 60 Hertz (Hz) substation containing six transformers; and 5) a transmission line approximately 4.2 miles in length that extends to the last transmission pole structure before entering GLHA's Millinocket Substation #4.

Millinocket Development

The principal works of the Millinocket Development include: 1) an impoundment having a normal full pond elevation of 458.7 feet with a surface area of 1,344 acres; 2) a concrete dam (Stone Dam) measuring approximately 1,262 feet in length; 3) a gatehouse located at the dam, containing ten gates and a sluiceway; 4) three earthen dikes in Quakish Lake with a total length of 1,854 feet; 5) five earthen dikes in Ferguson Pond with a total length of 3,195 feet, a "western" canal leading from the gatehouse to Ferguson Pond, and an "eastern" canal leading from Ferguson Pond to the intake structure, all of which are used to convey water from the gatehouse at Stone Dam to the

intake structure located approximately 7,300 feet from Stone Dam; 6) an intake structure containing seven headgates, located at the entrance of the penstocks; 7) six 10-foot-diameter steel penstocks and one 11-foot-diameter steel penstock ranging in length from 1,007 feet to 1,024 feet; 8) a powerhouse containing seven operable turbine-generator units, of which five are located within the former Grinder Room and two are in the Generator Room; 9) two transformers, one having a rated capacity of 30/40/50 megavolt-amperes (MVA) and one at 24/34/40 MVA; and 10) two 60 Hz transmission lines approximately 300 feet in length (one 6.9 kilovolt [kV] and one 13.8 kV).

Dolby Development

The principal works of the Dolby Development include: 1) an impoundment having a normal full pond elevation of 336.2 feet with a surface area of 2,048 acres; 2) a concrete and earth-filled dam measuring approximately 1,395 feet in length, including an intake structure and powerhouse integral with the dam containing four operable turbine-generator units and other appurtenant equipment; 3) a 60 Hz substation containing one transformer having a rated capacity of 15/20 MVA and a second transformer with a rated capacity of 5 MVA; and (4) a transmission line extending approximately 2 miles to the last transmission pole structure before entering GLHA's Powersville Substation.

East Millinocket Development

The East Millinocket Development is located at the former East Millinocket Mill, approximately 2.3 miles upstream of the confluence of the West and East Branches of the Penobscot River and 1.7 miles upstream of Black Bear Hydro Partners, LLC's Medway Hydroelectric Project (FERC No. 2666). The principal works of the East Millinocket Development include: 1) an impoundment having a normal full pond elevation of 287.2 feet with a surface area of 128 acres; 2) a concrete and earth-filled dam measuring approximately 717.5 feet long, including an intake structure and powerhouse integral with the dam containing six turbine-generator units; and 3) a tailrace measuring approximately 1,050 feet long.

3.0 Proposed Operations

Except as temporarily modified by: 1) approved maintenance activities, 2) extreme hydrologic conditions,¹ 3) emergency electrical system conditions,² or 4) agreement between the licensee and the Maine Department of Environmental Protection (MDEP), United States Fish and Wildlife Service (USFWS), and Maine Department of Inland Fisheries and Wildlife (MDIFW) (as appropriate), GLHA proposes the operations detailed in Sections 3.1 and 3.2 below at the Projects.

3.1 Ripogenus Project

During normal operations and normal inflow years, the Ripogenus impoundment elevation will be gradually drawn down through the summer and fall months with the lowest elevation typically reached by late winter in anticipation for the spring thaw and freshet. In the spring, the Ripogenus impoundment elevation will rise based on inflows from the upstream Storage Project (FERC No. 2634), spring thaw, and precipitation with the goal to reach an elevation near full pond by late spring.

GLHA proposes to continue to provide a minimum flow of 100 cfs downstream of Ripogenus Dam into the bypassed reach (Upper Gorge) from July 1 through September 30 annually, released through the manually operated sluice gate at the north end of the dam. During the remainder of the year, flow into the Upper Gorge will be from leakage at the Ripogenus Dam.

GLHA proposes to provide a minimum flow of 1,700 cfs (not including the seasonal minimum flow into the Upper Gorge) year-round downstream of McKay Station (see Table 3-1.1) released through the turbines at McKay Station, unless the station is unavailable during which time the flows will be provided by manually opening gates at Ripogenus Dam.

¹ For the purposes of this Plan, “extreme hydrologic conditions” means the occurrence of events beyond the Applicant’s control, such as, but not limited to, abnormal precipitation, extreme runoff, flood condition, ice condition 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.

² For the purposes of this Plan, “emergency electrical system conditions” means operating emergencies beyond the Applicant’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 temporary abnormal operating conditions, generating unit operation or third-party mandated interruptions under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authority.

GLHA proposes to provide the target boating flows downstream of McKay Station as presented in Table 3-1.2 below, subject to water availability as described in the Low Inflow Protocol (LIP) provided in Attachment 1. The boating flows will be provided through the turbines at McKay Station, unless the station is unavailable during which time the flows will be provided by manually opening gates at Ripogenus Dam.

In response to unplanned turbine outages, GLHA proposes to provide an outage flow of at least 400 cfs from the Project's powerhouse within approximately 20 minutes (however, initiation of the outage flow typically occurs within approximately 5-10 minutes of an outage) of the unplanned outage and, if safe (e.g., based on safe travel conditions to the Project), reestablish the required minimum flow (i.e., by resuming operation of the turbines or via a release from Ripogenus dam) within 24 hours following the initial outage.

GLHA proposes to continue to provide flow into the Holbrook Side Channel via operation of the pipe valve (there are two entrance pipes, one of which is equipped with a valve for increasing or decreasing flows into the channel). GLHA proposes to annually increase flow into the Holbrook Side Channel on or about October 15 by opening the existing pipe valve and then decrease flow to the Channel on or about June 1 by closing the existing pipe valve. GLHA proposes to provide flow to the Holbrook Side Channel during normal, high, and low water years, as the flow in the channel reenters the West Branch shortly downstream.

Consistent with current operations, during sustained adverse or low water years/conditions, operation of the Ripogenus Project may require modifications to the proposed minimum flows (i.e., 100 cfs seasonal bypass flow or 1,700 cfs minimum flow). As further described in the LIP provided in Attachment 1, in response to sustained adverse or low water years/conditions, GLHA proposes to coordinate with the applicable resource agencies (i.e., MDEP, USFWS, and MDIFW) to modify the downstream flow requirements in order to balance resource interests.

**TABLE 3.1-1
 PROPOSED MINIMUM FLOW REQUIREMENTS DOWNSTREAM OF MCKAY
 STATION FOR THE RIPOGENUS PROJECT**

Date Range	Minimum Flow Requirement ¹
Year-round	1,700 cfs downstream of McKay Station (not including the seasonal bypass flow)
Times of generating unit outage	400 cfs with scheduled minimum flows identified above to be resumed as quickly and safely as possible by resuming turbine operations or via releases from Ripogenus Dam, if necessary, but in no event (unless unsafe) in more than 24 hours following the initial outage.

¹ Minimum flow shall be the minimum flow for each hourly period measured based on an hourly average.

**TABLE 3.1-2
 PROPOSED TARGET BOATING FLOWS DOWNSTREAM OF MCKAY STATION
 FOR THE RIPOGENUS PROJECT**

Date Range	Target Boating Flow ¹
May 1 – September 15 (8:30 AM – 5:00 PM)	Normal and wet hydrologic periods ² : • 2,000 cfs (weekdays) • 2,300 cfs (weekend days) Dry hydrologic period ² • 1,800 cfs (daily)
September 16 – October 1 (8:30 AM – 5:00 PM)	Normal and wet hydrologic periods ² : • 2,300 cfs (weekend days) Dry hydrologic period ² • 1,800 cfs (weekend days)

¹ Flows for each hourly period measured on the basis of an hourly average.

² The whitewater flow for each month from May through September is determined on the first day of each month based on an analysis of Total Available Water as described in the Water Use Plan in the application for new license filed with the Commission on December 17, 1991. The determination of “wet,” “normal,” or “dry” shall be determined on a weekly basis. The range of “normal” available water represents the expected available water during normal hydrologic conditions. It is defined as the range between $x-s$ and $x+s$, where “ x ” is the mean value and “ s ” is the standard deviation. Based on a statistical analysis, total available water would be expected to be within this “normal” range two-thirds of the time and outside of this range (“wet” or “dry” years) one-third of the time.

3.2 Penobscot Mills Project

Millinocket Lake Storage Development

GLHA proposes to maintain the water level in the Millinocket Lake impoundment between elevations 480.0 feet and 470.0 feet by either pumping water via the development’s pumping station to the North Twin impoundment, or by releasing water from the dam into Millinocket Stream. During normal operations and normal inflow years, GLHA proposes to fill the Millinocket Lake impoundment in the spring, maintain the impoundment relatively stable during the summer months, and then gradually draw the impoundment down from late fall through late winter to

achieve a late winter/early spring drawdown elevation that allows for storage of the spring high flows.

GLHA proposes to release a minimum flow of 60 cfs from the Millinocket Lake Storage dam into Millinocket Stream from May 1 through October 15, and a minimum flow of 60 cfs, or inflow if less, from October 16 through April 30. Flows into Millinocket Stream will be provided by manual operation of the dam gate(s).

GLHA proposes to provide a target boating flow of 600 cfs from Millinocket Lake Storage dam (via manual operation of the dam gate(s)) into Millinocket Stream for 8 hours on 4 weekend days during the period from June through September, for a total of four 8-hour releases (i.e., a total of 32 hours), subject to water availability. During periods of limited water availability, a boating flow of 600 cfs will be provided for 4 hours for 4 weekend days. The weekend day schedule will be determined each year in consultation with local boating interests at the annual meeting(s) regarding boating flows. If desired by American Whitewater and local boating interests, dates of the monthly 8-hour releases can be adjusted to provide the releases on concurrent weekend days (e.g., forgoing a monthly release for a Saturday and Sunday release during a given month).

North Twin Development

Flows from the Ripogenus Project enter the West Branch and subsequently flow about 21 miles downstream before entering Ambajejus Lake of the North Twin impoundment, which has a normal full pond elevation of 491.92 feet.

Subject to maintaining the 2,000 cfs minimum flow requirement downstream at the Millinocket Development (see below), GLHA proposes to maintain the North Twin impoundment above elevation 488.42 feet (within 3.5 feet from normal full pond elevation of 491.92 feet) from August 22 to October 15. After October 15, GLHA proposes to gradually draw the impoundment down from late fall through late winter to achieve a late winter/early spring drawdown elevation that allows for storage of the spring high flows. After ice out, GLHA will refill the impoundment to an elevation near full pond and then hold the pond at a relatively stable elevation through August 22.

GLHA proposes to continue to operate the North Twin Development to provide flows necessary to meet the existing 2,000 cfs minimum flow requirement in the West Branch downstream of the

Millinocket Development (measured at Shad Pond). Flows from the North Twin Development will typically be provided through the powerhouse, unless the station is unavailable during which time flows will be provided via the dam gates.

Millinocket, Dolby, and East Millinocket Developments

GLHA proposes to operate the Millinocket, Dolby, and East Millinocket developments as run-of-river developments such that outflows approximate inflows (with typical impoundment elevation fluctuations of 1 foot or less from top of flashboards when fully installed or from the spillway crest when the flashboards are not fully installed). The run-of-river operations are intended to pass the minimum flows provided by the upstream developments, and the 1-foot fluctuation allowance is intended to support management of inflows without resulting in frequent license deviations.

GLHA proposes to provide a year-round minimum flow of 200 cfs downstream of Stone Dam in the West Branch. The minimum flow will be provided via a notched flashboard designed to pass 200 cfs over the normal range of impoundment elevations. Although infrequent, during times when the impoundment is required to be drawn down, GLHA will consult with MDEP to establish an alternative means of providing the required minimum flow.

GLHA proposes to continue to provide a minimum flow of 2,000 cfs to the West Branch downstream of the Millinocket Development (measured at Shad Pond), which is based on the combined flows from Millinocket Stream and the West Branch.

4.0 Compliance Monitoring

4.1 Ripogenus Project

Headpond Elevations

Headpond elevation will be measured via a pressure transducer located in the impoundment near the Ripogenus Dam and recorded via the Project's SCADA system. Daily headpond elevation will be posted to the existing public website (www.safewaters.com).

Minimum Flows

The seasonal minimum flow into the Upper Gorge (July 1 through September 30) will be provided by manually opening the gate at the crest-mounted log sluice to an opening that provides at least 100 cfs based on the impoundment elevation. The minimum flow will be verified based on the gate opening and impoundment elevation in relation to the gate discharge curve.

The proposed minimum flow into the West Branch downstream of McKay Station will be provided by the turbines at McKay Station. During times when McKay Station is not available, the required minimum flow will be provided by manual operation of gates at Ripogenus Dam. The minimum flow will be verified by a U.S. Geological Survey (USGS) streamflow gage to be installed in the West Branch downstream of McKay Station.

Boating Flows

The proposed boating flows will be provided by the turbines at McKay Station. During times when McKay Station is not available, the proposed boating flows will be provided by manual operation of gates at Ripogenus Dam. The proposed boating flow will be verified by a USGS streamflow gage to be installed in the West Branch downstream of McKay Station.

4.2 Penobscot Mills Project

4.2.1 Millinocket Lake Storage Development

Headpond Elevations

Headpond elevation will be measured via a pressure transducer located in the impoundment near the Millinocket Lake Storage Dam and recorded via the Project's SCADA system. Daily headpond elevation will be posted to the existing public website (www.safewaters.com).

Minimum Flow

The proposed minimum flow into Millinocket Stream will be provided by manually opening a gate at the Millinocket Lake Storage Dam based on the impoundment elevation. The minimum flow will be verified based on the gate opening and impoundment elevation in relation to the gate

discharge curve. Flows released from the Millinocket Lake Storage Development will be posted daily to the existing public website (www.safewaters.com).

Boating Flow

The proposed boating flows will be provided by manual operation of gates at the Millinocket Lake Storage Dam. The proposed boating flow will be verified based on the gate opening and impoundment elevation in relation to the gate discharge curve. Flows released from the Millinocket Lake Storage Development will be posted daily to the existing public website (www.safewaters.com).

4.2.2 North Twin Development

Headpond Elevations

Headpond elevation will be measured via a pressure transducer located in the impoundment near the North Twin Dam and recorded via the Project's SCADA system. Daily headpond elevation will be posted to the existing public website (www.safewaters.com).

Minimum Flow

Flow releases from the North Twin Development will be provided by the turbines in the North Twin powerhouse and/or by opening gate(s) at the North Twin Dam to meet the proposed minimum flow requirement in the West Branch downstream of the Millinocket Development, which is based on the combined flows from Millinocket Stream and the West Branch. Flows released from the North Twin Development will be posted daily to the existing public website (www.safewaters.com).

4.2.3 Millinocket Development

Headpond Elevations

The Millinocket Development will be operated as run-of-river while maintaining the impoundment elevation within 1 foot from top of flashboards when fully installed or from the crest of the dam when the flashboards are not fully installed. Headpond elevation will be measured via a pressure

transducer located in the impoundment near Stone Dam and recorded via the Project's SCADA system.

Minimum Flow

The Millinocket Development will be operated as run-of-river such that the total outflow (from Stone Dam and Millinocket powerhouse) will approximate inflow to the Millinocket Development from the North Twin Development.

The proposed minimum flow of 200 cfs into the West Branch downstream of Stone Dam will be provided via notched flashboard sections designed to pass 200 cfs over the normal range of impoundment elevations. Although infrequent, during times when the impoundment is required to be drawn down, GLHA will consult with the MDEP to establish an alternative means of providing the required minimum flow.

Inflows to the Millinocket Development not passed at Stone Dam will be released via the turbines in the Millinocket powerhouse to Millinocket Stream, which then flows downstream into the West Branch at Shad Pond.

Flows released from the Millinocket Development (Stone Dam and Millinocket powerhouse) will be posted daily to the existing public website (www.safewaters.com).

4.2.4 Dolby Development

Headpond Elevations

The Dolby Development will be operated as run-of-river while maintaining the impoundment elevation within 1 foot from the top of flashboards when fully installed or from the crest of the dam when the flashboards are not fully installed. Headpond elevation will be measured via a pressure transducer located in the impoundment near Dolby Dam and recorded via the Project's SCADA system.

Minimum Flow

The Dolby Development will be operated as run-of-river such that the total outflow will approximate inflow. Flows released from the Dolby Development will be posted daily to the existing public website (www.safewaters.com).

4.2.5 East Millinocket Development

Headpond Elevations

The East Millinocket Development will be operated as run-of-river while maintaining the impoundment elevation within 1 foot from the top of flashboards when fully installed or from the crest of the dam when the flashboards are not fully installed. Headpond elevation will be measured via a pressure transducer located in the impoundment near East Millinocket Dam and recorded via the Project's SCADA system.

Minimum Flow

The East Millinocket Development will be operated as run-of-river such that the total outflow will approximate inflow. Flows released from the East Millinocket Development will be posted daily to the existing public website (www.safewaters.com).

5.0 Notifications and Reporting

5.1 Planned Operational Deviations

Operations, impoundment level, and minimum flow requirements may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among GLHA, Maine DEP, and the USFWS. After receiving concurrence from the MDEP and USFWS on planned deviations, GLHA will file a report with FERC as soon as possible, but no later than 14 calendar days after the onset of the planned deviation. Each report will include: (1) the reasons for the deviation and how Project operations were modified, (2) the duration and magnitude of the deviation, (3) any observed or reported environmental effects and how potential effects were evaluated, and (4) documentation of consultation with the resource agencies. For planned deviations exceeding 3 weeks, GLHA will file an application for a temporary variance from operational requirements and receive FERC approval prior to implementation.

5.2 Unplanned Operational Deviations

GLHA will notify the MDEP and USFWS of unplanned deviations from operations, impoundment level, and minimum flow requirements at the Projects. The agency notification will include a brief summary of the deviation and observed environmental or public safety effects, if any, resulting from the deviation.

For any unplanned deviation that lasts longer than 3 hours or results in visible environmental effects such as a fish kill, turbidity plume, bank erosion, or downstream flooding, GLHA will file a report with FERC as soon as possible, but no later than 14 days after each incident. The report will include: (1) the cause of the deviation, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and GLHA's response, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, (6) documentation of any observed or reported environmental effects, and (7) a description of measures implemented to prevent similar deviations in the future.

For unplanned deviations lasting 3 hours or less that do not result in visible environmental effects, GLHA will file an annual report by March 1, describing each incident that occurred during the prior January 1 through December 31 time period. The report must include for each 3 hours or less deviation: (1) the cause of the deviation, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and GLHA's response to each deviation, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, (6) a description of measures implemented to prevent similar deviations in the future.

ATTACHMENT 1

DRAFT LOW INFLOW PROTOCOL

RIPOGENUS HYDROELECTRIC PROJECT (FERC No. 2572)
PENOBSCOT MILLS HYDROELECTRIC PROJECT (FERC No. 2458)

DRAFT LOW INFLOW PROTOCOL

GREAT LAKES HYDRO AMERICA, LLC
Millinocket, Maine

July 2025

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PENOBSCOT MILLS HYDROELECTRIC PROJECT (FERC NO. 2458)
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1.0 Introduction

Great Lakes Hydro America, LLC (GLHA) is the owner, operator, and licensee of the Ripogenus Hydroelectric Project (FERC No. 2572) and the Penobscot Mills Hydroelectric Project (FERC No. 2458) (Projects) on the West Branch of the Penobscot River and Millinocket Stream in Piscataquis and Penobscot counties, Maine.

In support of the continued operation of the Projects under the new licenses to be issued by FERC, GLHA has developed this Low Inflow Protocol (LIP). The purpose of this LIP is to establish procedures for reductions in water use during periods of low inflow to the Projects.

This LIP is largely based on the consultation that GLHA and the applicable agencies have performed over the term of the 1996 licenses during low flow periods, and it will continue to provide GLHA with the flexibility necessary to balance downstream flows with water levels within the Ripogenus impoundment.

2.0 Description of Project Operations

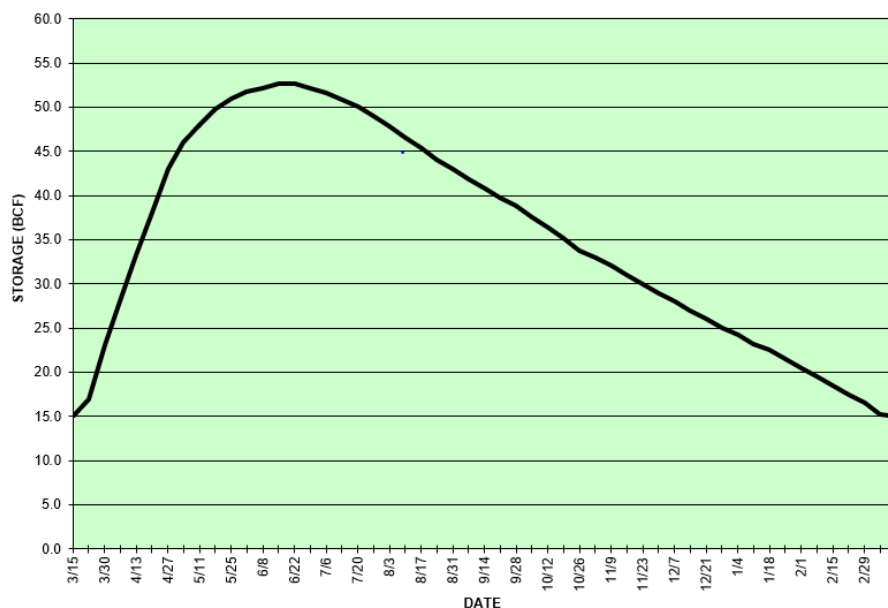
The Ripogenus Project operates as a store-and-release development with an annual seasonal drawdown that allows for management of water levels and flows downstream of the Project, including the downstream reaches of the West Branch of the Penobscot River (West Branch) and the mainstem of the Penobscot River.

The Ripogenus Project works in coordination with the upstream Storage Project (FERC No. 2634) and the downstream Penobscot Mills Project. The Storage Project consists of nine storage reservoirs that flow into the Ripogenus Project: Canada Falls Lake, Seboomook Lake, Caucomgomoc Lake, Ragged Lake, Penobscot Lake, Long Pond, Dole Pond, Loon Lake, and Harrington Lake. The Penobscot Mills Project consists of five developments (Millinocket Lake Storage, North Twin, Millinocket, Dolby, East Millinocket), with the impoundments at the Millinocket Lake Storage and North Twin developments also providing water storage capabilities.

The West Branch storage system (including storage impoundments associated with the Storage Project, Ripogenus Project, and Penobscot Mills Project) have a total usable storage capacity of 58.7 billion cubic feet (BCF), of which the Ripogenus impoundment provides 30 BCF (51% of the

total). The Ripogenus and Penobscot Mills Projects are operated as a combined system using the same system-wide rule curve that has been used since the 1970s as shown in Figure 1.

FIGURE 1
WEST BRANCH PENOBSCOT RIVER SYSTEM-WIDE RULE CURVE
 Penobscot Storage (West Branch)
 Rule Curve



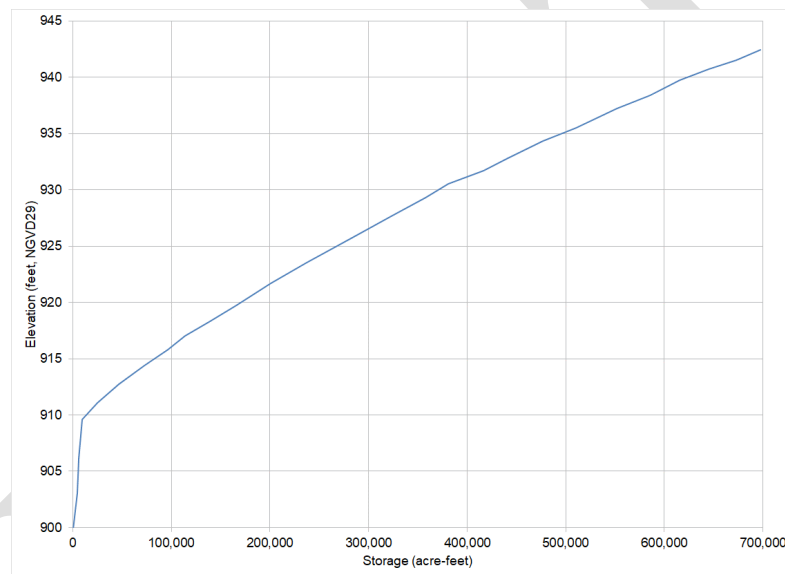
3.0 Key Facts and Assumptions

1. Importance of Human Health and Safety and the Integrity of the Electric Systems – Nothing in this LIP will limit the licensee’s ability to take any and all lawful actions necessary at the Projects to protect human health and safety, to protect its equipment from damage, and to ensure the stability of the electric grid. It is recognized that the licensee may provide this protection without prior consultation or notification.
2. Revising the LIP – During the term of the new licenses, the licensee and LIP stakeholders will periodically review and recommend updates to the LIP to ensure continuous improvement of the LIP and its implementation. These evaluations and modifications will be considered at least once every ten (10) years during the term of the new licenses. Any modifications to the LIP that result from these consultations will be filed with FERC for approval. If any modifications of the LIP require amendment of the new licenses, the licensee will: (i) provide notice to all LIP stakeholders advising them of the new license amendment and the licensee’s intent to file it with FERC; (ii) submit a modification request

to the Maine Department of Environmental Protection (MDEP) for formal review and approval if required; and (iii) file a license amendment request for FERC approval if required.

3. Ripogenus Storage Volumes - The following figure provides storage volumes at various elevations in the Ripogenus impoundment. These data are for planning purposes and are not of physical survey quality.

FIGURE 2
RIPOGENUS IMPOUNDMENT STORAGE VOLUME CURVE



4.0 Inflow Forecasting

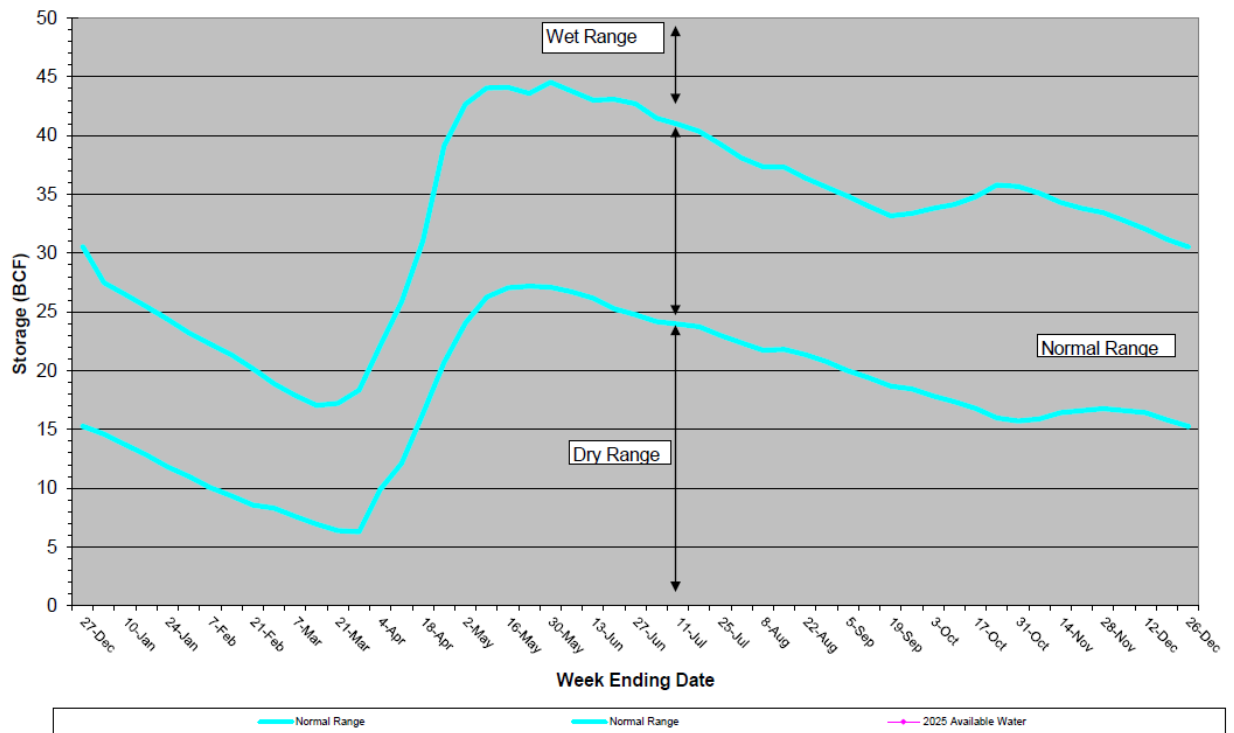
GLHA monitors inflows to the Projects using a variety of processes and tools, including the following:

- Short and long-range weather forecasts – GLHA monitors short and long-range weather forecasts from the National Oceanic and Atmospheric Administration (NOAA) on a daily basis. The information is used to estimate precipitation and evaporation in relation to impoundment elevations and available storage in the system.
- U.S. Drought Monitor status – GLHA monitors the drought status in the Project area via the U.S. Drought Monitor website (<https://droughtmonitor.unl.edu/CurrentMap.aspx>).

- Maine River Flow Advisory Commission¹ - GLHA participates in the annual winter meeting to review ice and snowpack conditions, streamflow levels, and flood risks across the state. The commission also convenes a drought task force to help with planning during drought conditions, and GLHA participates in those discussions as well.
- GLHA conducts periodic snowpack surveys to prepare for spring runoff into the Project impoundments and waterways
- Estimated cumulative inflows from the upstream Storage Project
- Ripogenus impoundment storage – On a weekly basis, GLHA tracks the available storage in Ripogenus impoundment in relation to the total system storage rule curve. Additionally, GLHA tracks the available storage in Ripogenus impoundment in relation to the Ripogenus storage curve shown below as Figure 3, to determine wet, normal, or dry hydrologic conditions at the Ripogenus Project.
- Total system storage rule curve status –On a weekly basis, GLHA tracks total system storage in relation to the rule curve shown above as Figure 1.

¹ The Maine River Flow Advisory Commission consists of members from the U.S. Geological Survey, Maine Geological Survey, Maine Department of Environmental Protection, National Weather Service in Gray and Caribou, U.S. Coast Guard, University of Maine, Maine Emergency Management Agency, Brookfield Renewable U.S., the Maine Center for Disease Control Drinking Water Program, and the Department of Agriculture, Conservation & Forestry/Floodplain Management Program.

FIGURE 3
RIPOGENUS IMPOUNDMENT AVAILABLE WATER CURVE INDICATING
WET, NORMAL, AND DRY RANGES



5.0 Modifications of Required Flow

Based on the drought status, inflow forecasting, and available system storage using the methods described above, minimum flows and/or recreational boating flows may be modified if required by hydrologic conditions beyond the control of the licensee and upon mutual agreement between the licensee, USFWS, MDEP, and MDIFW. If the flow is so modified, the licensee shall notify FERC as soon as possible, but no later than 10 days after each such incident, together with the record of agency consultation.