Upper Raquette River Project (FERC No. 2084)

Carry Falls Project (FERC No. 2060)

Recertification Application to the Low Impact Hydropower Institute

LIHI # 14A

Prepared by:
ERIE BOULEVARD HYDROPOWER, L.P.
Potsdam, New York

June 14, 2022

TABLE OF CONTENTS

INTRODUCTION

Erie Boulevard Hydropower, L.P. ("Erie" or "Licensee"), a wholly owned subsidiary of Brookfield Renewable, is providing this application to the Low Impact Hydropower Institute (LIHI) for recertification of the Carry Falls Project and Upper Raquette River Project (LIHI #14), subsequent to a previous LIHI certification that expires July 9, 2022. The Carry Fall Project is located on the Raquette River in the Town of Colton, St. Lawrence County, New York. The Carry Falls Project is a seasonal storage reservoir with no associated generating capacity. The Upper Raquette River Project is located along the Raquette River in towns of Colton and Parishville, St. Lawrence County, New York and consists of five hydroelectric developments: Stark, Blake, Rainbow, Five Falls, and South Colton. These developments use releases from the Carry Falls Project. The Carry Falls Project and Upper Raquette River Project are licensed with the Federal Energy Regulatory Commission (FERC or Commission) as FERC No. 2060 and 2084, respectively.

Carry Falls Development

The Carry Falls dam is 826 feet long with a 568-foot-long, 76-foot-high (maximum) concrete gravity spillway and a 258-foot-long, 63-foot-high (maximum) concrete gated non-overflow spillway. The non-overflow section includes two 14.5-foot by 27-foot Tainter gates, two 10 by 10-foot low-level sluice gates, and an intake structure with two 15 by 15-foot openings. There are five earth dikes totaling 2,500 feet in length with heights varying from 12 to 31 feet. The dam creates a 7 mile long, 3,000-acre reservoir. There is no hydroelectric production at this development.

Stark Development

The Stark dam is a 35-foot-high concrete gravity structure with a 294-foot-long concrete ogee spillway section and a control gate section flanked by earthen dikes. There are a total of seven earthen dikes totaling approximately 3,700 ft, an intake, penstock, and a powerhouse containing a single 23.87 MW generating unit. The dam impounds a 1.5 mile long, 641-acre reservoir.

Blake Development

The Blake dam is a 60-foot-high (maximum) concrete gravity structure with a 592-foot-long concrete ogee overflow section. Other project works include four earthen dikes totaling approximately 1,586 ft, an intake, a penstock, and a powerhouse containing a single 13.91 MW generating unit. The dam impounds a 5.5 mile long, 660-acre reservoir.

Rainbow Development

The Rainbow dam is an 81.5-foot-high (maximum) concrete gravity structure with a 751-foot-long concrete ogee overflow section flanked by a 1,600-foot-long earthen dike on the North and a 100-foot-long earthen dike on the South. Additional project works include an intake, a penstock, and a powerhouse containing a single 22.83 MW generating unit. The dam impounds a 3.5 mile long, 710-acre reservoir.

Five Falls Development

The Five Falls dam is a 55-foot-high (maximum) concrete gravity structure with a 500-foot-long concrete ogee overflow section flanked at each end by an earthen dike. The South dike is approximately 290 feet in length and the North dike is approximately 685 feet in length. The facility has an intake, 1,200-foot-long penstock, and a powerhouse containing a single 22.83 MW generating unit. The dam impounds a 1.0 mile long, 120-acre reservoir.

South Colton Development

The South Colton dam is a 42-foot-high (maximum) concrete gravity structure with a 592-foot-long concrete ogee overflow section and earthen abutments. Other project works include an intake, a 1,300-foot-long penstock, and a powerhouse containing a single 18.95 MW generating unit. The dam impounds a 1.5 mile long, 225-acre reservoir.

There have been no material changes in the facility design or operation since the most recent LIHI review that was concluded on July 9, 2014. There also have been no material changes in the environmental conditions in the project vicinity since that most recent LIHI review. The only material change that has occurred since 2014 is the issuance of the 2nd Edition Low Impact Certification Handbook.

The information included in this recertification application provides an update to support a new LIHI certification.

PART I. FACILITY DESCRIPTION

The key features of the Upper Raquette River Project and Carry Falls Project are described in Table I-1 and Table I-2. A description of the project can be found on the LIHI website at https://lowimpacthydro.org/lihi-certificate-14a-upper-raquette-river-project-new-york/

Table I-2. Facility Description Information for the Carry Falls Project.

Item	***Information Requested***	***Response (include references to further details)***
Name of the Facility	Facility name (use FERC project name or other legal name)	Carry Falls Project (FERC No. 2060)
Reason for applying for LIHI Certification	1. To participate in state RPS program and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	4. To satisfy the facility's own corporate sustainability goals
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	N/A
Location	River name (USGS proper name)	Raquette River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Raquette River Basin (04150305)
	Nearest town(s), county(ies), and state(s) to dam	St. Lawrence County, New York
	River mile of dam above mouth	RM 68
	Geographic latitude and longitude of dam	44.4352 N, -74.7473 W

Item	*Information Requested*	*Response (include references to further details)*
Facility Owner	Application contact names	Mr. Danny Maguire Compliance Manager Brookfield Renewable 184 Elm Street Potsdam, NY 13676 See Part V of the LIHI certification application for more information
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Same as above *Ownership has not changed since last certification*
	FERC licensee company name (if different from owner)	Erie Boulevard Hydropower, L.P.
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Project No. 2060 The FERC license was issued on February 13, 2002. The license expires on December 31, 2033
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", “non-jurisdictional”)	Major Project (>5 MW)
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	The Section 401 Water Quality Certificate was issued by the New York State Department of Environmental (NYSDEC) on June 11, 1998 and adopted into the FERC license. The NYSDEC DEC I.D. is 6-4099-00021/00004.

Item	***Information Requested***	***Response (include references to further details)***
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories[1]	Order Issuing New License, February 13, 2002 https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20020214-0686&optimized=false Environmental Assessment, April 16, 2001 https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0011B011-66E2-5005-8110-C31FAFC91712 Filing of Settlement Offer, April 22, 1998 https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0009E5DA-66E2-5005-8110-C31FAFC91712 Water Quality Certificate, June 11, 1998 (included in license application): https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0011FFB6-66E2-5005-8110-C31FAFC91712
Powerhouse	Date of initial operation (past or future for pre-operational applications)	January 1953
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	0 MW (storage reservoir) *Installed capacities have not changed since last certification*
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	0 MWh
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Seasonal storage *Modes-of-operations have not changed since last certification.*

[1] For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land management, grants of right-of-way, U.S. Army Corps of Engineers permits, and other regulatory documents. If extensive, the list of hyperlinks can be provided separately in the application.

Item	***Information Requested***	***Response (include references to further details)***
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	N/A
	Trashrack clear spacing (inches) for each trashrack	N/A
	Approach water velocity (ft/s) at each intake if known	N/A
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	N/A
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	*There have been no operational changes since the last certification was issued.*
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	There are no planned upgrades at this time.
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	**1952:** Original construction completed **1962**: Dike D repair **1984:** Construction of toe drainage system and filter blanket **1995:** Thoroseal concrete surface of radial gate piers **2000:** Radial gate piers replaced with new concrete and reinforcing **1997:** Joints in drainage tile and geotextile repaired, clay pipe replaced with plastic pipe, two junction boxes installed, two weir boxes installed on perimeter drains

Item	***Information Requested***	***Response (include references to further details)***
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	A 826-foot-long dam consisting of (a) a 568-foot-long by 76-foot-high concrete gravity spillway with a crest elevation of 1,386.0 feet msl (b) a 258-foot-long by 63-foot-high concrete gated non-overflow spillway with two 14.5-foot by 27-foot Tainter gates, two 10-foot-square low-level sluice gates, and an intake structure with two 15-foot-square openings for future power installation (c) five earth dikes totaling approximately 2,500 feet in length, with lengths varying from 320 feet to 1,015 feet, maximum heights varying from 12 feet to 31 feet, and each with a crest width of 12 feet at elevation 1,392.0 feet msl
	Spillway maximum hydraulic capacity	31,000 cfs at elevation 1,390 feet
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	N/A
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Storage for Raquette River hydroelectric projects
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	N/A
	Source water	N/A
	Receiving water and location of discharge	N/A
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	Maximum: 1,385 ft. Minimum: 1,355 ft. *Authorized impoundment elevations have not changed since last certification.*
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	Target elevations can be referenced in the Settlement Agreement as part of the Guide Curve. May operate above and/or below the guide curve with the exception that the ultimate low level of any drawdown as part of normal operation will be limited to elevation 1,355 feet. *Normal operating elevations have not changed since last certification.*

Item	*Information Requested*	*Response (include references to further details)*
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	114,780-acre-feet and 3,000 surface acres at 1,385.0 ft msl *Storage volumes have not changed since last certification.*
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	104,463 acre-feet and 3,000 acres (1,355.0 to 1,385.0 ft msl) *Storage volumes have not changed since last certification.*
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	The Carry Falls Reservoir follows the guide curve described in the Settlement.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	**Piercefield** (FERC No. 7387) RM 88.5, owned by Erie Boulevard Hydropower, LP, a subsidiary of Brookfield Renewable. Downstream fish passage present.

Item	*Information Requested*	*Response (include references to further details)*
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	**Stark*** (Upper Raquette River FERC No.2084) RM 66 **Blake*** (Upper Raquette River FERC No.2084) RM 62 **Rainbow*** (Upper Raquette River FERC No.2084) RM 56 **Five Falls*** (Upper Raquette River FERC No.2084) RM 54 **South Colton*** (Upper Raquette River FERC No.2084) RM 52 **Higley*** (Middle Raquette River FERC No. 2320) RM 47.0 **Colton*** (Middle Raquette River FERC No. 2320) RM 45.0 **Hannawa*** (Middle Raquette River FERC No. 2320) RM 39.0 **Sugar Island*** (Middle Raquette River FERC No. 2320) RM 38.0 **Potsdam** (2869 FERC Exemption) RM 35.0 owned by the Village of Potsdam **Sissonville** (FERC No. 9260) RM 33.0 owned by Sissionville Limited Partnership **Hewittville*** (2498 FERC Exemption) RM 32.0 **Unionville*** (2499 FERC Exemption) RM 31.0 **Norwood*** (Lower Raquette River FERC No. 2330) RM 28.0 **Yaleville*** (FERC No. 9222) RM 25.5 **East Norfolk*** (Lower Raquette River FERC No. 2330) RM 23.5 **Norfolk*** (Lower Raquette River FERC No. 2330) RM 22.5 **Raymondville*** (Lower Raquette River FERC No. 2330) RM 20.0 *Owned and operated by Erie Boulevard Hydropower, LP, a subsidiary of Brookfield Renewable Upstream passage for anadromous or catadromous fish is not a management objective because there are no anadromous fish species in the reach of the Raquette. There is no upstream passage at the downstream dams.

Item	*Information Requested*	*Response (include references to further details)*
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	Facilities on the Raquette River are managed as a composite system. Total volume released by Carry Falls reservoir over a given 24-hour period should not exceed the total volume which can be used by the Colton Development (Middle Raquette River Project) over a 24-hour period.
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	Land: Underdetermined; limited to lands encompassing project structures Water: approximately 3,000 acres
Hydrologic Setting	Average annual flow at the dam, and period of record used	The average annual flow recorded at USGS Gage 04267500 Raquette River at South Colton, NY adjusted by drainage area upstream to the location of the Carry Falls dam between 2010 and 2021 is 1,820 cfs
	Average monthly flows and period of record used	The average monthly flow recorded at USGS Gage 04267500 Raquette River at South Colton, NY adjusted by drainage area upstream to the location of the Carry Falls dam between 2010 and 2021 is - January: 2,000 cfs - February: 1,690 cfs - March: 2,100 cfs - April: 2.990 cfs - May: 3,260 cfs - June: 2,100 cfs - July: 1,430 cfs - August: 1,120 cfs - September: 1,050 cfs - October: 1,350 cfs - November: 1,490 cfs - December: 1,410 cfs
	Location and name of closest stream gaging stations above and below the facility	Upstream: Piercefield Gage No.04266500 at RM 88.5 Downstream: South Colton Gage No. 04267500 RM 52 (Daily mean flow data for the Carry Falls Project was estimated by a linear proration of data from USGS Gage No. 04267500 Raquette River at South Colton, NY)

Item	*Information Requested*	*Response (include references to further details)*
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	877 mi^2
	Other facility specific hydrologic information	N/A
Designated Zones of Effect	Numbers and names of each zone of effect (e.g., "Zone 1: Impoundment")	Zone 1: Impoundment (Carry Falls)
	Upstream and downstream locations by river miles	Zone 1: RM 68 to RM 76

Table I-2. Facility Description Information for the Upper Raquette River Project.

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Upper Raquette River Project (FERC No. 2084) includes the following facilities from upstream to downstream: Stark, Blake, Rainbow, Five Falls, and South Colton.
Reason for applying for LIHI Certification	1. To participate in state RPS program and specify the state and the total MW/MWh associated with that participation (value and % of facility total Mw/MWh). 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	4. To satisfy the facility's own corporate sustainability goals
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	N/A
Location	River name (USGS proper name)	Raquette River
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Raquette River Basin (04150305)
	Nearest town(s), county(ies), and state(s) to dam	St. Lawrence County, New York
	River mile of dam above mouth	Stark: RM 66 Blake: RM 62 Rainbow: RM 56 Five Falls: RM 54 South Colton: RM 52
	Geographic latitude and longitude of dam	Stark: 44.45112, -74.76587 Blake: 44.50200, -74.74610 Rainbow: 44.51667, -74.82045 Five Falls: 44.52994, -74.84340 South Colton: 44.51744, -74.88137

Item	*Information Requested*	*Response (include references to further details)*
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Mr. Danny Maguire Compliance Manager Brookfield Renewable 184 Elm Street Potsdam, NY 13676 See Part V of the LIHI certification application for more information
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Same as above *Ownership has not changed since last certification*
	FERC licensee company name (if different from owner)	Erie Boulevard Hydropower, L.P.
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Project No. 2084 The FERC license was issued on February 13, 2002. The license expires on December 31, 2033.
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", “non-jurisdictional”)	Major Project (>5 MW)
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	The Section 401 Water Quality Certificate was issued by the New York State Department of Environmental (NYSDEC) on June 11, 1998 and adopted into the FERC license. The NYSDEC DEC I.D. is 6-4099-00027/00001.

Item	*Information Requested*	*Response (include references to further details)*
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories[2]	Order Issuing New License February 13, 2002 https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20020214-0687&optimized=false Environmental Assessment, April 16, 2001 https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0011B011-66E2-5005-8110-C31FAFC91712 Filing of Settlement Offer, April 22, 1998 https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0009E5DA-66E2-5005-8110-C31FAFC91712 Water Quality Certificate, June 11, 1998 (included in license application): https://elibrary.ferc.gov/eLibrary/filedownload?fileid=0011FFB6-66E2-5005-8110-C31FAFC91712
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Stark: September 1957 Blake: March 1957 Rainbow: April 1956 Five Falls: April 1955 South Colton: July 1954
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	Stark: 23, 872 kW Blake: 13,913 kW Rainbow: 22,828 kW Five Falls: 22,828 kW South Colton: 18,948 kW Total: 102,389 kW *Installed capacities have not changed since last certification*

[2] For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land management, grants of right-of-way, U.S. Army Corps of Engineers permits, and other regulatory documents. If extensive, the list of hyperlinks can be provided separately in the application.

Item	*Information Requested*	*Response (include references to further details)*
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	Stark: 99,639 MW h Blake: 62,200 MWh Rainbow: 104,052 MWh Five Falls: 101,607 MWh South Colton: 85,935 MWh Total: 453,433 MWh *Reported 10/1/2016 through 9/30/2021
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	All developments operate in a store and release peaking mode of operation. Two varieties of the store and release peaking mode of operation are utilized when releases from the Carry Falls Project do not exceed the hydraulic capacity of the five developments: (1) store and release peaking mode or (2) store and release load following mode. When releases from the Carry Falls Project exceed hydraulic capacity of the five developments, all developments operate in run-of-river mode. *Modes-of-operations have not changed since last certification.*

Item	*Information Requested*	*Response (include references to further details)*
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	**Stark:** Type: One vertical Francis turbine Description: Design capacity of 32,000 hp at a design head of 104.2 feet and a speed of 120 rpm Minimum: 21.5 MW at 2,700 cfs Maximum: 23.87 MW at 3,010 cfs **Blake:** Type: One vertical Francis turbine Description: Design capacity of 18,650 hp at a design head of 67.1 feet and a speed of 112.5 rpm Efficient: 13.5 MW at 2,700 cfs Maximum: 13.9 MW at 2,980 cfs **Rainbow:** Type: One vertical Francis turbine Description: Design capacity at 30,600 hp at a design head of 100.7 feet and a speed of 120.0 rpm Efficient: 20.5 MW at 2,700cfs Maximum: 22.83 MW at 3,200 cfs **Five Falls:** Type: One vertical Francis turbine Description: Design capacity at 30,600 hp at a design head of 100.8 feet and a speed of 120.0 rpm Efficient: 21.5 MW at 2,700 cfs Maximum: 22.83 MW at 3,260 cfs **South Colton:** Type: One vertical Francis turbine Description: Design capacity at 25,400 hp at a design head of 82.7 feet and a speed of 120.0 rpm Efficient: 15 MW at 2,700 cfs Maximum: 18.95 MW at 3,500 cfs
	Trashrack clear spacing (inches) for each trashrack	Stark: 1 inch clear spacing Blake: 1 inch clear spacing Rainbow: 1 inch clear spacing Five Falls: 1 inch clear spacing South Colton: 1 inch clear spacing
	Approach water velocity (ft/s) at each intake if known	Maximum velocity at Trashracks Stark: 2.7 ft/s Blake: 2.6 ft/s Rainbow: 2.6 ft/s Five Falls: 2.9 ft/s South Colton: 3.1 ft/s

Item	*Information Requested*	*Response (include references to further details)*
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	**Stark:** 2017: Additional piezometers installed at dike for monitoring 2018: Embankment repair
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	*There have been no operational changes since the last certification was issued.*
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	There are no planned upgrades at this time.
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	**Stark:** 1957: put into operation 1958: installation of underdrain system 2017: additional piezometers installed 2018: embankment repair **Blake:** 1955-1957: original construction 2002: slide gate installed at ice sluice **Rainbow:** 1954-1956: original construction 1990: rock anchors installed in spillway section **Five Falls:** 1955: put into operation 1990: rock anchors installed in spillway section, 1.5-foot-high wood timber parapet installed on dikes **South Colton:** 1952-1954: original construction 1990: rock anchors installed in spillway section, 1.5-foot-high wood timber parapet wall installed on dikes

	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	**Stark:** A 35-foot-high concrete gravity dam with a 294-foot-long and 35-foot-high concrete overflow section with a crest elevation of 1,355.0 feet above mean sea level (msl) and a 94-foot-long control gate section consisting of two 27-foot long and 15-foot high radial Tainter gates with a crest elevation of 1,340.8 feet msl, a low-level sluice gate section consisting of one motor controlled 12-foot square slide gate, and a 6-foot-wide stoplog section. Additionally, there are seven earthen saddle dikes with a crest elevation of 1,362.0 feet, totaling approximately 3,700 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively. **Blake:** A 75-foot-high concrete gravity dam with a 592-foot-long by 80-foot-high concrete overflow section with a crest elevation of 1,250.5 feet msl and a 140-foot-long non-overflow section with a crest elevation of 1,266.0 feet. Additionally, there are three earthen dikes with a crest elevation of 1,259.5 feet, totaling approximately 1,840 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively **Rainbow:** A 2,677-foot-long by 75-foot-high concrete gravity-type dam with a 751-foot-long by 81.5-foot-high concrete overflow section with a crest elevation of 1,181.5 feet msl and two non-overflow sections totaling 120 feet and 176 feet in length, respectively. Additionally, there are two earthen saddle dikes with a crest elevation of 1,190.0 feet, totaling approximately 2,570 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively. **Five Falls:** A 1,750-foot-long by 50-foot-high concrete gravity dam flanked at each end by earthen dikes totaling approximately 1,190 feet in length, each 16 feet wide with upstream and

Item	*Information Requested*	*Response (include references to further details)*
		downstream slopes of 3:1 and 2.5:1, respectively. Additionally, there is a 500-foot-long concrete gravity ogee overflow spillway with a crest elevation of 1,077.0 feet. Finally, there is a 6-foot-wide stoplog section with a sill elevation of 1,072.0 feet. **South Colton:** A 970-foot- long, 45-foot-high concrete gravity-type dam and earthen abutments. Additionally, there is a 592-foot-long, 42-foot-high concrete gravity ogee spillway with a crest elevation of 973.5 feet msl. Finally, there is a 6-foot-wide stoplog section with a sill elevation of 968.0 feet.
	Spillway maximum hydraulic capacity	**Stark:** 21,300 cfs at elevation 1,360.5 feet **Blake:** 50,000 cfs at elevation 1,259.5 feet **Rainbow:** 62,800 cfs at elevation 1,190.5 feet **Five Falls:** 45,400 cfs at elevation 1087.9feet **South Colton:** 50,300 cfs at elevation 983.8 feet
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	**Stark:** A 651-foot-long, 18-foot-diameter welded steel pipeline. **Blake:** A 731-foot long, 18.0-foot diameter welded steel pipeline. **Rainbow:** A 645-foot long, 18.0-foot diameter welded steel pipeline. **Five Falls:** A 1,399-foot long, 18.0-foot-wide diameter welded steel pipeline with a restricted orifice surge tank. **South Colton:** A 1,220-foot long, 18.0-foot diameter welded steel pipeline with a restricted orifice surge tank.
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	N/A
	Source water	N/A
	Receiving water and location of discharge	N/A

Item	*Information Requested*	*Response (include references to further details)*
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	**Stark:** Minimum: 1353.7 ft (impoundment fluctuation may be greater than 1 foot to allow for drawdowns of the Carry Falls Reservoir below elevation 1355) Maximum: 1,34.7 ft **Blake:** Minimum:1249.2 ft Maximum: 1,250.2 ft. **Rainbow:** Minimum: 1180.2 ft Maximum: 1,181.2 ft. **Five Falls:** Minimum: 1074.7 ft Maximum: 1,076.7 ft. **South Colton:** Minimum: 971.2 ft Maximum: 973.2 ft. *Authorized impoundment elevations have not changed since last certification.*
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	**Stark:** 1.0 foot (1354.7 to 1353.7) **Blake:** 1.0 foot (1250.2 to 1249.2) **Rainbow:** 1.0 foot (1181.2 to 1180.2) **Five Falls:** 2.0 feet (1076.7 to 1074.7) **South Colton:** 2.0 feet (973.2 to 971.2) *Normal operating elevations have not changed since last certification.*
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	**Stark:** 16,861 acre-feet and 704 acres **Blake:** 37,800 acre-feet and 703 acres **Rainbow:** 25,800 acre-feet and 717 acres **Five Falls:** 3,090 acre-feet and 145 acres **South Colton:** 4,500 acre-feet and 230 acres *Storage volumes have not changed since last certification.*

Item	*Information Requested*	*Response (include references to further details)*
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	**Stark:** 16,861 acre-feet and 704 acres **Blake:** 32,900 acre-feet and 703 acres **Rainbow:** 10, 462 acre-feet and 717 acres **Five Falls:** 3,090 acre-feet and 145 acres **South Colton:** 3,601 acre-feet at 230 acres *Storage volumes have not changed since last certification.*
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	The Upper Raquette River Project operates in several different varieties of store-and-release modes utilizing releases from Carry Falls Reservoir. The seasonal component encountered most often is that of a release to accommodate spawning between April and June.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	**Carry Falls Reservoir** (FERC No. 2060) RM 68, owned by Erie Boulevard Hydropower, LP, a subsidiary of Brookfield Renewable. **Piercefield** (FERC No. 7387) RM 88.5, owned by Erie Boulevard Hydropower, LP, a subsidiary of Brookfield Renewable. Downstream fish passage present.

Item	*Information Requested*	*Response (include references to further details)*
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	**Higley*** (Middle Raquette River FERC No. 2320) RM 47.0 **Colton*** (Middle Raquette River FERC No. 2320) RM 45.0 **Hannawa*** (Middle Raquette River FERC No. 2320) RM 39.0 **Sugar Island*** (Middle Raquette River FERC No. 2320) RM 38.0 **Potsdam** (2869 FERC Exemption) RM 35.0 owned by the Village of Potsdam **Sissionville** (FERC No. 9260) RM 33.0 owned by Sissionville Limited Partnership **Hewittville*** (2498 FERC Exemption) RM 32.0 **Unionville*** (2499 FERC Exemption) RM 31.0 **Norwood*** (Lower Raquette River FERC No. 2330) RM 28.0 **Yaleville*** (FERC No. 9222) RM 25.5 **East Norfolk*** (Lower Raquette River FERC No. 2330) RM 23.5 **Norfolk*** (Lower Raquette River FERC No. 2330) RM 22.5 **Raymondville*** (Lower Raquette River FERC No. 2330) RM 20.0 *Owned and operated by Erie Boulevard Hydropower, LP, a subsidiary of Brookfield Renewable Upstream passage for anadromous or catadromous fish is not a management objective because there are no anadromous fish species in the reach of the Raquette.
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	Facilities on the Raquette River are managed as a composite system.

Item	*Information Requested*	*Response (include references to further details)*
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	Land: Underdetermined; limited to lands encompassing project structures Water: • Stark: approximately 585 acres • Blake: approximately 660 acres • Rainbow: approximately 710 acres • Five Falls: approximately 120 acres • South Colton: approximately 225 acres
Hydrologic Setting	Average annual flow at the dam, and period of record used	The average annual flow recorded at USGS Gage 04267500 Raquette River at South Colton, NY (downstream of Upper Raquette Project, South Colton Development) between 2010 and 2021 is 1,960 cfs
	Average monthly flows and period of record used	The average monthly flow recorded at USGS Gage 04267500 Raquette River at South Colton, NY between 2010 and 2021 is - January: 2,150 cfs - February: 1,820 cfs - March: 2,260 cfs - April: 3,210 cfs - May: 3,500 cfs - June: 2,260 cfs - July: 1,540 cfs - August: 1,200 cfs - September: 1,120 cfs - October: 1,460 cfs - November: 1,6000 cfs - December: 1,520 cfs
	Location and name of closest stream gaging stations above and below the facility	Upstream: Piercefield Gage No.04266500 at RM 88.5 Downstream: South Colton Gage No. 04267500 RM 52
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	**Stark:** 877 mi^2 **Blake:** 908 mi^2 **Rainbow:** 929 mi^2 **Five Falls:** 932 mi^2 **South Colton:** 942 mi^2
	Other facility specific hydrologic information	N/A

Item	*Information Requested*	*Response (include references to further details)*
	Numbers and names of each zone of effect (e.g., "Zone 1: Impoundment")	Zone 2: Impoundment (Stark) Zone 3: Bypassed Reach (Stark) Zone 4: Tailrace (Stark) Zone 5: Impoundment (Blake) Zone 6: Bypassed Reach (Blake) Zone 7: Tailrace (Blake) Zone 8: Impoundment (Rainbow) Zone 9: Bypassed Reach (Rainbow) Zone 10: Tailrace (Rainbow) Zone 11: Impoundment (Five Falls) Zone 12: Bypassed Reach (Five Falls) Zone 13: Tailrace (Five Falls) Zone 14: Impoundment (South Colton) Zone 15: Bypassed Reach (South Colton) Zone 16: Tailrace (South Colton)
	River mile of upstream and downstream limits of each zone of effect (e.g., "Zone 1: RM 6.3 - 5.1")	Zone 2: 68.0 -66.0 Zone 3: 66.0 – 64.6 Zone 4: 65.0 - 64.6 Zone 5: 64.6 – 62.0 Zone 6: 62.0 – 61.1 Zone 7: 61.1- 60.8 Zone 8: 60.8 – 56.0 Zone 9: 56.0 – 55.8 Zone 10: 55.8 - 55.6 Zone 11: 55.6 – 54.0 Zone 12: 54.0 – 53.6 Zone 13: 53.8 – 53.6 Zone 14: 53.6 – 52.0 Zone 15: 52.0 – 51.6 Zone 16: 51.6 – 50.6

PART II. STANDARD MATRICES

The Carry Falls and Upper Raquette River Projects have a total of 16 zones of effect that are defined as:

(1) Zone one, which extends from the head of the Carry Falls impoundment to the Carry Falls dam
(2) Zone two, which extends from the head of Stark Reservoir, downstream to the Stark intake
(3) Zone three, which extends from the Stark dam, downstream to the Blake impoundment
(4) Zone four, which extends from the tailrace of the powerhouse, downstream to the Blake Impoundment
(5) Zone five, which extends from the head of the Blake impoundment at the Stark tailrace and bypassed reach, downstream to the Blake intake
(6) Zone six, which extends from the Blake dam, downstream to the tailrace and the Rainbow impoundment
(7) Zone seven, which extends from the tailrace of the powerhouse, downstream to the Rainbow impoundment
(8) Zone eight, which extends from the head of the Rainbow impoundment at the Blake tailrace and bypassed reach, downstream to the Rainbow intake and spillway
(9) Zone nine, which extends from the Rainbow dam, downstream to the tailrace and the Five Falls impoundment
(10) Zone ten, which extends from the tailrace of the powerhouse, downstream to the Rainbow impoundment and the bypassed reach
(11) Zone eleven, which extends from the head of the Five Falls impoundment at the Rainbow tailrace and bypassed reach, to the intake and spillway
(12) Zone twelve, which extends from the Five Falls dam, downstream to the tailrace and the South Colton impoundment
(13) Zone thirteen, which extends from the tailrace of the powerhouse, downstream to the South Colton impoundment and the bypassed reach
(14) Zone fourteen, which extends from the head of the South Colton impoundment at the Five Falls bypassed reach and tailrace, to the South Colton intake and spillway
(15) Zone fifteen, which extends from the South Colton dam, downstream to the tailrace and the Higley Reservoir impoundment
(16) Zone sixteen, which extends from the tailrace of the powerhouse, downstream to the bypassed reach and the Higley Reservoir impoundment

The standards selected to satisfy the LIHI certification criteria in each of these zones are identified in the following table.

Table II-1. LIHI Standards Selected for Carry Falls Project and Upper Raquette River Project

		Criterion							
Zone No., Zone Name, and Standard Selected (including PLUS if selected)	River Mile at upper and lower extent of Zone	A Ecological Flows	B Water Quality	C Upstream Fish Passage	D Downstream Fish Passage	E Shoreline and Watershed Protection	F Threatened and Endangered Species	G Cultural and Historic Resources	H Recreational Resources
Zone 1: Impoundment (Carry Falls)	76.0	A-2	B-2	C-1	D-1	E-2	F-3	G-1	H-2
Zone 2: Impoundment (Stark)	68.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 3: Bypassed Reach (Stark)	66.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 4: Tailrace (Stark)	65.0	A-2	B-2	C-1	D-1	E-2	F-3	G-2	H-2
Zone 5: Impoundment (Blake)	64.6	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 6: Bypassed Reach (Blake)	62.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 7: Tailrace (Blake)	61.1	A-2	B-2	C-1	D-1	E-2	F-3	G-2	H-2
Zone 8: Impoundment (Rainbow)	60.8	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 9: Bypassed Reach (Rainbow)	56.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 10: Tailrace (Rainbow)	55.8	A-2	B-2	C-1	D-1	E-2	F-3	G-2	H-2
Zone 11: Impoundment (Five Falls)	55.6	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 12: Bypassed Reach (Five Falls)	54.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 13: Tailrace (Five Falls)	53.8	A-2	B-2	C-1	D-1	E-2	F-3	G-2	H-2
Zone 14: Impoundment (South Colton)	53.6	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 15: Bypassed Reach (South Colton)	52.0	A-2	B-2	C-1	D-2	E-2	F-3	G-2	H-2
Zone 16: Tailrace (South Colton)	51.6	A-2	B-2	C-1	D-1	E-2	F-3	G-2	H-2

PART III. SUPPORTING INFORMATION

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria (see Part II for selections).

CARRY FALLS PROJECT

Information Required to Support Ecological Flows Standards.

III.A.1 Ecological Flows: Zone 1

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 1 is the Carry Falls Project impoundment. As required by the Settlement Offer, the Carry Falls Project operates according to the new guide curve, as described in the Settlement Agreement, submitted March 13, 1998. The Carry Falls guide curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Raquette River basin. The Settlement Agreement also requires tiered baseflow to the Raymondville Development, the most downstream hydroelectric facility on the Raquette River, and an instream flow schedule while maintaining target water surface level elevations in the Carry Falls Reservoir and the Upper Raquette River impoundments.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

According to the Settlement Agreement, an Impoundment Fluctuation Study for the Upper Raquette River and Carry Falls Reservoir was conducted in the summers of 1995 and 1996 to delineate the areas and types of habitats within the normal operational fluctuation zone of each impoundment. This study involved habitat mapping of the near shore zone using field reconnaissance observations of habitat characteristics and photo and video documentation. Normal impoundment fluctuations of the Carry Falls Project are governed by the new guide curve,

allowing for late winter/spring drawdowns from elevation 1385 feet to elevation 1355 feet and fall drawdowns to elevation 1355 feet. The reduced impoundment fluctuations will lead to a large percentage of the reservoir substrate being wetted 100% of the time, ultimately improving wetlands and aquatic habitats. The AGC system assures that Project operations conform to all environmental requirements, including impoundment fluctuation limits and the new guide curve. Daily elevations of the reservoir are monitored, and any exceptions to the drawdown limit of 1355 feet are recorded. The Carry Falls Project is a storage reservoir and does not have a bypassed reach, therefore it has no instream, flow requirements.

Minimum base flows to the Raymondville development provide stable flows that ensure that most of the riffle habitat is adequately watered at all times. The baseflow downstream of the Raymondville Development during "wet" and "normal" conditions is 560 cfs. During "dry" conditions, the baseflow will be reduced to 290 cfs. During "drought" conditions, the baseflow is equal to the daily average flow of the Piercefield USGS gage. Baseflow for the Raymondville Development is measured at the Kent Mill "cemetery riffle" located approximately 4 miles downstream of the Raymondville Development. Total daily average outflow from the Colton Development of the Middle Raquette River Project, in conjunction with the Carry Falls Reservoir elevation and Piercefield USGS gage data will be used in determining the type of flow condition and corresponding baseflow.

The Carry Falls Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC) and United States Fish and Wildlife Service (USFWS).

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation. No deviations have occurred in the past 10 years.

Information Required to Support Water Quality Standards.

III.B.1 Water Quality: Zone 1

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a

		Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

The Carry Falls Reservoir is not listed as impaired in the 2018 Section 303(d) List of Impaired Waters Requiring a total maximum daily load (TMDL)/Other Strategy. A copy of the Final 2018 Section 303(d) list for New York State can be viewed at https://www.dec.ny.gov/docs/water_pdf/section303d2018.pdf

NYSDEC classifies the waters of the Carry Falls Reservoir as a Class B designated best usages for primary and secondary contact recreation and fishing and also suitable for fish propagation and survival. The NYSDEC classifies the Raquette River from Piercefield to Massena as a transition from coldwater to coolwater aquatic community/ fishery.

As required by the Settlement Offer, the Carry Falls Reservoir is governed by a guide curve, as described in the Settlement Agreement submitted March 13, 1998. The Carry Falls guide curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Raquette River basin. The Settlement Agreement also requires tiered baseflow to the Raymondville Development, the most downstream hydroelectric facility on the Raquette River, and an instream flow schedule while maintaining target water surface level elevations in the Carry Falls Reservoir and the Upper Raquette River impoundments.

According to the Environmental Assessment, the Licensee performed a river wide water quality monitoring at a series of eight stations from Piercefield downstream to the hamlet of Raquette River (near Massena) from March through November 1996. Additionally, the Impoundment Fluctuation Study included water quality monitoring in July and August at two locations in each impoundment, and one location in the powerhouse tailrace and bypassed reach. These studies found that water quality for the Carry Falls Project reflects the good to excellent water quality. Specifically, the impoundment became weakly thermally stratified in summer, had relatively low pH, low buffering capacity, moderately low nutrients, and no substantial project related water quality deficiencies. These studies concluded that water quality is generally well above minimum standards for New York State Class B waters, and capable of supporting a diverse and healthy coolwater aquatic community. The NYSDEC also monitors 18 water quality parameters at two stations on the Raquette River as part of the Rotating Intensive Basin Studies. NYSDEC assessed the water quality at their Piercefield and Massena stations as good to excellent from 1991-1992.

The Upper Raquette River Project is in compliance with all conditions issued pursuant to a Clean Water Act – Section 401 WQC. The Section 401 WQC is conditioned on compliance with the

terms of the Settlement Offer. The WQC for the Project was issued June 11, 1998 (https://lowimpacthydro.org/wp-content/uploads/2020/08/11408_Salmon_WQC.pdf). Consistent with License Article 402, the licensee filed a final Streamflow Monitoring Plan on August 30, 2002, which was modified and approved by the Commission on April 3, 2003. Consistent with the approved streamflow monitoring plan, the licensee installed staff gages and implemented reservoir fluctuation limits. The reservoir levels in the Carry Falls Reservoir are continuously monitored by the licensee's National System Control Center (NSCC). Data regarding headpond elevation and applicable gate opening information is recorded on a daily basis by the licensee. Gate opening versus flow relationships are developed using the information recorded daily, reviewed periodically, and updated upon any change in the instream flow release structure.

Streamflow Monitoring Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20020906-0185&optimized=false

Order Modifying and Approving Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20030403-3016&optimized=false

Generally, any changes to the original WQC are necessitated by significant changes in or to the Project environment affecting the Conditions of the original WQC, which culminates in an amendment of the original WQC. This situation has not occurred for the Upper Raquette River Project WQC, and the original WQC, issued on June 11, 1998 is still in effect.

Additionally, the Applicant contacted the NYSDEC on March 18, 2022, regarding the current WQC status for the Project. The NYSDEC responded on June 8, 2022 stating that the existing WQC is valid for the duration of the FERC license. The consultation documentation regarding the 401 WQC is included in Appendix D.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

Information Required to Support Upstream Fish Passage Standards.

III.C.1 Upstream Fish Passage: Zone 1

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

There are no upstream fish passage barriers or migratory fish management issues in Zone 1 because there are no anadromous or catadromous fish species in the waters of the Carry Falls Project. Since the reservoir location is well above the historic upstream extent of anadromous fish migrations (at the Hannawa development of the Middle Raquette River Project), no anadromous fish restoration efforts are anticipated in the future. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the Project. In the Settlement Offer, the Department of the Interior (Interior) requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 403 of the 2002 FERC license.

According to the Environmental Assessment, the Carry Falls Reservoir was sampled intensively on several occasions from 1991 to 1995. The most abundant species in the surveys were yellow perch, smallmouth bass, walleye, rock bass, northern pike, and brook trout. A complete list of fish species reported in the vicinity of the Project can be found in Environmental Report Appendix Tables E.3-15, E.3-17, E.3-18, E.3-19, E.3-20, and E.3-21 of the Final License Application. The Raquette River currently supports a mixed coolwater/ warmwater fishery.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Final License Application:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19990201-0242&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

Information Required to Support Downstream Fish Passage Standards.

III.D.1 Downstream Fish Passage: Zone 1

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.

		• Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

There are no downstream fish passage barriers or migratory fish management issues in Zone 1 because there is no facility barrier to further downstream movement. As the Project is a storage reservoir with no generating facilities, downstream passage of resident fish species can occur any time the reservoir is releasing water, without concern for turbine mortality. Furthermore, there are no anadromous or catadromous fish species in the waters of the Carry Falls Project. Since the reservoir location is well above the historic upstream extent of anadromous fish migrations (at the Hannawa development of the Middle Raquette River Project), no anadromous fish restoration efforts are anticipated in the future. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the development. In the Settlement Offer, the Department of the Interior (Interior) requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 403 of the 2002 FERC license.

According to the Environmental Assessment, the Carry Falls Reservoir was sampled intensively on several occasions from 1991 to 1995. The most abundant species in the surveys were yellow perch, smallmouth bass, walleye, rock bass, northern pike, and brook trout. A complete list of fish species reported in the vicinity of the Project can be found in Environmental Report Appendix Tables E.3-15, E.3-17, E.3-18, E.3-19, E.3-20, and E.3-21 of the Final License Application. The Raquette River currently supports a mixed coolwater/ warmwater fishery.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Final License Application:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19990201-0242&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

Information Required to Support Shoreline and Watershed Protection Standards.

III.E.1 Shoreline and Watershed Protection: Zone 1

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

The Carry Falls Project is located in the Adirondack region, which is primarily undeveloped woodlands with small pockets of development and recreational facilities. The Adirondack Park encompasses most of this region and was established to protect and manage natural resources. The entire Project is within the Adirondack Park boundary and is therefore under jurisdiction of the Adirondack Park Authority (APA). APA land management categories within the Project area include Rural Use, Resource Management, Wild Forest, and Pending Classification. All the Licensee's lands in this area are managed in accordance with the APA's land use regulations. The Licensee owns the majority of land bordering the reservoir. The Carry Falls Project is characterized by low intensity development consisting of hunting and summer cabins, camping facilities, and water recreation facilities. Land immediately adjacent to the Carry Falls Project reservoir is predominantly undeveloped forestland, with recreational facilities/ access points located along its shoreline. Land uses located farther away from the shoreline area range from a recreational campground and private recreational facility to areas of sparse development and undeveloped lands.

The Settlement Agreement recommends the reduction of impoundment fluctuations to improve habitat, recreational values, and protect shoreline. The new guide curve for Carry Falls described in the Settlement Agreement reduces Stark drawdowns from 23 feet to 1 foot or less. The reduced impoundment fluctuations will lead to a large percentage of the reservoir substrate being wetted 100% of the time, ultimately improving wetlands and aquatic habitats.

There is no Shoreline Management Plan for the Project.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

Information Required to Support Threatened and Endangered Species Standards.

III.F.1 Threatened and Endangered Species: Zone 1

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

Based on information received from the USFWS's New York Field Office on March 21, 2022, regarding a request for information on rare, threatened or endangered (RTE) species it appears that

the Monarch Butterfly (*Danaus plexippus*) may potentially occur within the Project area. There are no critical habitats located within the Project area.

The USFWS has not adopted a formal recovery plan for the Monarch Butterfly. On November 18, 2020, the USFWS published a petition for rulemaking for a section 4(d) rule to list the species as threatened under the Endangered Species Act.

During preparation of this application, Erie also consulted with NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Upper Raquette River Project. By letter dated May 16, 2022, the NYSDEC indicated that Bald Eagle (*Haliaeetus leucocephalus*), which is state-listed as threatened, Spruce Grouse (*Falcipennis canadensis*), which is state-listed endangered, Common Loon (*Gavia immer*), which is state-listed as a species of special concern, and Northern Clustered Sedge (*Carex arcta*), which is state-list endangered, have been documented in the vicinity of the Project. The Bald Eagle is protected under Environmental Conservation Law Section 11-0535, New York Code of Rules and Regulations (6 NYCRR Part 182), and the Migratory Bird Treaty Act. Bald Eagles have been documented in the vicinity of the Stark reservoir and Spruce Grouse have been documented within one mile of Blake Reservoir.

The NYSDEC has developed a Conservation Plan for Bald Eagles in New York State:
https://www.dec.ny.gov/docs/wildlife_pdf/nybaldeagleplan.pdf

Conservation strategies include limiting construction, foresting, and recreation activities in the vicinity of nest trees and deep winter roost sites.

Article 407 of the FERC license requires the Licensee to develop and implement a bald eagle protection and management plan. The Bald Eagle Protection and Management Plan, approved by FERC on July 17, 2003, continues to be implemented. The Settlement Agreement declares that the project facilities and operations will have no adverse effect on federal or state listed threatened or endangered species. The Environmental Assessment concludes that the operation of the Project with mitigative signage would not likely adversely affect the bald eagle.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

The record of RTE consultation is included in Appendix E.

Information Required to Support Cultural and Historic Resources Standards.

III.G.1 Cultural and Historic Resources: Zone 1

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands associated with the designated ZoE that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands in the designated ZoE; and • Provide a letter from the state and tribal (if applicable) historic preservation office that confirms no effect (this may be newly obtained or issued during prior FERC licensing or exemption proceedings).

Article 405 of the License requires implementation of the "Amendment to the 1996 Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer, for Managing Historic Properties That May Be Affected By Licenses Issued For the Continued Operation of the Four Raquette River Hydroelectric Power Projects in Upstate New York," executed on February 6, 2002.

Amendment to the 1996 Programmatic Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20020215-0523&optimized=false

According to the Environmental Assessment, cultural resource studies in the area of potential effect (APE) identified that there are no historic properties listed on or eligible for listing in the National register within the Upper Raquette River Project's APE. SHPO's archaeological sensitivity maps identify no known archaeological sites in the vicinity of the Project that could be near or within the Project's APE. The Licensee consulted with the SHPO pursuant to Section 106 of the National Historic Preservation Act (NHPA). In a letter dated July 18, 1996 (included in License Application), SHPO stated it had no concerns regarding historic buildings, structures, or districts within the Carry Falls Project area. In a letter dated July 15, 1998 (included in License Application), SHPO indicated it had reviewed the Settlement and had no additional comments. The Settlement states continued operation of the Project will not affect historic preservation issues.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

In response to draft application and Settlement for the Carry Falls Projects, the Bureau of Indian Affairs (BIA) filed comments dated December 3, 1998 (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19981207-0488&optimized=false). BIA concluded that the Project, as operated by the Settlement Agreement, would be adequate to protect the tribal trust resources of the St. Regis Mohawk Tribe.

The Licensee filed a Historic Property Management Plan (HPMP) on April 14, 2003 and has yet to receive a response. The licensee implements its Amendment to the 1996 Programmatic Agreement and HPMP to mitigate the effects of operations within the project's APE, pursuant to license Article 405.

The licensee filed an annual monitoring report on activities undertaken that may be subject to the HPMP. The annual monitoring report for 2021 was filed on January 31, 2022. The licensee appears to be in compliance with its requirements with regard to cultural resources.

Historic Property Management Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20030430-0217&optimized=false

January 31, 2022 Annual HPMP Report:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220131-5207&optimized=false

Information Required to Support Recreational Resources Standards.

III.H.1 Recreational Resources: Zone 1

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Recreational facilities owned and operated by the Carry Falls Project include the Parmenter Campground, a trailer-accessible boat launch and day use area, and two canoe portages. These facilities are owned and maintained by the Licensee. The Catamount Conference Center and Recreation Area is in the vicinity of the Project and is a private facility owned and operated by St. Lawrence University.

Article 404 requires the licensee to file a recreation plan. Consistent with Article 404 and the Settlement Agreement, the plan includes (1) provisions for continued maintenance of the existing recreational facilities; (2) final site plans for the new recreational facilities; (3) erosion and sediment control measures for construction activities, if appropriate; (4) locations for directional signage, determined in consultation with the New York State Department of Environmental Conservation (NYSDEC); and (5) an implementation schedule.

On November 17, 2004 FERC issued an Order Modifying and Approving the Recreation Plan, which was submitted to FERC on April 11, 2003. Recreation enhancements included (1) canoe portage around the Carry Falls dam; and (2) canoe portage between the Carry Falls Reservoir and the Jordan River. Erie is in compliance with the enhancements required by Article 404, as demonstrated in the Form 80 submitted to FERC on March 31, 2015 (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5614&optimized=false) and the environmental inspection report submitted on August 24, 2017 by New York Regional Office (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20170824-3029&optimized=false). Recent photographs of representative recreation facilities at the Carry Falls Project are included in Appendix B.

Order Approving the Recreation Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20041117-3026&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

The licensee only limits public access to facilities specifically related to hydroelectric generation including, but not limited to, dams, dikes, intake structures, water conveyance structures, powerhouses, substations, transmission lines, and certain access roads leading to such facilities.

UPPER RAQUETTE RIVER PROJECT

Information Required to Support Ecological Flows Standards

III.A. 2. Ecological Flows: Zone 2

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 2 of the Upper Raquette River Project is the Stark impoundment. As required by the Settlement Offer, the Upper Raquette River Project is a peaking and load following project which operates via releases from the Carry Falls Reservoir, which is governed by a guide curve, as described in the Settlement Agreement, submitted March 13, 1998. The Carry Falls guide curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Raquette River basin. The Settlement Agreement also requires tiered baseflow to the Raymondville Development, the most downstream hydroelectric facility on the Raquette River, and an instream flow schedule while maintaining target water surface level elevations in the Carry Falls Reservoir and the Upper Raquette River impoundments.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

According to the Settlement Agreement, an Impoundment Fluctuation Study for the Upper Raquette River and Carry Falls Reservoir was conducted in the summers of 1995 and 1996 to delineate the areas and types of habitats within the normal operational fluctuation zone of each impoundment. This study involved habitat mapping of the near shore zone using field reconnaissance observations of habitat characteristics and photo and video documentation. Normal impoundment fluctuations of the five developments of the Upper Raquette River Project are shown in the table below. The new guide curve for Carry Falls described in the Settlement Agreement reduces Stark drawdowns from 23 feet to 1 foot or less. The reduced impoundment fluctuations will lead to a large percentage of the reservoir substrate being wetted 100% of the time, ultimately improving wetlands and aquatic habitats. Blake, Rainbow, Five Falls, and South Colton

impoundment fluctuations remain at status quo, maintaining existing shallow water littoral and wetland habitat. Impoundment fluctuations are managed by Automatic Generation Control (AGC) software employed by the Licensee's NSCC.

Upper Raquette River Project Normal Impoundment Fluctuations

Development	Permanent Crest of Dam (feet USGS)	Normal Impoundment Fluctuation Magnitude	Elevation Range[1]
Stark	1355.0	1.0 foot	1354.7 to 1353.7[2]
Blake	1250.5	1.0 foot	1250.2 to 1249.2
Rainbow	1181.5	1.0 foot	1181.2 to 1180.2
Five Falls	1077.0	2.0 feet	1076.7 to 1074.7
South Colton	973.5	2.0 feet	973.2 to 971.2

1. Normal impoundment fluctuations of the developments of the Upper Raquette River Project are measured from 0.3 feet below permanent crest of dam.
2. The crest of Stark Dam is at elevation 1355 which results in a backwater to Carry Falls Dam. To allow for drawdowns of Carry Falls Reservoir below elevation 1355, the Stark impoundment would have to be drawn down in conjunction with Carry Falls Reservoir. In these circumstances, the impoundment fluctuation within Stark impoundment may be greater than 1.0 foot.

Minimum base flows to the Raymondville development provide stable flows that ensure that most of the riffle habitat is adequately watered at all times. The baseflow downstream of the Raymondville Development during "wet" and "normal" conditions is 560 cfs. During "dry" conditions, the baseflow will be reduced to 290 cfs. During "drought" conditions, the baseflow is equal to the daily average flow of the Piercefield USGS gage. Baseflow for the Raymondville Development is measured at the Kent Mill "cemetery riffle" located approximately 4 miles downstream of the Raymondville Development. Total daily average outflow from the Colton Development of the Middle Raquette River Project, in conjunction with the Carry Falls Reservoir elevation and Piercefield USGS gage data will be used in determining the type of flow condition and corresponding baseflow.

The Upper Raquette River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC) and United States Fish and Wildlife Service (USFWS).

Article 402 of the license requires that a streamflow monitoring plan be developed to ensure compliance with the Settlement Agreement. The licensee filed a final Streamflow Monitoring Plan on August 30, 2002, which was modified and approved by the Commission on April 3, 2003. Consistent with the approved streamflow monitoring plan, the licensee installed staff gages and implemented reservoir fluctuation limits and provided nominal minimum flows. The reservoir levels and instream flows in the Salmon River Reservoir are continuously monitored by the

licensee's NSCC. Data regarding headpond elevation and applicable gate opening information is recorded on a daily basis by the licensee. Gate opening versus flow relationships are developed using the information recorded daily, reviewed periodically, and updated upon any change in the instream flow release structure.

Streamflow Monitoring Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20020906-0185&optimized=false

Order Modifying and Approving Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20030403-3016&optimized=false

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation.

III.A. 3. Ecological Flows: Zone 3

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Zone 3 of the Upper Raquette River Project is the Stark bypassed reach. As required by the Settlement Offer, the Upper Raquette River Project is a peaking and load following project which operates via releases from the Carry Falls Reservoir, which is governed by a guide curve, as described in the Settlement Agreement, submitted March 13, 1998. The Carry Falls guide curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Raquette River basin. The Settlement Agreement also requires tiered baseflow to the Raymondville Development, the most downstream hydroelectric facility on the Raquette River, and an instream flow schedule while maintaining target water surface level elevations in the Carry Falls Reservoir and the Upper Raquette River impoundments.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

According to the Settlement Agreement, the Licensee performed an instream flow study in the summer of 1996 to evaluate instream flow needs for the five bypass reaches associated with the Upper Raquette River Project. This study involved gaging of streamflow, water quality monitoring, photo and video documentation, measurement of wetted channel width during flow releases, and habitat availability assessments. This study formed the basis for the flows ultimately agreed upon within the Settlement. As a result, a comprehensive, biologically based flow recommendation that incorporates and balances all relevant flow-related environmental values for each bypass reach was developed. The bypass reach flows were designed to restore dewatered reaches. Instream flows for each development is provided in the table below.

Upper Raquette River Project Instream Flows

Development	Flow Magnitude	Annual Start Date	Annual End Date
Stark	45 cfs (42-48)	January 1	December 31
	90 cfs (84-96)	Immediately after any Tainter gate release of 24 hours	24 hours after end of any Tainter gate release
Blake	55 cfs (52-58)	January 1	Start of walleye spawning season
	120 cfs	Start of walleye spawning season	June 30
	55 cfs (52-58)	July 1	December 31
Rainbow	20 cfs	January1	December 31
Five Falls	50 cfs (43-57)	January 1	Start of walleye spawning season
	145 cfs (125-165)	Start of walleye spawning season	End of walleye spawning season
	50 cfs (43-57)	End of walleye spawning season	December 31
South Colton	20 cfs with channel modifications (17-23)	January 1	December 31
	60 cfs without channel modifications	January 1	December 31

The Upper Raquette River Project is in compliance with resource agency conditions issued regarding flow conditions. The FERC license, Settlement Offer, and Section 401 Water Quality Certificate (WQC) include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC) and United States Fish and Wildlife Service (USFWS).

Article 402 of the license requires that a streamflow monitoring plan be developed to ensure compliance with the Settlement Agreement. The licensee filed a final Streamflow Monitoring Plan

on August 30, 2002, which was modified and approved by the Commission on April 3, 2003. Consistent with the approved streamflow monitoring plan, the licensee installed staff gages and implemented reservoir fluctuation limits and provided nominal minimum flows. The reservoir levels and instream flows in the Salmon River Reservoir are continuously monitored by the licensee's NSCC. Data regarding headpond elevation and applicable gate opening information is recorded on a daily basis by the licensee. Gate opening versus flow relationships are developed using the information recorded daily, reviewed periodically, and updated upon any change in the instream flow release structure.

Streamflow Monitoring Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20020906-0185&optimized=false

Order Modifying and Approving Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20030403-3016&optimized=false

Erie remains in compliance with the established flow conditions and impoundment levels and maintains records of these conditions at the Project. In the event of a deviation from established minimum flows or impoundment levels, Erie files documentation with FERC detailing the reasons for the deviation. Three minimum flow deviations have occurred in the last 10 years, outlined in the table below.

Date submitted	Date of Deviation	Development	Cause	FERC violation	FERC letter date	Corrective measures
7/2/2014 eLibrary (ferc.gov)	6/4/2014-6/11/2014	Stark, Blake	Minimum flow deviation. On April 21st, 2014 Brookfield requested permission from the NYSDEC to suspend minimum flows at the Stark and Blake developments in order to facilitate toe inspections at both dams. The NYSDEC approved the request to suspend the minimum flows on the same day. Immediately prior to the Part 12 safety inspections on June 4th, the minimum flows were partially blocked off to perform said inspections. Upon completion of the toe inspections, minimum flows were, inadvertently, not re-established until June 11th.	Yes	10/31/2014 eLibrary (ferc.gov)	Brookfield operations will field verify gate discharge curve and coordinate with compliance staff during all future inspections to establish a better line of communication.
5/26/2017 eLibrary (ferc.gov)	5/15/2017	Stark	Minimum flow deviation. The System Operator misinterpreted the gate flow requirement and felt the minimum flow requirement had been satisfied. After the shift change, the new shift operator recognized the deviation from the requirement and reopened the gate for the required flow (90 cfs) where it was maintained for the required time.	Yes	8/21/2017 eLibrary | File List (ferc.gov)	The procedure will be reviewed to ensure the requirements are clearly state, and updated it needed. The system operator will receive refresher training on the Stark gate closing protocols.
4/15/2021 eLibrary (ferc.gov)	4/8/2021	Stark	Minimum flow deviation. The system operator misinterpreted the gate flow requirement. After the shift change, the new shift operator recognized the deviation from the requirement and reopened the gate for the required flow (90 cfs) where it was maintained for the required time.	Yes	5/6/2021 eLibrary (ferc.gov)	The procedure will be reviewed by Brookfield's National System Control Center and the System Operator will receive refresher training on the Stark gate closing protocols.

III.A. 4. Ecological Flows: Zone 4

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zones 2 and 3.

III.A. 5. Ecological Flows: Zone 5

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 2.

III.A. 6. Ecological Flows: Zone 6

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).

Criterion	*Standard*	*Instructions*
		• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 3.

III.A. 7. Ecological Flows: Zone 7

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zones 2 and 3.

III.A. 8. Ecological Flows: Zone 8

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife

Criterion	*Standard*	*Instructions*
		protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 2.

III.A. 9. Ecological Flows: Zone 9

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 3.

III.A. 10. Ecological Flows: Zone 10

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zones 2 and 3.

III.A. 11. Ecological Flows: Zone 11

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 2.

III.A. 12. Ecological Flows: Zone 12

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 3.

III.A. 13. Ecological Flows: Zone 13

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective).

Criterion	*Standard*	*Instructions*
		• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zones 2 and 3.

III.A. 14. Ecological Flows: Zone 14

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 2.

III.A. 15. Ecological Flows: Zone 15

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife

Criterion	*Standard*	*Instructions*
		protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zone 3.

III.A. 16. Ecological Flows: Zone 16

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation (see Appendix A for definitions): • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See responses above for Zones 2 and 3.

Information Required to Support Water Quality Standards

III.B.2 Water Quality: Zone 2

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

The Upper Raquette River is not listed as impaired in the 2018 Section 303(d) List of Impaired Waters Requiring a total maximum daily load (TMDL)/Other Strategy. A copy of the Final 2018 Section 303(d) list for New York State can be viewed at https://www.dec.ny.gov/docs/water_pdf/section303d2018.pdf

NYSDEC classifies the waters of the Upper Raquette River Project as a Class B designated best usages for primary and secondary contact recreation and fishing and also suitable for fish propagation and survival. The NYSDEC classifies the Raquette River from Piercefield to Massena as a transition from coldwater to coolwater aquatic community/ fishery.

As required by the Settlement Offer, the Upper Raquette River Project is a peaking and load following project which operates via releases from the Carry Falls Reservoir, which is governed by a guide curve, as described in the Settlement Agreement, submitted March 13, 1998. The Carry Falls guide curve provides protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Raquette River basin. The Settlement Agreement also requires tiered baseflow to the Raymondville Development, the most downstream hydroelectric facility on the Raquette River, and an instream flow schedule while maintaining target water surface level elevations in the Carry Falls Reservoir and the Upper Raquette River impoundments.

According to the Environmental Assessment, the Licensee performed a river wide water quality monitoring at a series of eight stations from Piercefield downstream to the hamlet of Raquette River (near Massena) from March through November 1996. Additionally, the Impoundment Fluctuation Study included water quality monitoring in July and August at two locations in each impoundment, and one location in the powerhouse tailrace and bypassed reach. These studies found that water quality for the Upper Raquette River Project reflects the good to excellent water quality. Specifically, the impoundments are considered mesotrophic in character with some thermal stratification in summer, relatively low pH, low buffering capacity, and no substantial project related water quality deficiencies. These studies concluded that water quality is generally well above minimum standards for New York State Class B waters, and capable of supporting a diverse and healthy coolwater aquatic community. The NYSDEC also monitors 18 water quality parameters at two stations on the Raquette River as part of the Rotating Intensive Basin Studies. NYSDEC assessed the water quality at their Piercefield and Massena stations as good to excellent from 1991-1992.

The Upper Raquette River Project is in compliance with all conditions issued pursuant to a Clean Water Act – Section 401 WQC. The Section 401 WQC is conditioned on compliance with the terms of the Settlement Offer. The WQC for the Project was issued June 11, 1998 (Appendix D). Consistent with License Article 402, the licensee filed a final Streamflow Monitoring Plan on August 30, 2002, which was modified and approved by the Commission on April 3, 2003. Consistent with the approved streamflow monitoring plan, the licensee installed staff gages and

implemented reservoir fluctuation limits and provided nominal minimum flows. The reservoir levels and instream flows in the Upper Raquette River Project are continuously monitored by the licensee's NSCC. Data regarding headpond elevation and applicable gate opening information is recorded on a daily basis by the licensee. Gate opening versus flow relationships are developed using the information recorded daily, reviewed periodically, and updated upon any change in the instream flow release structure.

Streamflow Monitoring Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20020906-0185&optimized=false

Order Modifying and Approving Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_Number=20030403-3016&optimized=false

Generally, any changes to the original WQC are necessitated by significant changes in or to the Project environment affecting the Conditions of the original WQC, which culminates in an amendment of the original WQC. This situation has not occurred for the Upper Raquette River Project WQC, and the original WQC, issued on June 11, 1998 is still in effect.

Additionally, the Applicant contacted the NYSDEC on March 18, 2022, regarding the current WQC status for the Project. The NYSDEC responded on June 8, 2022 stating that the existing WQC is valid for the duration of the FERC license. The consultation documentation regarding the 401 WQC is included in Appendix D.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

III.B.3 Water Quality: Zone 3

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

According to the Environmental Assessment, the Upper Raquette River Delphi Instream Flow Study measured water quality in each of the bypassed reaches. The study reported somewhat warmed temperatures, slight increases in pH values from upstream to downstream, and unchanged specific conductance. Dissolved oxygen levels decreased in outflow water as a result of warmer temperatures and equilibration of super saturated water. A noticeable water quality gradient exists in large bypass pools at low flow conditions in which temperature, dissolved oxygen, and pH decline with depth and specific conductance increases.

See above response for Zone 2.

III.B.4 Water Quality: Zone 4

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

See above response for Zone 2.

III.B.5 Water Quality: Zone 5

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife

		protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 2.

III.B.6 Water Quality: Zone 6

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

See above responses for Zones 2 and 3.

III.B.7 Water Quality: Zone 7

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

See above response for Zone 2.

III.B.8 Water Quality: Zone 8

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

See above response for Zone 2.

III.B.9 Water Quality: Zone 9

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

See above responses for Zones 2 and 3.

III.B.10 Water Quality: Zone 10

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

See above response for Zone 2.

III.B.11 Water Quality: Zone 11

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

See above response for Zone 2.

III.B.12 Water Quality: Zone 12

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

See above responses for Zones 2 and 3.

III.B.13 Water Quality: Zone 13

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

See above response for Zone 2.

III.B.14 Water Quality: Zone 14

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency

		recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

See above response for Zone 2.

III.B.15 Water Quality: Zone 15

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

See above responses for Zones 2 and 3.

III.B.16 Water Quality: Zone 16

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required

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

See above response for Zone 2.

Information Required to Support Upstream Fish Passage Standards.

III.C.2 Upstream Fish Passage: Zone 2

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

There are no upstream fish passage barriers or migratory fish management issues in Zone 2 because there are no anadromous or catadromous fish species in the waters of the Upper Raquette River Project. Since the reservoir location is well above the historic upstream extent of anadromous fish migrations (at the Hannawa development of the Middle Raquette River Project), no anadromous fish restoration efforts are anticipated in the future. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the Development. In the Settlement Offer, the Department of the Interior (Interior) requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 403 of the 2002 FERC license.

According to the Environmental Assessment, the Licensee conducted a fish sampling program specifically directed to the bypassed reaches in 1996. NYSDEC sampled the Stark and Blake reservoirs between 1992 and 1993, and the Rainbow, Five Falls, and South Colton reservoirs between 1994 and 1995. The Upper Raquette River developments have comparable fish species assemblages, dominated by smallmouth bass, yellow perch, and rock bass. Other species present include walleye, white sucker, northern pike, brown bullhead, fallfish, pumpkinseed, cisco, banded

killifish, and blacknose dace. A complete list of fish species reported in the vicinity of the Project can be found in Environmental Report Appendix Tables E.3-15, E.3-17, E.3-18, E.3-19, E.3-20, and E.3-21 of the Final License Application. The Raquette River currently supports a mixed coolwater/ warmwater fishery.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Final License Application:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19990201-0244&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

III.C.3 Upstream Fish Passage: Zone 3

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

See above response for Zone 2.

III.C.4 Upstream Fish Passage: Zone 4

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

See above response for Zone 2.

III.C.5 Upstream Fish Passage: Zone 5

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

See above response for Zone 2.

III.C.6 Upstream Fish Passage: Zone 6

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

See above response for Zone 2.

III.C.7 Upstream Fish Passage: Zone 7

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

See above response for Zone 2.

III.C.8 Upstream Fish Passage: Zone 8

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

See above response for Zone 2.

III.C.9 Upstream Fish Passage: Zone 9

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

See above response for Zone 2.

III.C.10 Upstream Fish Passage: Zone 10

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity.

		• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See above response for Zone 2.

III.C.11 Upstream Fish Passage: Zone 11

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

See above response for Zone 2.

III.C.12 Upstream Fish Passage: Zone 12

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

See above response for Zone 2.

III.C.13 Upstream Fish Passage: Zone 13

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.

		• Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See above response for Zone 2.

III.C.14 Upstream Fish Passage: Zone 14

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

See above response for Zone 2.

III.C.15 Upstream Fish Passage: Zone 15

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

See above response for Zone 2.

III.C.16 Upstream Fish Passage: Zone 16

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an

		impoundment, there is no facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See above response for Zone 2.

Information Required to Support Downstream Fish Passage Standards.

III.D.2 Downstream Fish Passage: Zone 2

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

As part of the Settlement Agreement submitted March 13, 1998, downstream fish movement is facilitated at all developments. The minimum flow release structure serves to facilitate downstream fish movement and are modified to ensure safe downstream movement. These modifications include reducing the roughness of the spillway, reducing dispersion of the release across the spillway face, and creating an adequate plunge pool. The Settlement Agreement also requires the Licensee to install 1.0-inch trashracks at each development. Consistent with the Settlement Agreement, Erie installed 1-inch trashracks in 2013 at South Colton, 2016 at Rainbow, 2017 at Five Falls, 2019 at Stark, and 2020 at Blake and implemented instream flows. The Licensee is not required to monitor or measure the movement of fish through the designated movement points or turbines. However, instream flows are monitored continuously by the licensee's NSCC. Data regarding headpond elevation and applicable gate opening information is recorded on a daily basis by the licensee. Gate opening versus flow relationships are developed using the information recorded daily, reviewed periodically, and updated upon any change in the instream flow release structure.

The recommendations agreed upon in the Settlement are based on an entrainment and mortality study performed at the five developments of the Upper Raquette River Project in the summer of 1996. This study determined that developments of the Upper Raquette River Project exhibit

relatively low risk of substantial entrainment, and an entrained fish at any given development may encounter low to medium risk or mortality. The Interior requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which was granted in Article 403 of the license.

According to the Environmental Assessment, the Licensee conducted a fish sampling program specifically directed to the bypassed reaches in 1996. NYSDEC sampled the Stark and Blake reservoirs between 1992 and 1993, and the Rainbow, Five Falls, and South Colton reservoirs between 1994 and 1995. The Adirondacks Lake Survey Corporation also conducted fishery surveys in the South Colton and Five Falls impoundments. The Upper Raquette River developments have comparable fish species assemblages, dominated by smallmouth bass, yellow perch, and rock bass. Other species include walleye, northern pike, white sucker, brown bullhead, fallfish, pumpkinseed, blacknose dace, cisco, and banded killifish. A complete list of fish species found in the vicinity of the Project can be found in the Final License Application Environmental Report Appendix Tables E.3-15, E.3-17, E.3-18, E.3-19, E.3-20, and E.3-21. The Raquette River currently supports a mixed coolwater/ warmwater fishery.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Final License Application:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19990201-0244&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

III.D.3 Downstream Fish Passage: Zone 3

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.4 Downstream Fish Passage: Zone 4

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

There are no downstream fish passage barriers or migratory fish management issues in Zone 3 because there is no facility barrier to further downstream movement. Furthermore, there are no anadromous or catadromous fish species in the waters of the Upper Raquette River Project. Since the reservoir location is well above the historic upstream extent of anadromous fish migrations (at the Hannawa development of the Middle Raquette River Project), no anadromous fish restoration efforts are anticipated in the future. There are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish at the development. In the Settlement Offer, the Department of the Interior (Interior) requested reservation of its authority to prescribe upstream and downstream fish passage devices in the future, which is provided in Article 403 of the 2002 FERC license.

According to the Environmental Assessment, the Licensee conducted a fish sampling program specifically directed to the bypassed reaches in 1996. NYSDEC sampled the Stark and Blake reservoirs between 1992 and 1993, and the Rainbow, Five Falls, and South Colton reservoirs between 1994 and 1995. The Adirondacks Lake Survey Corporation also conducted fishery surveys in the South Colton and Five Falls impoundments. The Upper Raquette River developments have comparable fish species assemblages, dominated by smallmouth bass, yellow perch, and rock bass. Other species include walleye, northern pike, white sucker, brown bullhead, fallfish, pumpkinseed, blacknose dace, cisco, and banded killifish. A complete list of fish species found in the vicinity of the Project can be found in the Final License Application Environmental Report Appendix Tables E.3-15, E.3-17, E.3-18, E.3-19, E.3-20, and E.3-21. The Raquette River currently supports a mixed coolwater/ warmwater fishery.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Final License Application:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19990201-0244&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

III.D.5 Downstream Fish Passage: Zone 5

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.6 Downstream Fish Passage: Zone 6

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.7 Downstream Fish Passage: Zone 7

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

See above response for Zone 4.

III.D.8 Downstream Fish Passage: Zone 8

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.9 Downstream Fish Passage: Zone 9

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.10 Downstream Fish Passage: Zone 10

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

See above response for Zone 4.

III.D.11 Downstream Fish Passage: Zone 11

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.12 Downstream Fish Passage: Zone 12

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.13 Downstream Fish Passage: Zone 13

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and

		timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

See above response for Zone 4.

III.D.14 Downstream Fish Passage: Zone 14

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.15 Downstream Fish Passage: Zone 15

Criterion	*Standard*	*Instructions*
D	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally protective). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

See above response for Zone 2.

III.D.16 Downstream Fish Passage: Zone 16

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

See above response for Zone 4.

Information Required to Support Shoreline and Watershed Protection Standards.

III.E.2 Shoreline and Watershed Protection: Zone 2

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

The Upper Raquette River Project is located in the Adirondack region, which is primarily undeveloped woodlands with small pockets of development and recreational facilities. The Adirondack Park encompasses most of this region and was established to protect and manage natural resources. The Upper Raquette River Project is characterized by low intensity development consisting of hunting and summer cabins, camping facilities, and water recreation facilities. The Licensee owns all land immediately adjacent to the developments and much of the upland areas surrounding the developments. However, the Licensee transferred ownership of 12,00 acres of neighboring land outside the Project boundary as part of the Settlement Offer to lower its operating

costs and return value to its electric customers and shareholders. The Stark, Blake, and Rainbow developments and the southern portion of Five Falls development are within the Adirondack Park boundary and are under jurisdiction of the Adirondack Park Authority (APA). APA has a number of shoreline restrictions, including building setbacks, minimum lot width restrictions, and vegetative cutting. The Licensee's land use practices comply with APA's regulations. Shoreline development in the South Colton and northern portion of Five Falls developments are under jurisdiction of the NYSDEC. NYSDEC has several building restrictions and community regulations, of which the Licensee is in compliance with. Any shoreline development must be permitted by the NYSDEC and must be in accordance with APA land use regulations.

The Settlement Agreement recommends the reduction of impoundment fluctuations to improve habitat, recreational values, and protect shoreline. The new guide curve for Carry Falls described in the Settlement Agreement reduces Stark drawdowns from 23 feet to 1 foot or less. The reduced impoundment fluctuations will lead to a large percentage of the reservoir substrate being wetted 100% of the time, ultimately improving wetlands and aquatic habitats. Blake, Rainbow, Five Falls, and South Colton impoundment fluctuations remain at status quo, maintaining existing habitat.

There is no Shoreline Management Plan for the Project.

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

III.E.3 Shoreline and Watershed Protection: Zone 3

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.4 Shoreline and Watershed Protection: Zone 4

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.5 Shoreline and Watershed Protection: Zone 5

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.6 Shoreline and Watershed Protection: Zone 6

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.7 Shoreline and Watershed Protection: Zone 7

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.8 Shoreline and Watershed Protection: Zone 8

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.9 Shoreline and Watershed Protection: Zone 9

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.10 Shoreline and Watershed Protection: Zone 10

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.11 Shoreline and Watershed Protection: Zone 11

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans).

Criterion	*Standard*	*Instructions*
		• Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.12 Shoreline and Watershed Protection: Zone 12

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.13 Shoreline and Watershed Protection: Zone 13

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.14 Shoreline and Watershed Protection: Zone 14

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.15 Shoreline and Watershed Protection: Zone 15

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

III.E.16 Shoreline and Watershed Protection: Zone 16

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility in the designated ZoE (e.g., Shoreline Management Plans). • Provide documentation that the facility is in full compliance with applicable agency recommendations or management plans.

See response above for Zone 2.

Information Required to Support Threatened and Endangered Species Standards.

III.F.2 Threatened and Endangered Species: Zone 2

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

Based on information received from the USFWS's New York Field Office on March 21, 2022, regarding a request for information on rare, threatened or endangered (RTE) species it appears that the Monarch Butterfly (*Danaus plexippus*) may potentially occur within the Project area. There are no critical habitats located within the Project area.

The USFWS has not adopted a formal recovery plan for the Monarch Butterfly. On November 18, 2020, the USFWS published a petition for rulemaking for a section 4(d) rule to list the species as threatened under the Endangered Species Act.

During preparation of this application, Erie also consulted with NYSDEC's Natural Heritage Program for an updated list of threatened and endangered species that may occur in the vicinity of the Upper Raquette River Project. By letter dated May 16, 2022, the NYSDEC indicated that Bald Eagle (*Haliaeetus leucocephalus*), which is state-listed as threatened, Spruce Grouse (*Falcipennis canadensis*), which is state-listed endangered, Common Loon (*Gavia immer*), which is state-listed as a species of special concern, and Northern Clustered Sedge (*Carex arcta*), which is state-list endangered, have been documented in the vicinity of the Project. The Bald Eagle is protected under Environmental Conservation Law Section 11-0535, New York Code of Rules and Regulations (6 NYCRR Part 182), and the Migratory Bird Treaty Act. Bald Eagles have been documented in the vicinity of the Stark reservoir and Spruce Grouse have been documented within one mile of Blake Reservoir.

The NYSDEC has developed a Conservation Plan for Bald Eagles in New York State: https://www.dec.ny.gov/docs/wildlife_pdf/nybaldeagleplan.pdf

Conservation strategies include limiting construction, foresting, and recreation activities in the vicinity of nest trees and deep winter roost sites.

Article 407 of the FERC license requires the Licensee to develop and implement a bald eagle protection and management plan. The Bald Eagle Protection and Management Plan, approved by FERC on July 17, 2003, continues to be implemented. The Settlement Agreement declares that the project facilities and operations will have no adverse effect on federal or state listed threatened or endangered species. The Environmental Assessment concludes that the operation of the Project with mitigative signage would not likely adversely affect the bald eagle.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

The record of RTE consultation is included in Appendix E.

III.F.3 Threatened and Endangered Species: Zone 3

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat

		conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.4 Threatened and Endangered Species: Zone 4

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.5 Threatened and Endangered Species: Zone 5

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.6 Threatened and Endangered Species: Zone 6

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.7 Threatened and Endangered Species: Zone 7

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.8 Threatened and Endangered Species: Zone 8

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.9 Threatened and Endangered Species: Zone 9

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.10 Threatened and Endangered Species: Zone 10

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.11 Threatened and Endangered Species: Zone 11

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.12 Threatened and Endangered Species: Zone 12

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.13 Threatened and Endangered Species: Zone 13

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.14 Threatened and Endangered Species: Zone 14

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.15 Threatened and Endangered Species: Zone 15

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

III.F.16 Threatened and Endangered Species: Zone 16

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

See response above for Zone 2.

Information Required to Support Cultural and Historic Resources Standards.

III.G.2 Cultural and Historic Resources: Zone 2

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

Article 405 of the License requires implementation of the "Amendment to the 1996 Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer, for Managing Historic Properties That May Be Affected By Licenses Issued For the Continued Operation of the Four Raquette River Hydroelectric Power Projects in Upstate New York," executed on February 6, 2002.

Amendment to the 1996 Programmatic Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20020215-0523&optimized=false

According to the Environmental Assessment, cultural resource studies in the area of potential effect (APE) identified that there are no historic properties listed on or eligible for listing in the National register within the Upper Raquette River Project's APE. However, SHPO's archaeological sensitivity maps identify six known archaeological sites in the vicinity of the Project that could be near or within the Project's APE. The Licensee consulted with the SHPO pursuant to Section 106 of the National Historic Preservation Act (NHPA). In a letter dated July 15, 1998 (included in License Application), SHPO indicated it had reviewed the Settlement and had no additional comments. The Settlement states continued operation of the Project will not affect historic preservation issues.

Environmental Assessment:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20010419-0564&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

The Licensee filed a Historic Property Management Plan (HPMP) on April 14, 2003 and has yet to receive a response. The licensee implements its Amendment to the 1996 Programmatic Agreement and HPMP to mitigate the effects of operations within the project's APE, pursuant to license Article 405.

The licensee files an annual monitoring report on activities undertaken that may be subject to the HPMP. The annual monitoring report for 2021 was filed on January 31, 2022. The licensee appears to be in compliance with its requirements with regard to cultural resources.

Historic Property Management Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20030430-0217&optimized=false

January 31, 2022 Annual HPMP Report:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220131-5207&optimized=false

III.G.3 Cultural and Historic Resources: Zone 3

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

See above response for Zone 2.

III.G.4 Cultural and Historic Resources: Zone 4

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

See above response for Zone 2.

III.G.5 Cultural and Historic Resources: Zone 5

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

See above response for Zone 2.

III.G.6 Cultural and Historic Resources: Zone 6

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

See above response for Zone 2.

III.G.7 Cultural and Historic Resources: Zone 7

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

See above response for Zone 2.

III.G.8 Cultural and Historic Resources: Zone 8

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

See above response for Zone 2.

III.G.9 Cultural and Historic Resources: Zone 9

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

See above response for Zone 2.

III.G.10 Cultural and Historic Resources: Zone 10

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

See above response for Zone 2.

III.G.11 Cultural and Historic Resources: Zone 11

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

See above response for Zone 2.

III.G.12 Cultural and Historic Resources: Zone 12

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

See above response for Zone 2.

III.G.13 Cultural and Historic Resources: Zone 13

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

See above response for Zone 2.

III.G.14 Cultural and Historic Resources: Zone 14

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

See above response for Zone 2.

III.G.15 Cultural and Historic Resources: Zone 15

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

See above response for Zone 2.

III.G.16 Cultural and Historic Resources: Zone 16

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

See above response for Zone 2.

Information Required to Support Recreational Resources Standards.

III.H.2 Recreational Resources: Zone 2

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Recreational facilities associated with the five developments are listed below. All facilities are maintained by the Licensee.

Development	Existing Facilities
Stark	• Multi-use area on the impoundment - Picnic facilities - Trailer accessible boat launch • Picnic area on bypass reach • Canoe portage
Blake	• McNeil Campground - 58 campsites (two ADA accessible) - Boat launches - Supervised swimming beach - Playground - Restrooms • Trailer accessible boat launch • Canoe portage • Dead Creek access
Rainbow	• Trailer accessible boat launch • Canoe portage • White Hill Wild Forest Trail
Five Falls	• Trailer accessible boat launch • Canoe portage
South Colton	• Trailer accessible boat launch • ADA fishing platform downstream of powerhouse • Canoe portage

Article 404 requires the licensee to file a recreation plan. Consistent with Article 404 and the Settlement Agreement, the plan includes (1) provisions for continued maintenance of the existing recreational facilities; (2) final site plans for the new recreational facilities; (3) erosion and sediment control measures for construction activities, if appropriate; (4) locations for directional

signage, determined in consultation with the New York State Department of Environmental Conservation (NYSDEC); and (5) an implementation schedule.

On November 17, 2004 FERC issued an Order Modifying and Approving the Recreation Plan, which was submitted to FERC on April 11, 2003. Recreation enhancements included (1) canoe portage at the Stark Development; (2) canoe portage and Dead Creek access at the Blake Development; (3) canoe portage and White Hill Wild Forest Trail at the Rainbow Development; (4) canoe portage at the Five Falls Development; and (5) canoe portage at the South Colton Development. Erie is in compliance with the enhancements required by Article 404, as demonstrated in the Form 80s submitted to FERC listed below.

Date filed	Development	Reference URL
3/31/2015	Stark	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5706&optimized=false
3/31/2015	Five Falls	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5655&optimized=false
3/31/2015	South Colton	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5690&optimized=false
3/31/2015	Rainbow	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5673&optimized=false
3/31/2015	Blake	https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20150331-5653&optimized=false

Compliance is also demonstrated by the environmental inspection submission to FERC on July 26, 2017 (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20170824-3024&optimized=false). Additional information was requested on August 22, 2017 (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20170822-3034&optimized=false). Erie filed a response on September 22, 2017 (https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20170922-5075&optimized=false). Recent photographs of representative recreation facilities at the Carry Falls Project are included in Appendix B.

Order Approving the Recreation Plan:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20041117-3026&optimized=false

Settlement Agreement:
https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19980428-0235&optimized=false

The licensee only limits public access to facilities specifically related to hydroelectric generation including, but not limited to, dams, dikes, intake structures, water conveyance structures, powerhouses, substations, transmission lines, and certain access roads leading to such facilities.

III.H.3 Recreational Resources: Zone 3

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.4 Recreational Resources: Zone 4

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.5 Recreational Resources: Zone 5

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.6 Recreational Resources: Zone 6

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.7 Recreational Resources: Zone 7

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.8 Recreational Resources: Zone 8

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.9 Recreational Resources: Zone 9

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.10 Recreational Resources: Zone 10

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.11 Recreational Resources: Zone 11

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.12 Recreational Resources: Zone 12

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.13 Recreational Resources: Zone 13

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.14 Recreational Resources: Zone 14

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such

Criterion	*Standard*	*Instructions*
		recommendations and plans.

See response above for Zone 2.

III.H.15 Recreational Resources: Zone 15

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

III.H.16 Recreational Resources: Zone 16

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

See response above for Zone 2.

PART IV. SWORN STATEMENT AND WAIVER

As an Authorized Representative of Erie Boulevard Hydropower, L.P., the Undersigned attests that the material presented in the application is true and complete.

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

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

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

Company Name: Erie Boulevard Hydropower, L.P.

Authorized Representative

Name: Daniel J. Maguire

Title: Compliance Manager

Authorized Signature: _____

Date: 6/15/22

PART V. CONTACTS

Table V-1. Complete contact information for Erie Boulevard Hydropower, L.P.

Project Owner:	
Name and Title	
Company	Erie Boulevard Hydropower, L.P., a subsidiary of Brookfield Renewable
Phone	
Email Address	
Mailing Address	399 Big Bay Road Queensbury, NY 12804
Project Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Daniel J. Maguire, P.E., Compliance Manage
Company	Brookfield Renewable
Phone	3 15-267-1036
Email Address	Danny.Maguire@brookfieldrenewable.com
Mailing Address	184 Elm Street, Potsdam, NY 13676
Party responsible for accounts payable:	
Name and Title	
Company	Brookfield Renewable
Phone	
Email Address	AP@brookfieldrenewable.com
Mailing Address	41 Victoria, Gatineau, QC J8X 2A1
Name and Title	Sandeep Mascarenhas, Senior Analyst, Capacity & Ancillary Services Management
Company	Brookfield Renewable
Phone	819-561-2722 ext. 6743
Email Address	Sandeep.Mascarenhas@brookfieldrenewable.com
Mailing Address	41 Victoria, Gatineau, QC J8X 2A1

Table V-2. Complete contact information for current and relevant state, federal, provincial, and tribal resource agency contacts.

Agency Contact (Check area of responsibility: Flows_X_, Water Quality _X_, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation _X_):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Christopher Balk, Regional Ecosystem Health Manager
Phone	315-785-2252
Email address	Christopher.balk@dec.ny.gov
Mailing Address	317 Washington Street, Watertown, NY 13601-3787

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Heidi Krahling, Environmental Review Specialist
Phone	518-402-8913
Email address	heidi.krahling@dec.ny.gov
Mailing Address	625 Broadway, Albany, NY 12233-4757

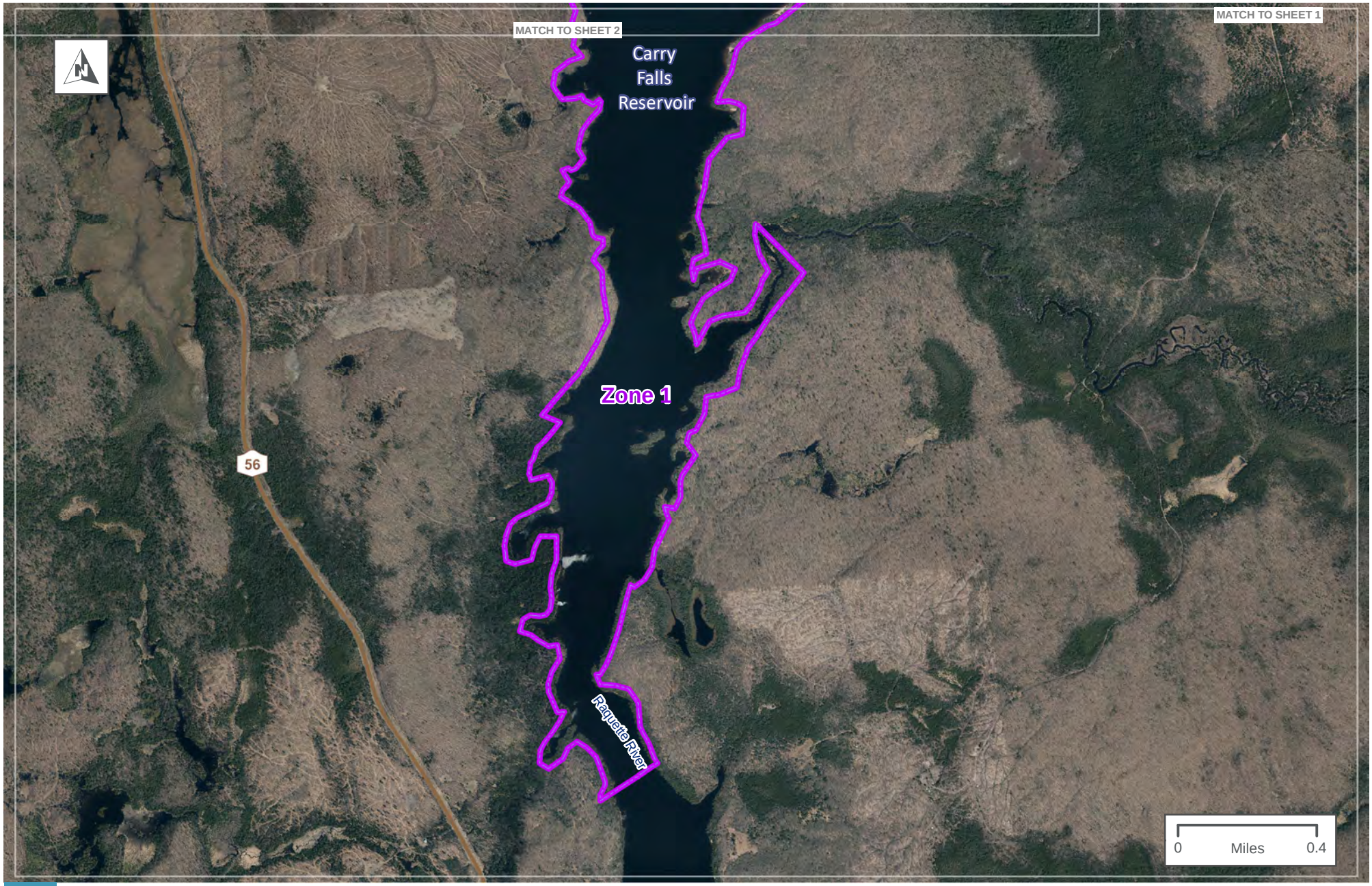
Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Robyn Niver, Endangered Species Biologist
Phone	607-753-9334
Email address	Robyn_Niver@fws.gov
Mailing Address	3817 Luker Road, Cortland, NY 13045

Agency Contact (Check area of responsibility: Flows_X_, Water Quality _X_, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. _X_, Cultural/Historic Resources __, Recreation __):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	John Wiley
Phone	607-753-9334
Email address	john_wiley@fws.gov
Mailing Address	3817 Luker Road, Cortland, NY 13045

Agency Contact (Check area of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources _X_, Recreation __):	
Agency Name	New York State Division for Historic Preservation
Name and Title	Michael Lynch, Division Director
Phone	518-237-8643
Email address	Michael.Lynch@parks.ny.gov
Mailing Address	Peebles Island State Park, P.O. Box 189, Waterford, NY 12188-0189

APPENDIX A

CARRY FALLS PROJECT AND UPPER RAQUETTE PROJECT ZONES OF EFFECT



Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

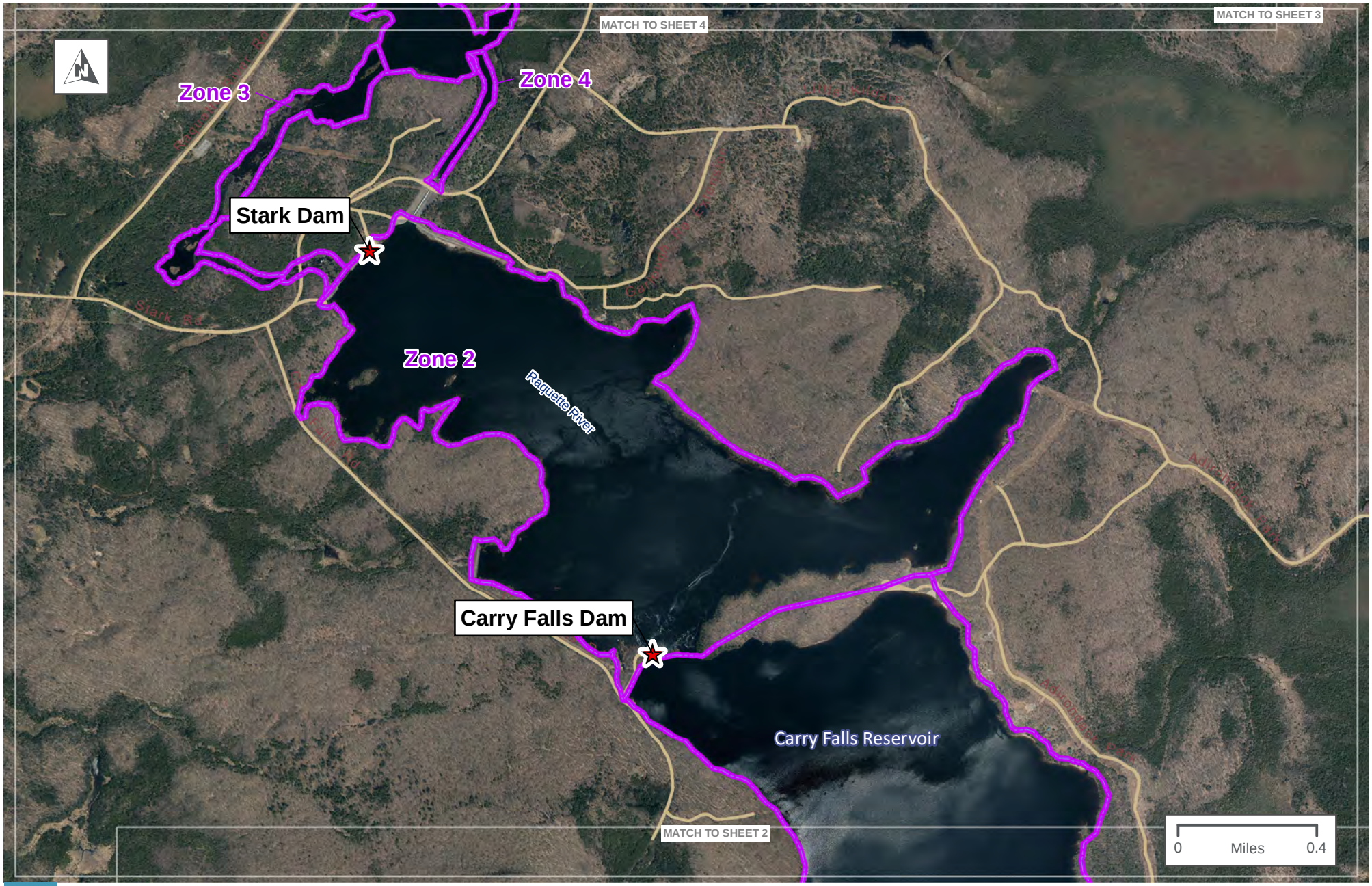
PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022

Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022



Brookfield

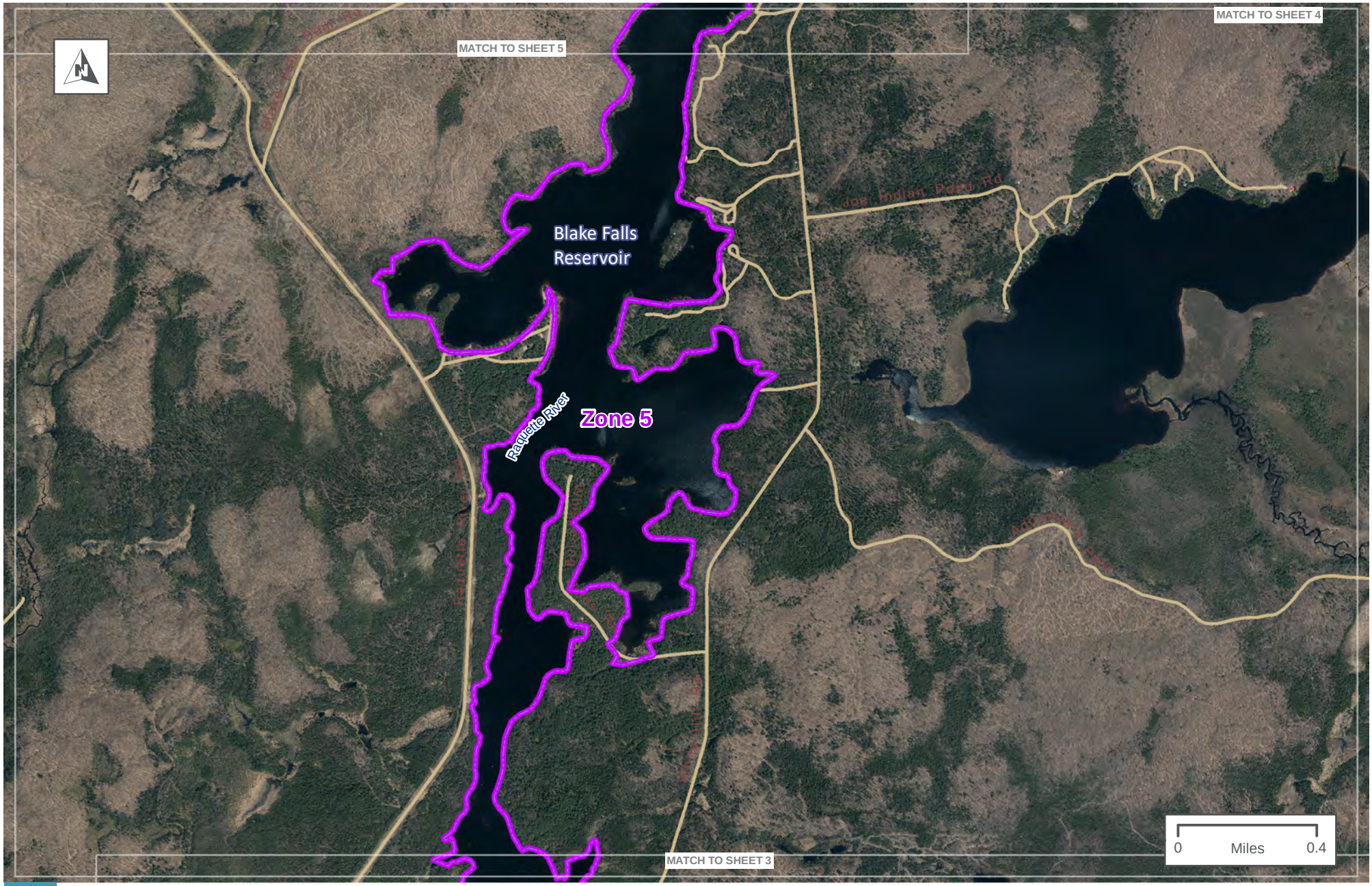
Project Dam

Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022



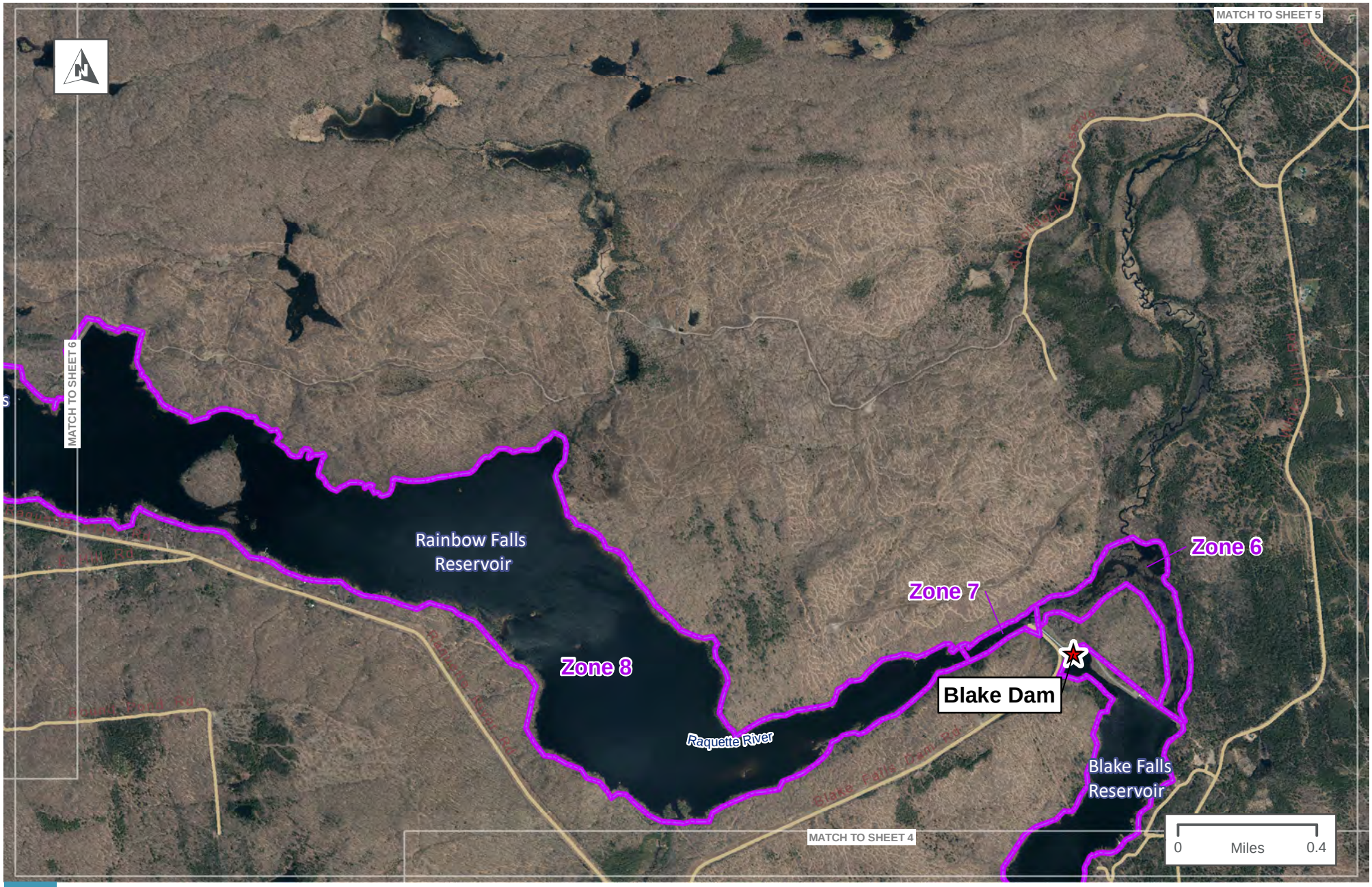
Brookfield

Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022



Brookfield

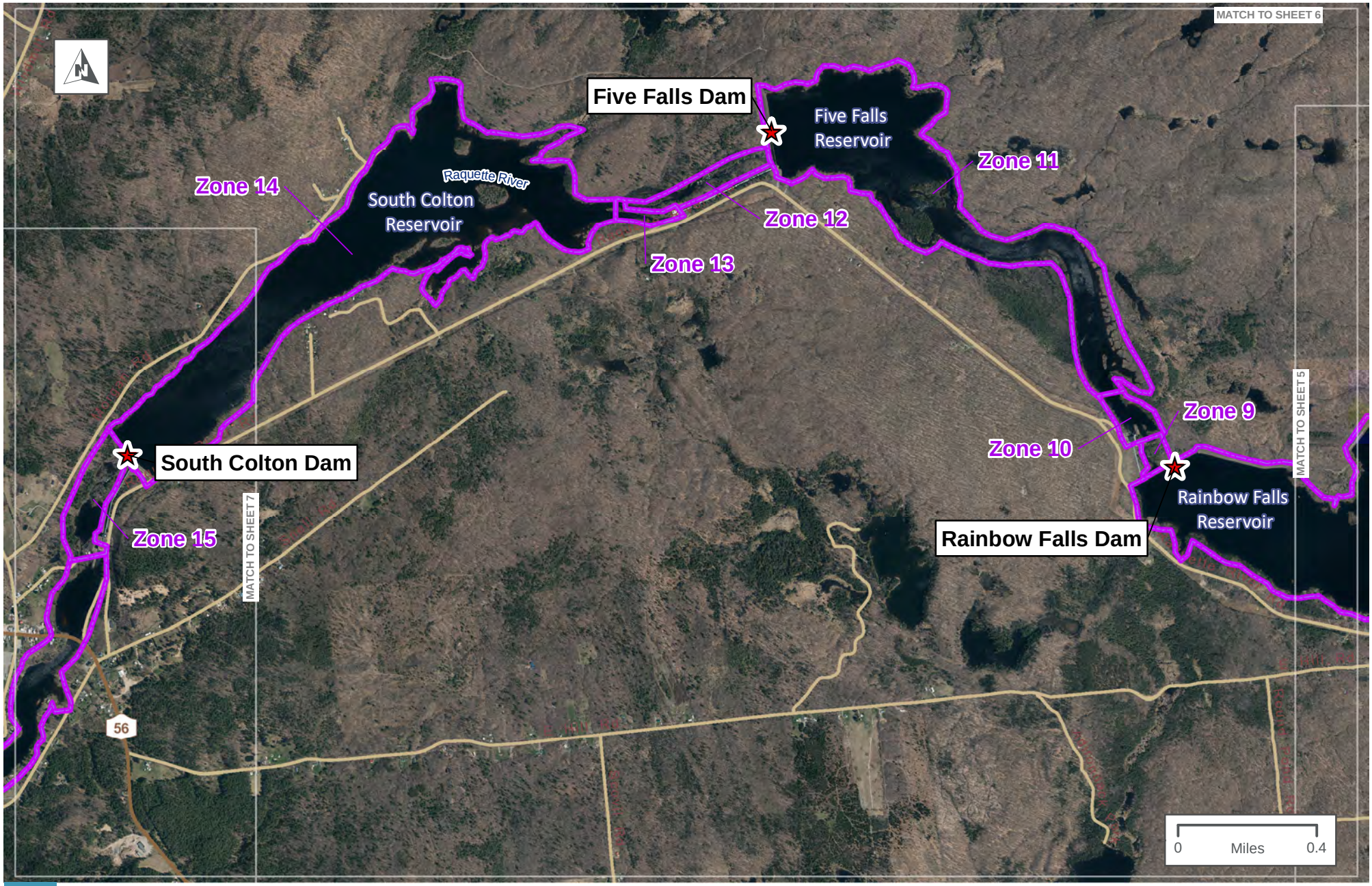
★ Project Dam

Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022



HDR Brookfield

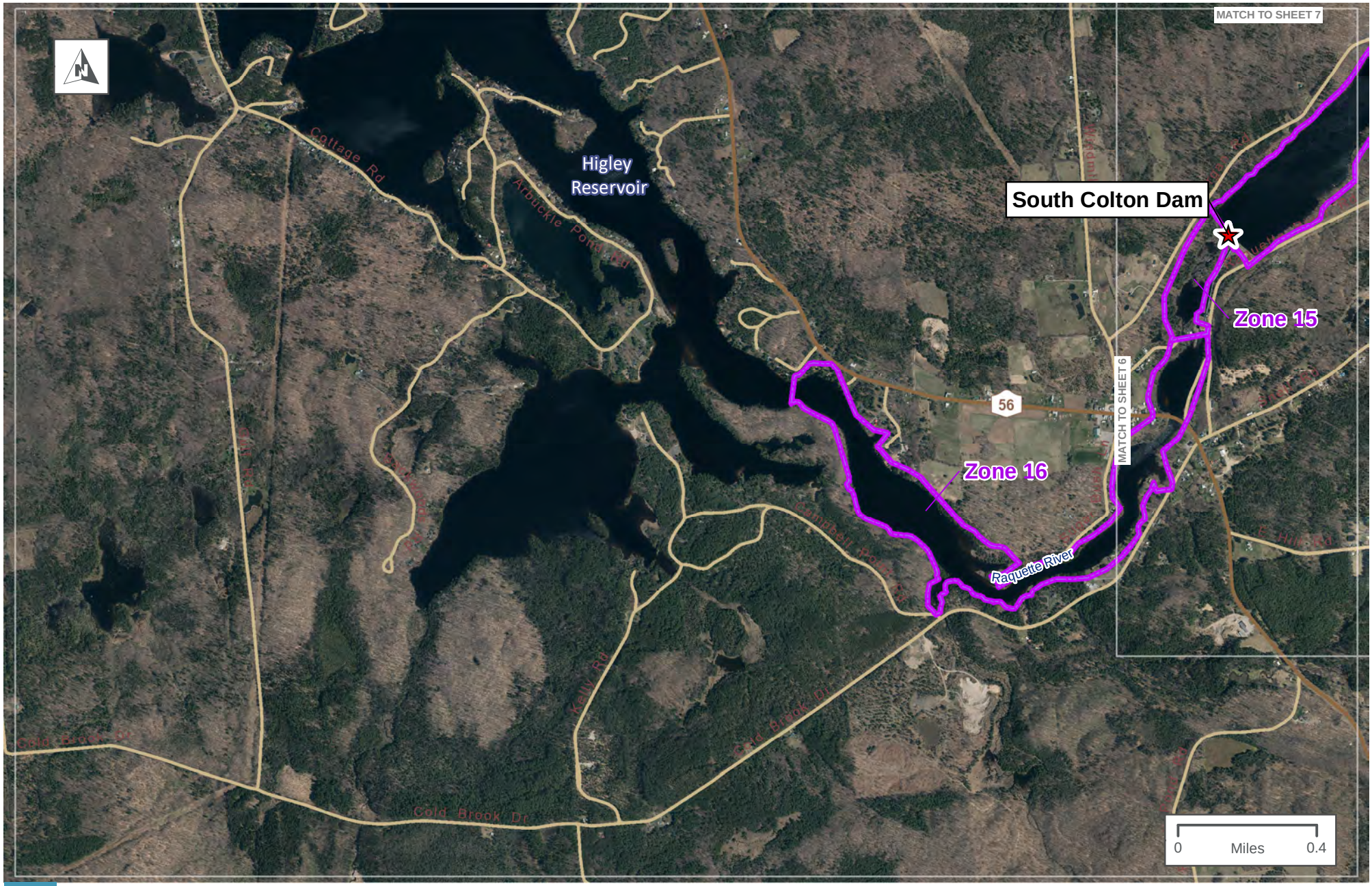
★ Project Dam

Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022



HDR Brookfield

★ Project Dam

▭ Zones of Effect

ZONES OF EFFECT

RAQUETTE RIVER PROJECT

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER_ZOE.MXD - USER: KAUSTIN - DATE: 4/4/2022

APPENDIX B

PHOTOS OF KEY PROJECT FEATURES

Carry Falls Dam

Carry Falls Dam

Carry Falls Gates

Carry Falls - Parmenter Campground

Carry Falls - Parmenter Campground

Carry Falls Boat Launch and Day Use Area

Stark Dam

Stark Penstock

Stark Powerhouse

Stark Boat Launch and Day Use Area

Blake Dam

Blake Minimum Flow Gate

Blake Penstock

Blake – McNeil Campground

Blake – McNeil Campground

Blake – McNeil Campground

Rainbow Dam

Rainbow Minimum Flow Gate

Rainbow Powerhouse

Rainbow Boat Launch

Five Falls Dam

Five Falls Minimum Flow

Five Falls Penstock

Five Falls Surge Tank

Five Falls Powerhouse

Five Falls Canoe Carry

South Colton Dam

South Colton Minimum Flow

South Colton Penstock

South Colton Powerhouse

South Colton Fishing Platform

APPENDIX C

PROJECT MAPS AND AERIALS

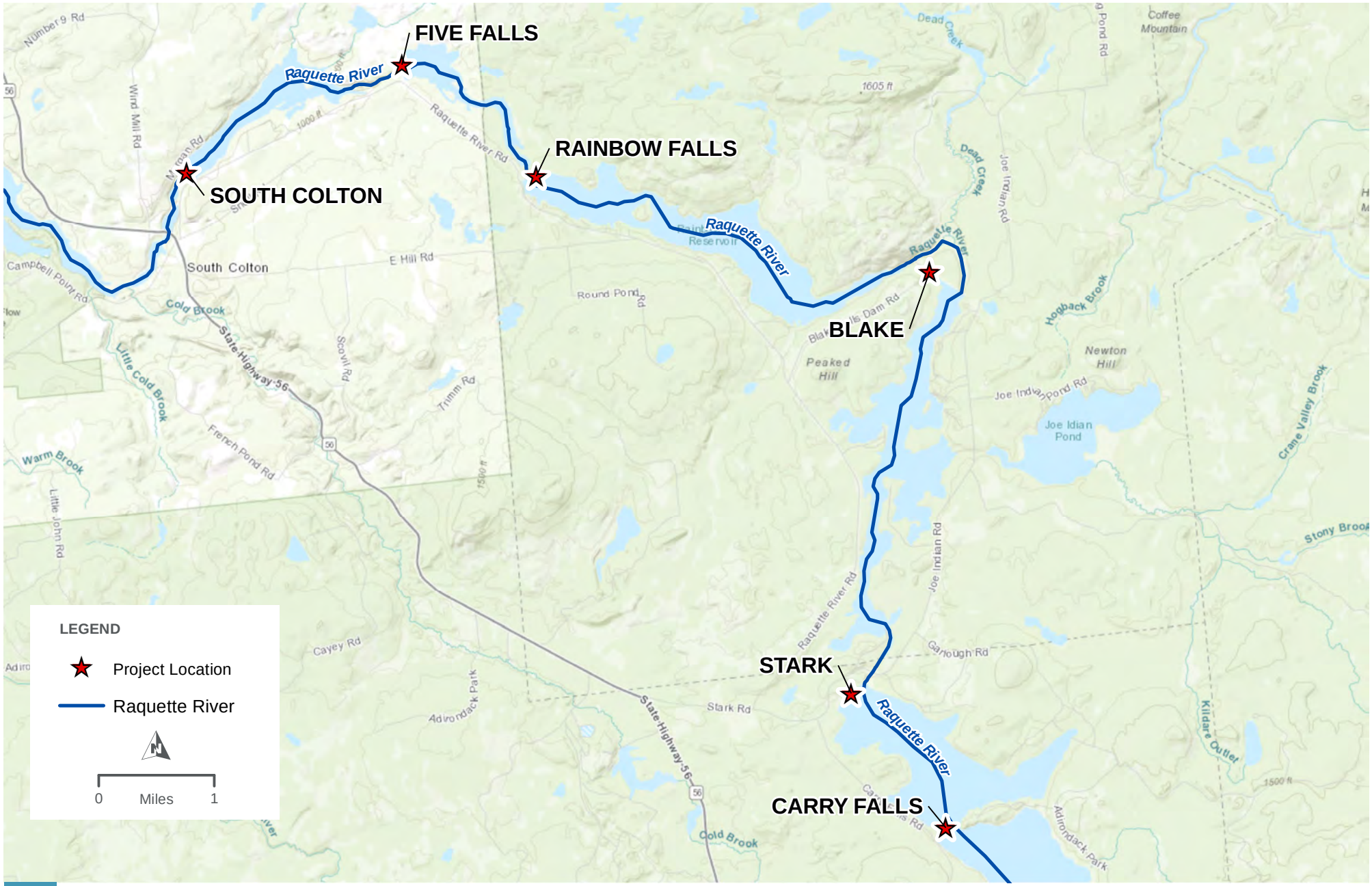
Brookfield

PROJECT LOCATION

RAQUETTE RIVER PROJECTS

FIGURE 1

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER LIHI LOCATION MAP.MXD - USER: KAUSTIN - DATE: 3/23/2022



Brookfield

PROJECT LOCATION

RAQUETTE RIVER PROJECT

FIGURE 1

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995 - EBH-UPPER RAQ LIHI RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER UPPER LIHI LOCATION MAP.MXD - USER: KAUSTIN - DATE: 3/23/2022

APPENDIX C - MAPS AND AERIAL PHOTOGRAPHS OF FACILITY AREA AND RIVER BASIN

APPENDIX C - MAPS AND AERIAL PHOTOGRAPHS OF FACILITY AREA AND RIVER BASIN

APPENDIX C - MAPS AND AERIAL PHOTOGRAPHS OF FACILITY AREA AND RIVER BASIN

APPENDIX C - MAPS AND AERIAL PHOTOGRAPHS OF FACILITY AREA AND RIVER BASIN

APPENDIX C - MAPS AND AERIAL PHOTOGRAPHS OF FACILITY AREA AND RIVER BASIN

APPENDIX D

401 WATER QUALITY CERTIFICATION CONSULTATION

March 18, 2022

Mr. Terry Tyoe
New York State Department of Environmental Conservation
Region 6 Permit Administrator
Dulles State Office Bldg.
317 Washington St.
Watertown, NY 13601-3787

Subject: **Carry Falls Project (FERC No. 2060)**
Upper Raquette River Hydroelectric Project (FERC No. 2084)
Low Impact Hydropower Institute Re-certification
Water Quality Certificate Verification

Dear Mr. Tyoe:

Erie Boulevard Hydropower, L.P. (Erie) is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Carry Falls Project (FERC No. 2060) and Upper Raquette River Project (FERC No. 2084). The Carry Falls Project is located on the Raquette River (RM 68) in St. Lawrence County, New York. The Upper Raquette River Project is located on the Raquette River in St. Lawrence County, New York and is comprised of five developments: Stark (RM 66), Blake (RM 62), Rainbow (RM 56), Five Falls (RM 54), and South Colton (RM 52). These developments use releases from the Carry Falls Project, which is a seasonal storage reservoir with no associated generating capacity.

Erie is requesting confirmation from the New York State Department of Environmental Conservation stating that the 401 Water Quality Certificate issued for the operation of the Carry Falls Project and Upper Raquette River Project on June 11, 1998 is still valid. Please provide this confirmation by reply to this letter via letter or email.

Erie would appreciate a response within 30 days of the date of this letter. Thank you in advance for your assistance, and if you have any questions, please do not hesitate to contact me at (518) 743-2095 or by email at Robert.Garrett@brookfieldrenewable.com.

Sincerely,

Bob Garrett
Compliance Specialist
New York Operations

Brookfield Renewable

399 Big Bay Road
Queensbury, NY 12804
www.brookfieldrenewable.com
Tel: 518.743.2091
Fax: 518.745.4292

Caley, Katherine

From: Balk, Christopher J (DEC) <christopher.balk@dec.ny.gov>
Sent: Wednesday, June 8, 2022 2:51 PM
To: Caley, Katherine
Cc: Garrett, Robert; Hart, Jessica J (DEC)
Subject: FW: Carry Falls (FERC No. 2060) and Upper Raquette River (FERC No. 2084) - Water Quality Certification Verification
Attachments: 2022_Upper Raquette and Carry Falls LIHI - 401 WQC Consultation Verification.pdf

Hi Katherine,
Apologies for my delayed response. Please be advised that our agency considers the 401 Water Quality certification for Carry Falls (FERC No. 2060) and Upper Raquette River (FERC No. 2084) to still be valid.

Best regards,

Christopher Balk
he/him/his
Regional Ecosystem Health Manager

New York State Department of Environmental Conservation
Region 6
317 Washington Street, Watertown, NY 13601
P: 315-785-2252 | Christopher.balk@dec.ny.gov
www.dec.ny.gov | | |

From: Hart, Jessica J (DEC) <jessica.hart@dec.ny.gov>
Sent: Monday, June 6, 2022 9:06 AM
To: Balk, Christopher J (DEC) <christopher.balk@dec.ny.gov>
Subject: FW: Carry Falls (FERC No. 2060) and Upper Raquette River (FERC No. 2084) - Water Quality Certification Verification

---

From: Caley, Katherine <Katherine.Caley@hdrinc.com>
Sent: Monday, June 6, 2022 9:00 AM
To: Hart, Jessica J (DEC) <jessica.hart@dec.ny.gov>
Subject: FW: Carry Falls (FERC No. 2060) and Upper Raquette River (FERC No. 2084) - Water Quality Certification Verification

Thank you for taking my call this morning. Attached the referenced request.

Katherine Caley, P.E. (NY)
D 315.414.2213 **M** 315.243.9183

hdrinc.com/follow-us

From: Caley, Katherine
Sent: Friday, March 18, 2022 1:23 PM
To: dep.r6@dec.ny.gov
Cc: Kirkpatrick, Sarah <Sarah.Kirkpatrick@hdrinc.com>; Maguire, Danny <Danny.Maguire@brookfieldrenewable.com>; Garrett, Robert <Robert.Garrett@brookfieldrenewable.com>; timothy.parker@brookfieldrenewable.com
Subject: Carry Falls (FERC No. 2060) and Upper Raquette River (FERC No. 2084) - Water Quality Certification Verification

Good Afternoon,

Erie Boulevard Hydropower, L.P. is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Carry Falls Project (FERC No. 2060) and Upper Raquette River Project (FERC No. 2084). Consistent with LIHI Handbook, the applicant is required to verify that the Water Quality Certificate is still valid if it is more than 10 years old. On behalf of Erie Boulevard, I am submitting the attached request for confirmation from the NYSDEC stating that the 401 Water Quality Certificate issued for the operation of the Carry Falls Project and Upper Raquette River Project on June 11, 1998 is still valid. A hardcopy has also been sent via U.S. Postal Service for your records.

Please let me know if you have any questions on the attached request. We respectfully request a response within 30 days of this letter to ensure a timely submittal of the re-certification application to LIHI.

Thank you,
Katherine

Katherine Caley, P.E. (NY)
Water Resources Engineer

HDR
1304 Buckley Road, Suite 202
Syracuse, New York 13212
D 315.414.2213 **M** 315.243.9183
Katherine.Caley@hdrinc.com

hdrinc.com/follow-us

APPENDIX E

RARE, THREATENED AND ENDANGERS SPECIES CONSULTATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 21, 2022
Project Code: 2022-0022184
Project Name: Upper Raquette River Project/ Carry Falls Project LIHI Recertification

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Project Code: 2022-0022184
Event Code: None
Project Name: Upper Raquette River Project/ Carry Falls Project LIHI Recertification
Project Type: Dam - Operations
Project Description: Erie Boulevard Hydropower, L.P. (Erie) is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Carry Falls Project (FERC No. 2060) and Upper Raquette River Project (FERC No. 2084), which expires on July 9 2022. The Carry Falls Project is located on the Raquette River (RM 68) in St. Lawrence County, New York. The Upper Raquette River Project is located on the Raquette River in St. Lawrence County, New York and is comprised of five developments: Stark (RM 66), Blake (RM 62), Rainbow (RM 56), Five Falls (RM 54), and South Colton (RM 52). These developments use releases from the Carry Falls Project, which is a seasonal storage reservoir with no associated generating capacity. Erie is looking for information regarding rare, threatened or endangered species that may occur in the project area. LIHI requires documentation of a finding of no negative effects or documentation that the facility is in compliance with relevant conditions in the species recovery plans.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.39704175,-74.72227182804038,14z

Counties: St. Lawrence County, New York

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	HDR, inc
Name:	Sarah Kirkpatrick
Address:	1304 Buckley Road
Address Line 2:	Suite 202
City:	Syracuse
State:	NY
Zip:	13212
Email	sarah.kirkpatrick@hdrinc.com
Phone:	3154142231

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 21, 2022
Project Code: 2022-0022191
Project Name: Upper Raquette River Project/ Carry Falls Project LIHI Recertification

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Project Code: 2022-0022191
Event Code: None
Project Name: Upper Raquette River Project/ Carry Falls Project LIHI Recertification
Project Type: Dam - Operations
Project Description: Erie Boulevard Hydropower, L.P. (Erie) is applying for Low Impact Hydropower Institute (LIHI) re-certification for the Carry Falls Project (FERC No. 2060) and Upper Raquette River Project (FERC No. 2084), which expires on July 9 2022. The Carry Falls Project is located on the Raquette River (RM 68) in St. Lawrence County, New York. The Upper Raquette River Project is located on the Raquette River in St. Lawrence County, New York and is comprised of five developments: Stark (RM 66), Blake (RM 62), Rainbow (RM 56), Five Falls (RM 54), and South Colton (RM 52). These developments use releases from the Carry Falls Project, which is a seasonal storage reservoir with no associated generating capacity. Erie is looking for information regarding rare, threatened or endangered species that may occur in the project area. LIHI requires documentation of a finding of no negative effects or documentation that the facility is in compliance with relevant conditions in the species recovery plans.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.484084300000006,-74.75733871246648,14z

Counties: St. Lawrence County, New York

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	HDR, inc
Name:	Sarah Kirkpatrick
Address:	1304 Buckley Road
Address Line 2:	Suite 202
City:	Syracuse
State:	NY
Zip:	13212
Email	sarah.kirkpatrick@hdrinc.com
Phone:	3154142231

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

May 16, 2022

Sarah Kirkpatrick
HDR, Inc
1304 Buckley Road
Syracuse, NY 13212

Re: Upper Raquette/Carry Falls Hydroelectric Projects LIHI recertification
County: St Lawrence Town/City: Colton, Parishville

Dear Sarah Kirkpatrick:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 6 Office, Division of Environmental Permits, at dep.r6@dec.ny.gov.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

The following state-listed animals have been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 6 Office at dep.r6@dec.ny.gov, (315) 785-2245.

The following species has been documented nesting at 3 locations within 150 yards of the project site north of Stark Falls Reservoir.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Bald Eagle *Breeding*	*Haliaeetus leucocephalus*	Threatened		7823

The following species has been documented within 1 mile of the Blake Falls Reservoir. Individual animals may travel 1.2 miles from documented locations.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Spruce Grouse	*Falcipennis canadensis*	Endangered		7365

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

New York Natural Heritage Program

Report on Rare Animals, Rare Plants, and Significant Natural Communities

The following rare plants, rare animals, and significant natural communities have been documented at the project site, or in its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine whether a species currently occurs at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following animals, while not listed by New York State as Endangered or Threatened, are rare in New York and are of conservation concern. They have been documented at the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Birds			
Common Loon	*Gavia immer*	Special Concern	
Breeding			

Rainbow Falls Reservoir, 2004: The loons were observed on a lake created by a dam on the west end. 217

Stark Falls Reservoir, 1985-08-15: A lake created by a dam. 8015

Fish			
Bridle Shiner	*Notropis bifrenatus*	Unlisted	Imperiled in NYS and Globally Uncommon

Carry Falls Reservoir and Stark Falls Reservoir. 2008-07-10. 15230

Five Falls Reservoir, 1995-08-23. 15276

The following plant is listed as Endangered in New York State, and so is a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Vascular Plants			
Northern Clustered Sedge	*Carex arcta*	Endangered	Critically Imperiled in NYS

Documented adjacent to the project site near the mouth of the Jordan River. 2017-08-30. The meadow seems to be occasionally flooded by the Raquette River and dam control. The plant was growing in the floodplain and perhaps closer to the slope heading up to the forest edge. 17302

The following natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME *HERITAGE CONSERVATION STATUS*

Upland/Terrestrial Communities

Beech-Maple Mesic Forest High Quality Occurrence of Uncommon Community Type

Documented within 1/4 mile south of Carry Falls Reservoir. This is a moderate-sized, mature beech-maple mesic forest with good species diversity embedded within a large, intact landscape. The forest is a mix of mature forest with large areas of old growth and young to moderate aged stands that are recovering from past logging. 4001

Wetland/Aquatic Communities

Spruce-Fir Swamp High Quality Occurrence of Uncommon Community Type

Documented within 1/3 mile east of Stark Falls Reservoir. Little Kildare Forest: This is a moderately large, intact example with very good diversity, in a large recovering, selectively logged, forested landscape. 4283

Dwarf Shrub Bog High Quality Occurrence of Uncommon Community Type

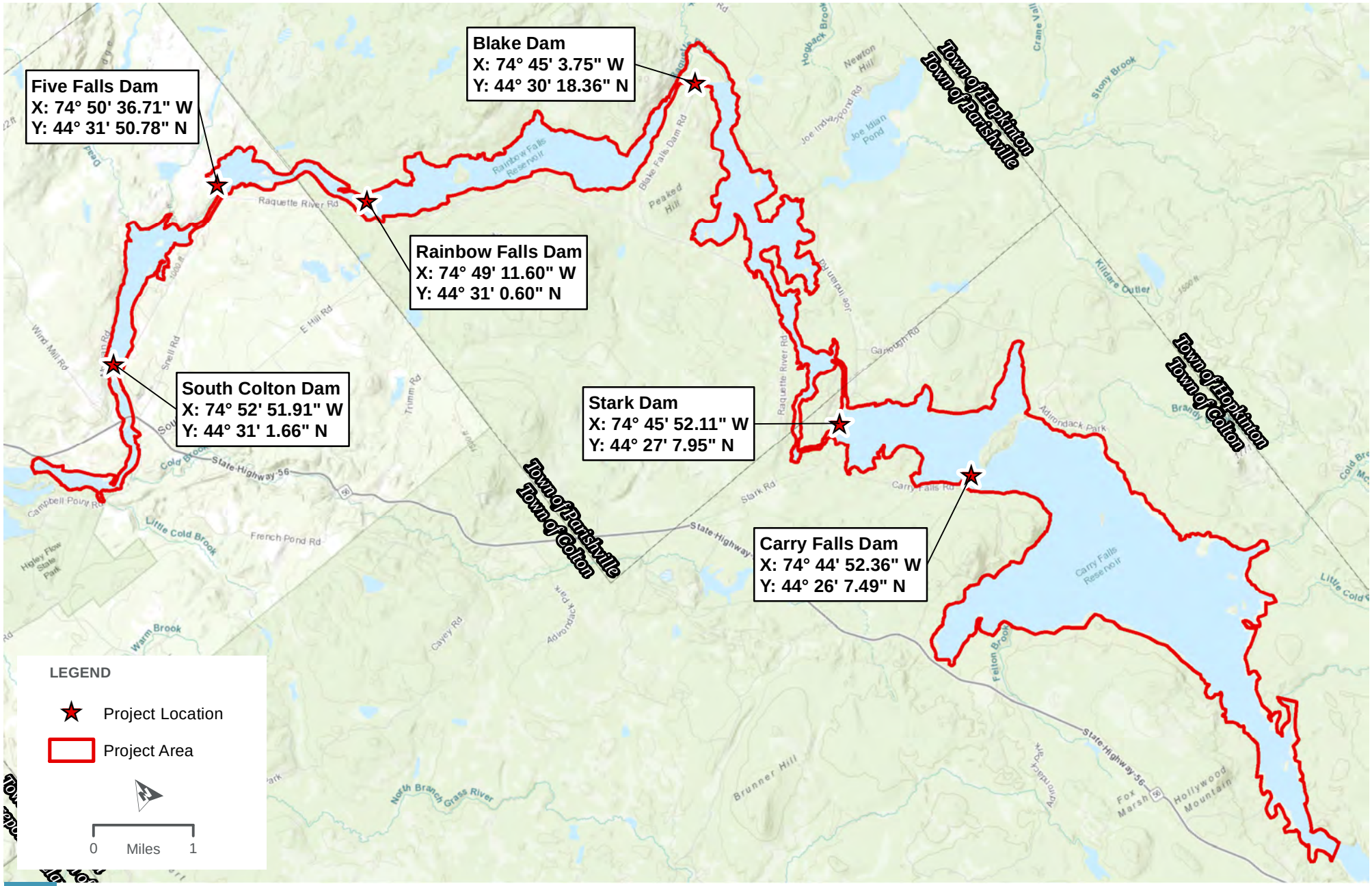
Documented within 1/2 mile east of Stark Falls Reservoir. Little Kildare Forest: This is a moderately large, intact example with very good diversity, surrounded by undisturbed forested wetlands. 6933

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/29384.html for Ecological Communities of New York State.



HDR Brookfield

PROJECT AREA

RAQUETTE RIVER PROJECT

FIGURE 1

PATH: \\SYR-SRV01\GIS\PROJECTS\BROOKFIELD\10338995_EBH_UPPERRAQ_LIHI_RECERT\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\DRAFT\RAQUETTE RIVER UPPER LIHI PROJECT BOUNDARY MAP.MXD - USER: KAUSTIN - DATE: 3/28/2022