

# **LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION**

## **LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT (FERC NO. 2330)**



*Prepared for:*

**Brookfield Renewable**

*Prepared by:*



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# **LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION**

## **LOWER RAQUETTE STREET HYDROELECTRIC PROJECT (FERC NO. 2330)**

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# LOW-IMPACT HYDROPOWER POWER INSTITUTE CERTIFICATION APPLICATION

## LOWER RAQUETTE HYDROELECTRIC PROJECT (FERC NO. 2330)

### **1.0 FACILITY DESCRIPTION**

The Lower Raquette River Hydroelectric Project (LRRP), Federal Energy Regulatory Commission (FERC) No. 2330, is owned and operated by Erie Boulevard Hydro, L.P. (Erie) and is located along the Raquette River, beginning near Norwood, New York. The four developments (Norwood, East Norfolk, Norfolk, and Raymondville) are all located in an 8-mile reach of the river (RM 27 to RM 19) above its confluence with the St. Lawrence River. From its source in the Adirondack Mountains in New York, the Raquette River flows generally northwest and has a mainstem of 146 miles. The Raquette River drains an area that is approximately 1,253 square miles in size. The river is the source for 27 hydroelectric plants along its entire length.

### **1.1 PROJECT DESCRIPTION**

The LRRP consists of the following four developments on the Raquette River: Norwood, East Norfolk, Norfolk, and Raymondville. The Norwood development is 27 river miles and Raymondville development are 19 miles, respectively, above the Raquette River's confluence with the St. Lawrence River, with the East Norfolk and Norfolk developments located between these upstream and downstream developments. Erie's Yaleville Project (FERC No. 9222) is located between the Norwood and East Norfolk developments. Total installed capacity of the LRRP is 14,080 megawatts (MW) with a total hydraulic capacity of 6,625 cfs.

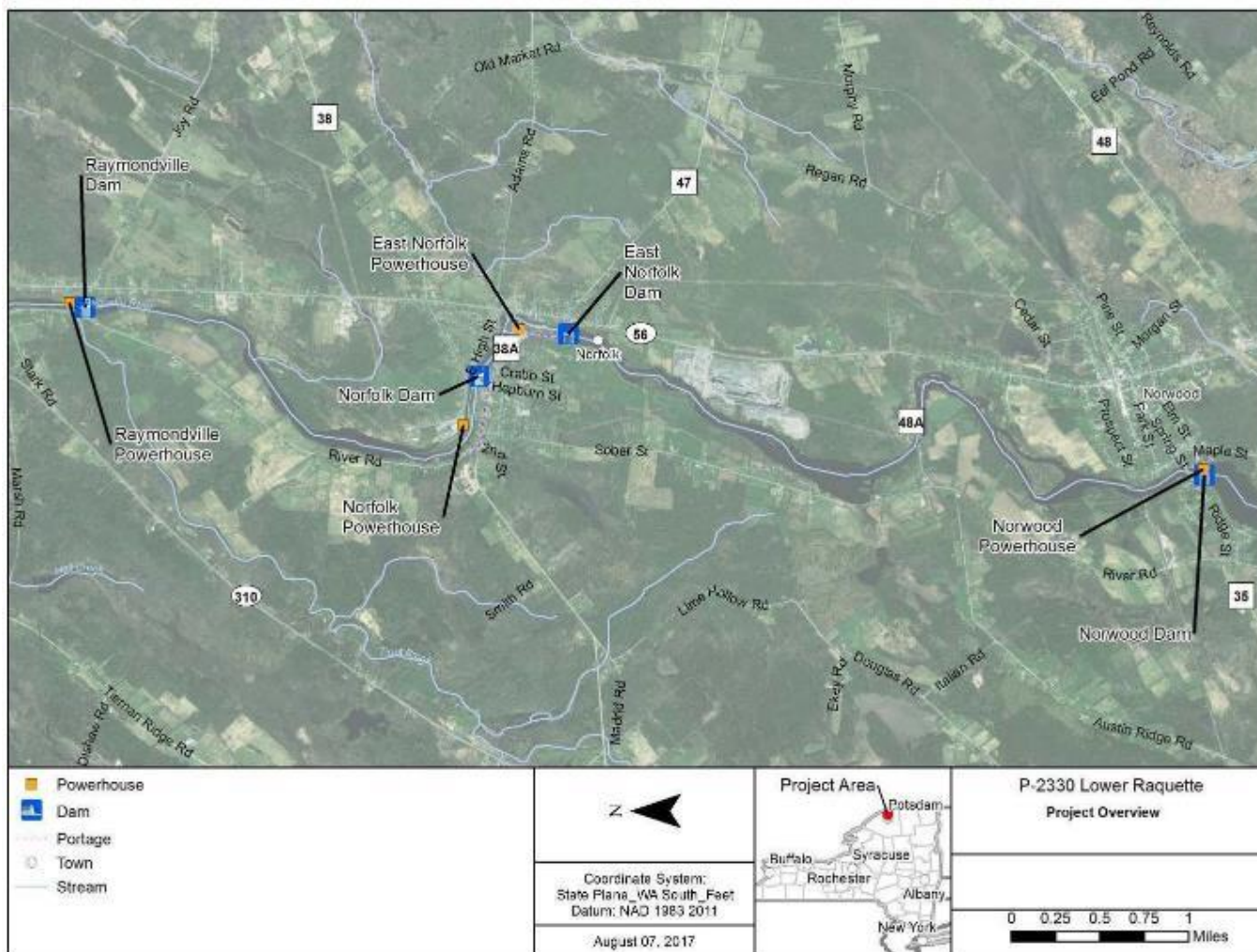
**Norwood** - Consists of a 24-foot-high by 188-foot-long dam with 1-foot-high wooden flashboards, a 350-acre reservoir, a gated concrete intake structure with trashracks and a log chute, a powerhouse containing a 2,000-kilowatt (kW) generating unit, a 3-mile-long transmission line, and appurtenant facilities.

**East Norfolk** - Consists of a 16-foot-high by 241-foot-long dam with a 135-acre reservoir, a concrete intake structure with trashracks, a 1,398-foot-long flume (power canal), a powerhouse containing a 3,920-kilowatt (kW) generating unit, a 0.86-mile-long transmission line, and appurtenant facilities.

**Norfolk** - Consists of a 20-foot-high dam with 10-inch-high flashboards, headworks gates, two 9-foot by 9-foot sluice gates, a 10-acre reservoir, a 1,275-foot-long power canal, a 700-foot-long wood stave pipeline, a 103-foot-long steel penstock, a gated concrete intake structure with trashracks, a powerhouse containing a 5,620-kilowatt (kW) generating unit, and appurtenant facilities.

**Raymondville** - Consists of a 17-foot-high dam with 2-foot-high flashboards, a 50-acre reservoir, a 447-foot-long concrete flume (power canal) with trashracks, an ice chute and gates, a powerhouse containing a 2,540-kilowatt (kW) generating unit, a 2.32-mile-long transmission line, and appurtenant facilities.





**FIGURE 1: Overview of Lower Raquette Hydroelectric Project Locations**

## 1.2 PROJECT OPERATIONS

The LRRP developments are operated as a run-of-river facilities. When the LRRP developments are not operating, all flows are spilled from the dam.

For the protection of LRRP bypass reaches, Erie provides a year-round aquatic habitat minimum flow, or inflow, whichever is less. These minimum flows are used to enhance the aesthetics and aquatic habitats of the LRRP area.

## 1.3 REGULATORY AND COMPLIANCE HISTORY

Since issuance of the 2014 LIHI Certification for the Lower Raquette River Project, the following notable actions have occurred as documented within the FERC e-library:

- On November 13, 2015, FERC issued a letter informing Erie that base flow deviations would be considered violations (see Appendix G for full correspondence)<sup>1</sup>
- On August 19, 2016, Erie filed a potential base flow excursion report for a deviation at the Raymondville facility on July 19, 2016<sup>2</sup>
- On October 18, 2019, Erie filed a potential base flow excursion report for a deviation at the Raymondville facility on October 8, 2016<sup>3</sup>
- On December 15, 2016, Erie filed a potential base flow excursion report for a deviation at the Raymondville facility on November 24, 2016<sup>4</sup>
- On June 15, 2018, Erie filed a potential base flow excursion report for a deviation at the Raymondville facility on June 10, 2018<sup>5</sup>
- On July 20, 2018, Erie filed a potential base flow excursion report for a deviation at the Raymondville facility on July 14, 2018<sup>6</sup>
- On March 21, 2019, Erie filed the most recent (2019) Dam Safety Surveillance and Monitoring Report<sup>7</sup>

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<sup>1</sup> [20151113-3003](#)

<sup>2</sup> [20160819-5108](#)

<sup>3</sup> [20161018-5161](#)

<sup>4</sup> [20161215-5219](#)

<sup>5</sup> [20180615-5138](#)

<sup>6</sup> [20180720-5077](#)

<sup>7</sup> [20190321-3130](#) (CEII eLibrary document)

#### 1.4 LOWER RAQUETTE FACILITY DESCRIPTION INFORMATION (LIHI CERTIFICATE #14C)

**TABLE 1. FACILITY DESCRIPTION INFORMATION FOR LOWER RAQUETTE HYDROELECTRIC PROJECT (LIHI #14C)**

<i>Information Type</i>	<i>Variable Description</i>	<i>Response (and reference to further details)</i>
<b><i>Name of the Facility</i></b>	Facility name (use FERC project name if possible)	Lower Raquette Hydroelectric Project (FERC No. 2330) referred to as the “LRRP” throughout this application.
<b><i>Location</i></b>	River name (USGS proper name)	Raquette River
	River basin name	Raquette River Drainage Basin
	Nearest town, county, and state	Norwood, New York; Norfolk, NY; and Raymondville, NY
	River mile of dam above next major river	The LRRP is located at RM 27 through RM 19 on the Raquette River.
	Geographic latitude	Norwood (44°44'36"N) East Norfolk (44°47'41"N) Norfolk (44°48'8"N) Raymondville (44°50'2"N)
	Geographic longitude	Norwood (-75°0'19"W) East Norfolk (-74°59'11"W) Norfolk (-74°59'26"N) Raymondville (-74°58'50"N)
<b><i>Facility Owner</i></b>	Application contact names:	Daniel Maguire P.E., Compliance Manager, Brookfield Renewable
	Facility owner (individual and company names)	Erie Boulevard Hydro, L.P, a subsidiary of Brookfield Renewable, 184 Elm Street, Potsdam NY 13676
	Operating affiliate (if different from owner)	N/A
	Representative in LIHI certification	Jot Splenda Louis Berger – WSP 1001 Wade Ave # 400, Raleigh, NC 27605
<b><i>Regulatory Status</i></b>	FERC Project Number, issuance and expiration dates	Project No. 2330 Issued: 2/13/2002 (30 years) Expires: 12/31/2033
	FERC license type or special classification	Major

	Water Quality Certificate identifier and issuance date, plus source agency name	A Water Quality Certificate (WQ-6-4099-00006/0001) was issued by the New York Department of Environmental Conservation on October 13, 2006 (Appendix C).
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	<a href="#">2002 FERC License</a> <a href="#">WQC</a>
<b><i>Power Plant Characteristics</i></b>	Date of initial operation (past or future for operational applications)	The LRRP developments were constructed in 1928. All four developments were updated (powerhouse capacity) from 2006 through 2007.
	Total name-plate capacity (MW)	14,080 MW
	Average annual generation (MWh)	102,520 MWh
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	Each powerhouse contains one vertical Kaplan turbine manufactured by American Hydro. Total installed capacity of the LRRP is 14 MW.  Norwood (2.0 MW, min capacity 1,500 cfs, max capacity 1,580 cfs) Generator (1) – GE (2,500 kVA, 0.8 PF) East Norfolk (3.9 MW, min capacity 1,412 cfs, max capacity 1,635 cfs) Generator (1) – GE (3,750 kVA, 0.8 PF) Norfolk (5.6 MW, min capacity 1,350 cfs, max capacity 1,770 cfs) Generator (1) – GE (5,625 kVA, 0.8 PF) Raymondville (2.5 MW, min capacity 1,528 cfs, max capacity 1,640 cfs) Generator (1) – GE (2,500 kVA, 0.8 PF)
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	Run-of-River
	Dates and types of major equipment upgrades	From 2006 through 2007 each powerhouse turbine was updated and increased in capacity.
	Dates, purpose, and type of any recent operational changes	No major operational changes have occurred at the Project since the 2006-2007 powerhouse upgrades.

	Plans, authorization, and regulatory activities for any facility upgrades	No major facility upgrades are planned in the near future.
<b><i>Characteristics of Dam, Diversion, or Conduit</i></b>	Date of construction	All four LRRP developments were built in 1928.
	Dam height	Norwood (24 feet) East Norfolk (16 feet) Norfolk (20 feet) Raymondville (17 feet)
	Spillway length and elevation	Norwood (188-feet-long; fixed crest elevation of 326.1 feet mean sea level (msl) + 1-foot-high wooden flashboard)  East Norfolk (241-feet-long; crest elevation of 287.9 feet msl)  Norfolk (380-feet-long; crest elevation of 254.1 feet msl)  Raymondville (292.5-feet-long; fixed crest elevation of 209.6 feet msl + 2-foot-high rubber and steel flashboard system)

<b>Information Type</b>	<b>Variable Description</b>	<b>Response (and reference to further details)</b>
	Tailwater elevation	Norwood (306.5 feet msl) East Norfolk (256.2 feet msl) Norfolk (212.8 feet msl) Raymondville (190 feet msl)
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	Norwood (71.3-foot-wide concrete intake)  East Norfolk (Concrete Intake; 1,398-foot-long power flume)  Norfolk (103-foot-long steel penstock; 1,275-foot-long power canal)  Raymondville (Intake; 447-foot-long concrete power flume)
	Dates and types of major, generation- related infrastructure improvements	Between 2006 and 2007 Erie upgraded each powerhouse to have increased capacity (see LRRP description)
	Designated facility purposes	The purpose of this facility is to generate power to be supplied to the local grid.
	Water source	Raquette River
	Water discharge location or facility	Water utilized by each LRRP discharges directly into the waters of the Raquette River directly below each development powerhouse.
	Gross volume	Norwood (1,900 acre-feet) East Norfolk (360 acre-feet) Norfolk (35 acre-feet) Raymondville (264 acre-feet)
<b>Characteristics of Reservoir and Watershed</b>	Surface area at full pool	Norwood (350 acres) East Norfolk (135 acres) Norfolk (10 acres) Raymondville (50 acres)
	Maximum water surface elevation (ft. MSL)	Norwood (327.1 feet msl) East Norfolk (287.9 feet msl) Norfolk (254.9 feet msl) Raymondville (211.6 feet msl)
	Maximum and minimum volume and water surface elevations for designated power pool, if available	This is a run-of-river Project. No power pool available.

	<p>Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile</p>	<p>Upstream Dam: Unionville Project Owner: Erie FERC No.: 2499 River Mile (RM): 31 Status: In Service</p> <p>Downstream Dam: Yaleville Project Owner: Erie FERC No.: 9222 RM: 25 Status: In Service</p> <p>Updated Raquette River dam information comes from New York DEC Natural Resources and Environmental Protection Maps: <a href="https://www.dec.ny.gov/pubs/103459.html">https://www.dec.ny.gov/pubs/103459.html</a></p>
	<p>Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation</p>	<p>Under the existing license the LRRP developments were operated in a store and release pulsing or store and release peaking mode. The 2006 amendment to license (capacity) resulted in the change of operation at all LRRP developments to run-of-river.</p>
	<p>Area inside FERC project boundary, where appropriate</p>	<p>2,135.7 acres, approximately</p>



<b>Hydrologic Setting</b>	Average annual flow at the development dams (prorated for dam location)	Norwood (2,021 cfs) East Norfolk (2,056 cfs) Norfolk (2,061 cfs) Raymondville (2,083 cfs)	
	Average monthly flows of Raquette River at Raymondville, NY  <a href="#">USGS Gage 04268000</a>	Annual Monthly Mean for the period 1943 through 2018:	January – 2,170 cfs February – 2,050 cfs March – 2,680 cfs April – 3,990 cfs May – 3,620 cfs June – 2,100 cfs July – 1,490 cfs August – 1,290 cfs September – 1,270 cfs October – 1,600 cfs November – 1,990 cfs December – 2,090 cfs

	Location and name of relevant stream gauging stations above and below the facility <sup>8</sup>	USGS Gage 04268000 is located at:  Lat 44°50'20", long 74°58'44", St. Lawrence County, NY, Hydrologic Unit 04150305, on right bank 250 ft upstream from bridge on Grant Road at Raymondville, 0.3 mi downstream from Trout Brook, 0.4 mi downstream from Raymondville powerhouse, and 18.0 mi upstream from mouth.	
	Watershed area at the dam	Norwood (1,045 square miles) East Norfolk (1,063 square miles) Norfolk (1,066 square miles) Raymondville (1,077 square miles)	
	Number of zones of effect (Upstream to Downstream)	<b>Norwood Development</b> Impoundment ZOE Downstream ZOE  <b>East Norfolk Development</b>	

<sup>8</sup> The Piercefield gage sits at the top of the Raquette River system. This gage is used to estimate inflows to the Carry Falls development, which acts as a storage reservoir for the rest of the Raquette River. Flows are then re-regulated at the Higley development (part of the Middle Raquette Project). Outflows from the Higley development eventually arrive to the Lower Raquette facilities, and the Raymondville Gage confirms the outflows coming from the most downstream facility on the Raquette River (Raymondville). The Piercefield gage is used to estimate inflows/outflows and declare flow regimes for the entire system.

		<p>Impoundment ZOE Bypass ZOE Downstream ZOE</p> <p><b>Norfolk Development</b> Impoundment ZOE Bypass ZOE Downstream ZOE</p> <p><b>Raymondville Development</b> Impoundment ZOE Bypass ZOE Downstream ZOE</p>
		See Appendix A for a depiction of Project ZOE's.
<i><b>Designated Zones of Effect</b></i>	Upstream and downstream locations by river miles	<p><b>Norwood Development</b></p> <p>Zone 1 Impoundment ZOE: RM 31 (Unionville Dam) to RM 27 (Norwood Dam)</p> <p>Zone 2 Downstream ZOE: RM 27 (Norwood Dam) to RM 25 (Yaleville Dam)</p> <p><b>East Norfolk Development</b></p> <p>Zone 1 Impoundment ZOE: RM 25 (Yaleville Dam) to RM 22.8 (East Norfolk Dam)</p> <p>Zone 2 Bypass ZOE: RM 22.8 (East Norfolk Dam) to RM 22.4 (East Norfolk powerhouse tailrace)</p> <p>Zone 3 Downstream ZOE: RM 22.4 (East Norfolk powerhouse tailrace) to RM 22.1 (Norfolk Dam)</p> <p><b>Norfolk Development</b></p> <p>Zone 1 Impoundment ZOE: RM 22.4 (East Norfolk powerhouse tailrace) to RM 22.1 (Norfolk Dam)</p> <p>Zone 2 Bypass ZOE: RM 22.1 (Norfolk Dam) to RM 21.8 (Norfolk powerhouse tailrace)</p> <p>Zone 3 Downstream ZOE: RM 21.8 (Norfolk powerhouse tailrace) to RM 19 (Raymondville Dam)</p> <p><b>Raymondville Development</b></p>

		<p>Zone 1 Impoundment ZOE: RM 21.8 (Norfolk powerhouse tailrace) to RM 19 (Raymondville Dam)</p> <p>Zone 2 Bypass ZOE: RM 19 (Raymondville Dam) to RM 18.9 (Raymondville powerhouse tailrace)</p> <p>Zone 3 Downstream ZOE: RM 18.9 (Raymondville powerhouse tailrace to RM 17</p>
	Type of waterbody (river, impoundment, bypassed reach, etc.)	<p>According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory<sup>9</sup>, the Impoundment ZOEs are classified as lake areas, the Bypass Reach ZOEs and downstream ZOEs are classified as a riverine areas.</p>
	Delimiting structures	<p><b>Norwood Development</b></p> <p>Impoundment ZOE: RM 31 (Unionville Dam) to RM 27 (Norwood Dam)</p> <p>Downstream ZOE: RM 27 (Norwood Dam) to RM 25 (Yaleville Dam)</p> <p><b>East Norfolk Development</b></p> <p>Impoundment ZOE: RM 25 (Yaleville Dam) to RM 22.8 (East Norfolk Dam)</p> <p>Bypass ZOE and Downstream ZOE: RM 22.8 (East Norfolk Dam) to RM 22.1 (Norfolk Dam)</p> <p><b>Norfolk Development</b></p> <p>Impoundment ZOE: RM 22.8 (East Norfolk Dam) to RM 22.1 (Norfolk Dam)</p> <p>Bypass ZOE and Downstream ZOE: RM 22.1 (Norfolk Dam) to RM 19 (Raymondville Dam)</p> <p><b>Raymondville Development</b></p> <p>Impoundment ZOE: RM 22.1 (Norfolk Dam) to RM 19 (Raymondville Dam)</p> <p>Bypass ZOE and Downstream ZOE: RM 19</p>

<sup>9</sup> <https://www.fws.gov/wetlands/>

		(Raymondville Dam) to RM 0 (Confluence with St. Lawrence River)
	Designated uses by state water quality agency	<p>New York Department of Environmental Conservation designates waters in the Raquette River near the LRRP watershed as Class C fresh surface waters.</p> <p>Class C fresh surface waters of New York are managed to achieve and maintain a level of quality that fully supports the following designated uses: aquatic biota, wildlife, aquatic habitat, swimming and other primary contact recreation, boating, fishing, and other recreational uses.<sup>10</sup></p>
<b><i>Information Type</i></b>	<b><i>Variable Description</i></b>	<b><i>Response (and reference to further details)</i></b>
<b><i>Additional Contact Information</i></b>	Names, addresses, phone numbers, and e- mail for local state and federal resource agencies	Please see section 4.0 for the Project Contacts Form
	Names, addresses, phone numbers, and e- mail for local non- governmental stakeholders	Please see section 4.0 for the Project Contacts Form
<b><i>Photographs and Maps</i></b>	Photographs of key features of the facility and each of the designated zones of effect	Please see Appendix A for photographs of key features of the facility and identification of each designated ZOE, and for project drawings.
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	Please see Appendix B for aerial photos of facility area and river basin.

<sup>10</sup> <https://www.dec.ny.gov/chemical/23853.html>

## **2.0 STANDARDS MATRICES**

### **2.1 Norwood Development**

#### **Impoundment ZOE**

<b>Criterion</b>		<b>Alternative Standards</b>				
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Plus</b>
A.	<b>Ecological Flow Regimes</b>	<b>X</b>				
B.	<b>Water Quality</b>		<b>X</b>			
C.	<b>Upstream Fish Passage</b>		<b>X</b>			
D.	<b>Downstream Fish Passage</b>		<b>X</b>			
E.	<b>Watershed and Shoreline Protection</b>	<b>X</b>				
F.	<b>Threatened and Endangered Species Protection</b>		<b>X</b>			
G.	<b>Cultural and Historic Resources Protection</b>		<b>X</b>			
H.	<b>Recreational Resources</b>		<b>X</b>			

#### **Downstream ZOE**

<b>Criterion</b>		<b>Alternative Standards</b>				
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Plus</b>
A.	<b>Ecological Flow Regimes</b>		<b>X</b>			
B.	<b>Water Quality</b>		<b>X</b>			
C.	<b>Upstream Fish Passage</b>		<b>X</b>			
D.	<b>Downstream Fish Passage</b>	<b>X</b>				
E.	<b>Watershed and Shoreline Protection</b>	<b>X</b>				
F.	<b>Threatened and Endangered Species Protection</b>		<b>X</b>			
G.	<b>Cultural and Historic Resources Protection</b>		<b>X</b>			
H.	<b>Recreational Resources</b>		<b>X</b>			

## 2.2 East Norfolk Development

### Impoundment ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			

### Bypass Reach ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes		X			
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources	X				

### Downstream ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage	X				
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			

## 2.3 Norfolk Development

### Impoundment ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			

### Bypass Reach ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes		X			
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources	X				

### Downstream ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage	X				
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			



## 2.4 Raymondville Development

### Impoundment ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			

### Bypass Reach ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes	X				
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage		X			
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources	X				

### Downstream ZOE

Criterion		Alternative Standards				
		1	2	3	4	Plus
A.	Ecological Flow Regimes		X			
B.	Water Quality		X			
C.	Upstream Fish Passage		X			
D.	Downstream Fish Passage	X				
E.	Watershed and Shoreline Protection	X				
F.	Threatened and Endangered Species Protection		X			
G.	Cultural and Historic Resources Protection		X			
H.	Recreational Resources		X			

### **3.0 SUPPORTING INFORMATION**

#### **3.1 ECOLOGICAL FLOW IMPOUNDMENT ZOE**

##### **Norwood, East Norfolk, Norfolk, and Raymondville**

<b><i>Criterion</i></b>	<b><i>Standard</i></b>	<b><i>Instructions</i></b>
A	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"><li>• Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.</li><li>• If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.</li><li>• In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.</li><li>• For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – <b>NOTE:</b> this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.</li></ul>

- There is no bypassed reach located within the Impoundment ZOE of any of the Lower Raquette River Project (LRRP) developments.
- Section 4.3.4 of the Offer of Settlement (Settlement) required the LRRP developments to operate in a mode where a target normal maximum fluctuation limit of 0.2 feet below the dam crest or top of the flashboards (if installed) could be achieved. However, up to 0.5 feet of impoundment fluctuation was allowed at the Norwood, East Norfolk, and Raymondville developments and up to 1.0 foot at the Norfolk development, before an impoundment level deviation notification to New York DEC and FERC was warranted.
- The LRRP's original Streamflow Monitoring Plan<sup>11</sup> (prescribed by License Article 402), was approved by FERC Order Approving Stream Flow Monitoring Plan Under Article 402 issued May 14, 2004<sup>12</sup>. It outlined compliance with the required flow releases and reservoir fluctuation limits at all four LRRP developments. As outlined within the plan, Erie measured the impoundment levels at all the LRRP developments with remote gauging equipment that record headpond elevations every 15 minutes. An hourly average is stored at Erie's National System Control Center (NSCC) and is recorded to the nearest 0.1 foot.

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<sup>11</sup> [20021206-0059](#)

<sup>12</sup> [107 FERC ¶ 62,143](#)

On July 3, 2006<sup>13</sup>, Erie filed an application to amend the LRRP license by increasing the authorized generating capacity and changing the mode of operation from the existing store and release mode of operation to a run-of-river (ROR) mode of operation. In FERC's Order Amending License and Accelerating Fish Protection and Downstream Passage Schedule issued December 5, 2006<sup>14</sup>, FERC required Erie to operate the LRRP in accordance with the supplemental New York DEC water quality certification (WQC) issued October 13, 2006<sup>15</sup> and file a revised stream flow and water level monitoring plan.

On March 24, 2010<sup>16</sup>, Erie filed the final Revised Stream Flow and Water Level Monitoring Plan for the LRRP, which was approved by FERC Order Approving Revised Stream Flow Monitoring Plan Under Article 402 issued November 23, 2010<sup>17</sup>. The December 5, 2006 FERC Order resulted in a change in the water level requirements stipulated by section 4.3.4 of the Settlement.

The current operating condition of the four LRRP developments is a ROR operation mode, with an operational bandwidth to within 0.5 feet below the crest of dam or top of the flashboards (when in place). Erie tries to operate the LRRP developments in a ROR mode while maintaining each headpond at or near the top (within 0.2 feet) of dam crest or the top of flashboards (when in place). Under the revised plan Erie continues to measure the impoundment levels at all the LRRP developments with remote gauging equipment that record headpond elevations every 15 minutes. An hourly average is stored at Erie's HCC and is recorded to the nearest 0.1 foot.

License Article 406 requires Erie to notify FERC within 10 days of any event that results in Erie being unable to comply with the requirements of the license regarding instream flows, normal impoundment fluctuations, and fish passage and protection.

- None of the LRRP developments are conduit projects.
- The LRRP's run-of-river operations create a stable impoundment environment. However, from 2009 through 2014 a total of 34 impoundment deviations occurred. The majority of these deviations were determined to be caused by inadequate trashrack monitoring/raking, poor preventative maintenance of equipment, deficient SCADA program logic and operator error. In response, during the last LIHI re-certification period, LIHI required Erie to submit a Deviation Reduction Plan (DRP) to identify proactive approaches to reduce the likelihood of future operational deviations. The DRP is Condition 1 listed on the LIHI website for the LRRP developments. It is noted that the requirement for the DRP was completed by Erie in 2017.

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<sup>13</sup> [20060706-0122](#)

<sup>14</sup> [117 FERC ¶ 62,208](#)

<sup>15</sup> [20061023-0042](#)

<sup>16</sup> [20100324-5021](#)

<sup>17</sup> [133 FERC ¶ 62,169](#)

**ECOLOGICAL FLOWS STANDARDS: BYPASS REACH ZOE**  
**(East Norfolk and Norfolk)**

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none"> <li>• 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 stringent).</li> <li>• 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.</li> <li>• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.</li> <li>• 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).</li> </ul>

- In accordance with the December 5, 2006 FERC Order, the East Norfolk and Norfolk developments are operated as a run-of-river facilities. When the developments are not operating, all flows are spilled from the dam. In accordance with sections 3.3.4.2 and 3.3.4.3 of the Settlement, Erie provides a year-round minimum (Table 2), or inflow, whichever is less, into the Raquette River bypassed reach.
- At the East Norfolk development, the minimum flow is released from the stoplog section of the dam near the left shore and intake.
- At the Norfolk development, the minimum flow is partitioned between a release from the stoplog section of the dam, near the headgates and the right shore, and the trash sluice channel release at the upstream end of the bypassed reach. The minimum flows are used to enhance aquatic habitats of the LRRP.

**TABLE 2. AQUATIC HABITAT MINIMUM FLOW TO THE BYPASS REACH**

<b>Development</b>	<b>Time Period</b>	<b>Release Location</b>		<b>Total (cfs)</b>
		<b>Stoplog Section of Dam (cfs)</b>	<b>Trash Sluice Channel (cfs)</b>	
East Norfolk	January 1 to December 31	75	-	75
Norfolk	January 1 to December 31	55	20	75

- The Settlement's aquatic habitat minimum flow schedule (Table 2) is based on a Delphi-type exercise conducted in the summer of 1996 for the Lower Raquette bypassed reaches.

The studies teams included Erie, FWS, New York DEC, and other NGO participants. The bypassed reaches were broken into segments and rated for their habitat value, and other uses. The bypassed reaches were then examined visually by the study team at different times and under different discharges to determine at what nominal flows collective management objectives could be attained.

**ECOLOGICAL FLOWS STANDARDS: BYPASS REACH ZOE**  
**(Raymondville Development)**

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> <li>• Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.</li> <li>• If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.</li> <li>• In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.</li> <li>• For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – <b>NOTE:</b> this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.</li> </ul>

- In accordance with the December 5, 2006 FERC Order, the Raymondville development is operated as a run-of-river facility. When the development is not operating, all flows are spilled from the dam.

## ECOLOGICAL FLOWS STANDARDS:DOWNSTREAM ZOE

### (East Norfolk and Norfolk)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none"> <li>• Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.</li> <li>• If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.</li> <li>• In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.</li> <li>• For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – <b>NOTE:</b> this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.</li> </ul>

- In accordance with the December 5, 2006 FERC Order, the East Norfolk and Norfolk developments are operated as a run-of-river facilities. When the developments are not operating, all flows are spilled from the dam.

## ECOLOGICAL FLOWS STANDARDS:DOWNSTREAM ZOE

### (Norward and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
A	2	<p><u>Agency Recommendation (see Appendix A for definitions):</u></p> <ul style="list-style-type: none"> <li>• 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 stringent).</li> <li>• 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.</li> <li>• Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.</li> <li>• 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).</li> </ul>

- In accordance with section 6.3.4 of the Settlement, a fish conveyance flow of 20 cfs is to be released from the Norwood development for downstream fish passage. The flow is released from the stop log section of the dam adjacent to the left dam abutment. No instream flow release beyond the 20 cfs fish movement flow is required at the Norwood development. In a letter dated

September 10, 2002 (Appendix D), FWS notes that the FWS has traditionally used 20 cfs as a guideline for safe fish conveyance; hence their agreement in the Settlement for a 20 cfs release at the Norwood development. A fish conveyance flow of 20 cfs for downstream fish passage is also provided at the Raymondville development through the trash sluice weir and/or low-level sluice gate located at the downstream end of the power canal near the powerhouse. These fish conveyance flows are used to enhance aquatic habitats of the LRRP and promote passage survival.

- In accordance with section 5.3.3 of the Settlement and FERC Order Approving Revised Stream Flow Monitoring Plan Under Article 402 issued November 23, 2010, Erie maintains a baseflow downstream of the Raymondville development. During “wet” and “normal” conditions, the baseflow shall be at least 560 cfs. During a “dry” condition, the baseflow shall be at least 290 cfs. During a “drought” condition, Erie must provide a baseflow equal to the daily average flow of the USGS Raquette River at Piercefield, NY gage (No. 04266500)<sup>18</sup>, and consult with appropriate New York DEC staff to determine any appropriate adjustments. These baseflow magnitudes are to be maintained and measured at the area known as 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 Hydroelectric Project, in conjunction with Carry Falls Reservoir elevation and Piercefield USGS gage data is used in determining the type of flow condition and corresponding baseflow. This baseflow is used to enhance aquatic habitats of the LRRP.

In 2015, eight baseflow deviations occurred at the Raymondville facility. FERC considered two of these deviations to be violations of the license requirement of Article 402. In response, Erie began consultation with resource agencies to conduct a flow study to determine the correlation between the USGS gage readings at Raymondville and the flow measured at the area of interest referred to as the “cemetery riffle” in the license Settlement agreement. In all cases, Erie notified the New York DEC of the deviations and received no comments. Correspondence relating to this series of baseflow deviations is presented in Appendix G. Currently, Erie continues to operate the Raymondville development in accordance with section 5.3.3 of the Settlement and FERC Order Approving Revised Stream Flow Monitoring Plan Under Article 402 issued November 23, 2010. From 2016 to April 2019, Erie reported five potential base flow deviations at the Raymondville facility. FERC considered none of these instances to be a violation of Article 402. Erie continues to report any deviations from license requirements.

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<sup>18</sup> [https://waterdata.usgs.gov/nwis/inventory/?site\\_no=04266500&agency\\_cd=USGS](https://waterdata.usgs.gov/nwis/inventory/?site_no=04266500&agency_cd=USGS)



### 3.2 WATER QUALITY STANDARDS: ALL ZOES

#### (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"><li>• If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.</li><li>• Provide a copy of the most recent Water Quality Certificate, including the date of issuance.</li><li>• Identify any other agency recommendations related to water quality and explain their scientific or technical basis.</li><li>• Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.</li></ul>

- The 2016 State of New York 303(d) List of Impaired Waters<sup>19</sup> does not identify the waters in the LRRP area as being impaired.
- New York DEC issued the original LRRP WQC on June 11, 1998 (see Appendix C for a copy of the WQC).
- New York DEC issued a supplemental LRRP WQC on October 13, 2006 (Appendix C). The supplemental WQC addresses Erie's July 3, 2006 application to amend license. In the amendment, Erie proposed to increase the authorized capacity of the LRRP and change operation at all four developments from the existing store and release mode of operation to a run-of-river mode of operation.

### 3.3 UPSTREAM FISH PASSAGE STANDARDS: ALL ZOES

#### (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
C	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"><li>• The facility is in compliance with science-based fish passage recommendations issued by appropriate resource agency(ies) for the facility and which may include provisions for appropriate monitoring and effectiveness determinations.</li></ul>

- FERC License Article 403 reserves the Commission's authority to require the Licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, fishways as may be prescribed by the Secretary of the Interior under Section 18 of the Federal Power Act.
- The upstream passage for anadromous and catadromous fish was not a management

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<sup>19</sup> [https://www.dec.ny.gov/docs/water\\_pdf/303dListfinal2016.pdf](https://www.dec.ny.gov/docs/water_pdf/303dListfinal2016.pdf)

objective of the original LRRP Settlement. However, FWS used their authority to prescribe fish passage facilities for the LRRP, and upstream passage of American eel became a management goal during the 2006 license amendment proceedings for the LRRP. As a result, Erie filed its final plan and schedule for upstream eel passage facilities on December 17, 2007<sup>20</sup>. FERC issued its Order Approving Upstream Eel Passage Facilities on March 3, 2008<sup>21</sup>.

Upstream eel passage facilities exist at each LRRP development and consist of 18-inch wide aluminum flumes with solid bottoms, installed with a maximum slope of 45 degrees, one-foot wide aluminum troughs to convey attraction flows, pumps and siphons to provide attraction and ladder flows, removable cover plates (at the East Norfolk, Norfolk, and Raymondville developments) and substrate liners in the flumes. Siphon pipes are used to provide attraction flows of 120 gallons per minute (gpm) and pumps provide 20 gpm into the ladders. The ladders are hinged in the lower sections to prevent damage during high flows, ice and from other debris impacts.

Erie sent the draft eel passage plan to the FWS and New York DEC on July 16, 2007. Comments were received from the FWS by letter dated August 15, 2007, and from the New York DEC by letter dated October 25, 2007. The New York DEC reiterated the comments from FWS. The FWS requested that attraction flows be directed along the side of the eel passage trough at the ladder entrances and that all entrances face downstream so that they are in alignment with migrating eel. Erie revised the plan (December 17, 2007 submittal) to address the FWS's and New York DEC's recommendations. By email communications dated January 25, 2008, and February 14, 2008, the FWS and New York DEC agreed with Erie's revised plan (Appendix D).

### **3.4 DOWNSTREAM FISH PASSAGE AND PROTECTION STANDARDS: IMPOUNDMENT AND BYPASS REACH ZOES**

#### **(Norwood, East Norfolk, Norfolk, and Raymondville)**

As discussed above, American eel migrates upstream through the LRRP area. As such, the species was a primary consideration within the design of the current downstream fish passage protection measures at the LRRP.

In addition, the LRRP area is composed of a diverse group of game fish and pan fish. Currently, New York DEC manages the Raquette River in the section of the LRRP as a mixed coolwater/warmwater fisheries resource. The most present game fish and pan fish are walleye, smallmouth bass, northern pike, yellow perch, rock bass, pumpkinseed, and brown bullhead. In 1989 a fisheries investigation of the bypassed reach of the LRRP resulted in a catch of 145 fish representing six species. Pumpkinseed and log perch constituted 82 percent of the catch. The dominant species structure has not changed since 1933.

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
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<sup>20</sup> [20080122-0280](#)

<sup>21</sup> [122 FERC ¶ 62,206](#)

D	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> <li>• 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 stringent).</li> <li>• 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.</li> <li>• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.</li> </ul>
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- In accordance with section 6.3.4 of the Settlement, Erie is to provide downstream fish movement and protection measures at the LRRP developments. Protection measures requested by resource agencies included downstream passage flows, modifications to the structures and streambed to make the flows fish-friendly, and scheduled installation of 1-inch clear spaced bar trashracks to prevent/reduce entrainment. Final requirements of the Settlement were developed in consultation with FWS and New York DEC.
- At the Norwood development, 1-inch clear spacing physical barrier was installed at the location of the existing trashrack structure. The 2006 amended license application process accelerated the installation of the 1-inch barriers from 2010 to 2007 (Appendix D). In addition, Erie provides a fish conveyance flow (20 cfs) via the stoplog structure adjacent to the dam. Erie was also required to reduce the roughness of the spillway face, implement measures to reduce dispersion of the minimum release across the spillway face, and ensure the release structure empties into a pool of adequate dimensions.
- At the East Norfolk development, 1-inch clear spacing physical barrier was installed at the location of the existing trashrack structure in 2006. Erie was also required to construct a plunge pool below the passage structure.
- At the Norfolk development, 1-inch clear spacing physical barrier was installed at the location of the existing trashrack structure in 2004. Erie was also required to modify the trash sluice flume to reduce flow velocity and construct adequate plunge pools and conveyance routes in the rip-rap basin and obstructed channel between the trash sluice flume and bypass reach.
- At the Raymondville development, 1-inch clear spacing physical barrier was installed at the location of the existing trashrack structure in 2002. In addition, Erie provides a fish conveyance flow (20 cfs) via the trash sluice structure and/or via low level sluice gate. Erie was also required to modify the pool adjacent to the powerhouse to ensure adequate dimensions for the release structure.
- The Settlement did not require Erie to prepare a fish passage plan and effectiveness testing plan in consultation with FWS and New York DEC. However, FERC staff determined in the LRRP EA, that the provision of 1-inch trashracks was expected to reduce entrainment of adult fish. Staff reviewed the LRRP developments and determined that the average approach velocities, as

measured 1 foot in front of the trashracks, were generally less than 2 feet per second (fps), and the installation of the 1-inch trashrack screens should not result in any adverse effects on fisheries resources if Erie continues to routinely remove debris from the trashracks. In addition, FERC staff agreed that the provision of conveyance flows, along with modifications to the dam faces and bypassed reaches at the toe of the dams, would result in better, less stressful downstream movement for fish.

### 3.5 DOWNSTREAM FISH PASSAGE STANDARDS: DOWNSTREAM ZOE (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
D	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> <li>• 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).</li> <li>• 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.</li> <li>• Document available fish distribution data and the lack of migratory fish species in the vicinity.</li> <li>• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.</li> </ul>

Presently there are migratory species (American eel) located within the vicinity of the LRRP developments. However, as discussed above, adequate upstream and downstream passage is provided.

- There are no barriers to downstream fish passage in the downstream ZOE. Once fish cross over the LRRP dams with use of the downstream passage facilities and through the bypass reaches, the fish do not have any further impediments to passage through the downstream ZOE.

### 3.6 SHORELINE AND WATERSHED PROTECTION STANDARDS: ALL ZOES (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> <li>• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary).</li> <li>• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.</li> </ul>

- River right of the LRRP area is mixed-use zone containing rural housing and industrial uses in the vicinity of the project dams. River right between the LRRP developments is

natural lands of non-significant ecological value. River left is the same make-up. Resource agencies did not consider a shoreline buffer, or watershed protection plan, as necessary for the LRRP, given the nature and location of the LRRP facilities.

- Land cover units with non- significant ecological value identified within the vicinity of the Project can be found in Table 3 (based on National Land Cover Database 2016: <https://www.mrlc.gov/tools>).

**TABLE 3. LRRP AREA LAND COVER AS CLASSIFIED BY THE NLCD 2016**

<i>Class/Value</i>	<i>Classification Description</i>
11	<b>Open Water</b> - areas of open water, generally with less than 25% cover of vegetation or soil.
21	<b>Developed, Open Space</b> - areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
22	<b>Developed, Low Intensity</b> - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.
41	<b>Deciduous Forest</b> - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.
42	<b>Evergreen Forest</b> - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.
43	<b>Mixed Forest</b> - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.
81	<b>Pasture/Hay</b> -areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.

<i>Class/Value</i>	<i>Classification Description</i>
90	<b>Woody Wetlands-</b> areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
95	<b>Emergent Herbaceous Wetlands-</b> Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

### 3.7 THREATENED AND ENDANGERED SPECIES STANDARDS: ALL ZOES (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
F	2	<u>Finding of No Negative Effects:</u> <ul style="list-style-type: none"> <li>Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.</li> <li>Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.</li> </ul>

- A U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) Trust Resources Report was generated April 4, 2019 for the LRRP area (Appendix E). The IPaC Report identified one threatened species, the Northern Long-eared Bat (*Myotis septentrionalis*), and 7 migratory birds protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. All of the following birds are listed as Birds of Conservation Concern: American Golden-plover (*Pluvialis dominica*); Bald Eagle (*Haliaeetus leucocephalus*); Bobolink (*Dolichonyx oryzivorus*); Eastern Whip-poor-will (*Antrostomus vociferous*); Lesser Yellowlegs (*Tringa flavipes*); Semipalmated Sandpiper (*Calidris pusilla*); and Wood Thrush (*Hylocichla mustelina*). The only year-round bird found in the LRRP area is the Bald Eagle. All the other 6 species are found exclusively during breeding or wintering season.

The Bald Eagle is a state-endangered species listed under the protection of the New York Endangered Species Law<sup>22</sup>. The Northern Long-eared Bat and Upland Sandpiper are listed as state-threatened.

The threatened Bald Eagle is known to pass within the boundaries of the LRRP only as a transient species. In a letter dated November 7, 2006 (Appendix E), Erie provides correspondence history with FWS, where in a letter dated June 26, 2006, FWS identified the presence of the Bald Eagle in the vicinity of the St. Lawrence River. However, only one Bald Eagle nest was stated to be located within 8 miles of the Raymondville development and no critical habitat for this species was identified by the FWS in the vicinity of the LRRP. New York DEC has also determined that the Bald Eagle is not affected by operations of the LRRP.

<sup>22</sup> <https://www.dec.ny.gov/animals/7494.html>

- By letter dated July 28, 2006 (Appendix E), Erie provides additional correspondence with New York DEC regarding additional threatened and endangered species. In the letter, New York DEC notes that they reviewed their database and identified the following species in the vicinity of the LRRP: 1) Yellow Lampmussel; 2) Lake Sturgeon; and 3) Downy Phlox.

A mussel survey was completed for the LRRP in July 2000, and the presence of the Yellow Lampmussel species in the vicinity of the Norwood and Raymondville developments was documented. The populations were determined to be healthy, and the potential impact associated with the operation of the LRRP facilities was associated with the potential for water level variations. The switch from a store and pulse mode of operation to a ROR operation reduces water level variations at each LRRP facility. In their 2001 EA, FERC staff indicated there was no need to further investigate potential impacts to this species.

New York DEC indicated in 2006 that the Lake Sturgeon species has been caught in the Raquette River below the Raymondville facility. Future consultation with New York DEC and FWS did not indicate the LRRP had a critical impact on this species (Appendix E).

New York DEC indicated in 2006 that the Downy Phlox species was identified in an unspecified location near the Norwood development. Future consultation with New York DEC and FWS did not indicate the LRRP had a critical impact on this species (Appendix E).



### 3.8 CULTURAL AND HISTORIC RESOURCES STANDARDS: ALL ZOES (Norwood, East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none"> <li>• Provide documentation of all approved state, provincial, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.</li> <li>• Document that the facility is in compliance with all such plans.</li> </ul>

- In accordance with License Article 405, Erie developed a Historic Properties Management Plan (HPMP) in consultation with the National Park Service (NPS) and the New York Office of Parks, Recreation and Historic Preservation (SHPO). Erie submitted the final HPMP on April 15, 2003<sup>23</sup>, and an Order Approving Historic Properties Management Plans was issued by FERC on September 28, 2004<sup>24</sup>. Erie files an annual report of activities conducted under the implemented HPMP with FERC and the SHPO. The most recent annual report was filed with FERC on February 1, 2019<sup>25</sup> (Appendix F).
- The purpose of the HPMP is to establish procedures and guidelines for the management of historic properties expected within the Middle Raquette River Project's Area of Potential Effect (APE). A summary of the guidelines established by the HPMP for each facility is presented below.
  - Establishes a process for identifying the nature and significant of historic properties that may be affected by project maintenance and operation, proposed improvements to project facilities, and/or public access;
  - Establishes a decision-making process for considering potential effects on historic properties;
  - Defines goals for the preservation of historic properties;
  - Establishes guidelines for routine maintenance and operation activities as they relate to historic properties; and
  - Establishes procedures for consulting with the New York State Historic Preservation Office (SHPO), Indian Tribes, historic preservation experts, and the interested public concerning effects of the Projects on historic properties
- Per License Article 405, Erie implements provisions of the Programmatic Agreement, executed on February 6, 2002.

<sup>23</sup> [20030430-0218](#) (Privileged eLibrary document)

<sup>24</sup> [108 FERC ¶ 62,276](#)

<sup>25</sup> [20190201-5043](#)

**3.9 RECREATIONAL RESOURCES STANDARDS:  
IMPOUNDMENT ZOE  
(Norwood, East Norfolk, and Raymondville)**

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> <li>• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.</li> <li>• Document that the facility is in compliance with all such recommendations and plans.</li> </ul>

- In accordance with section 7.2.2 of the Settlement and License Article 404, Erie developed a Recreation Plan that includes measures to implement the new recreational facilities listed in section 7.2.2 of the Settlement and provisions for continued maintenance of the existing recreational facilities at the LRRP developments. Erie was required to prepare the Recreation Plan in consultation with the Raquette River Advisory Committee (RRAC).

On April 11, 2003<sup>26</sup> Erie submitted their final Recreation Plan. The Order Modifying and Approving Recreation Plan Pursuant to Article 404 was issued by FERC on November 17, 2004<sup>27</sup>. The boat launch, parking area, and picnic facilities at the Norwood development existed prior to the submittal of the final Recreation Plan. On April 19, 2006<sup>28</sup> Erie submitted its 2006 Annual Report on the status of license measures and noted that the recreational enhancements listed below were installed at the specified LRRP developments in 2005.

Facilities provided as part of the final Recreation Plan included:

- At Norwood – Canoe portage, boat launch and parking area, picnic facilities
- At East Norfolk – Canoe portage (take-out only) with informal parking area
- At Raymondville – Canoe portage, car top boat launch and picnic facilities with parking

<sup>26</sup> [20030414-0143](#) (CEII eLibrary document)

<sup>27</sup> [109 FERC ¶, 62,101](#)

<sup>28</sup> [20060420-0130](#)

## RECREATIONAL RESOURCES STANDARDS

### BYPASS REACH ZOE

(East Norfolk, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	1	<u>Agency Recommendation:</u> <ul style="list-style-type: none"><li>• The facility does not occupy lands or waters to which the public can be granted safe access and does not otherwise impact recreational opportunities in the vicinity of the facility.</li></ul>

- There are no FERC approved recreational facilities in the bypass ZOE of the LRRP developments.

## RECREATIONAL RESOURCES STANDARDS

### DOWNSTREAM ZOE

(Norwood, Norfolk, and Raymondville)

<i>Criterion</i>	<i>Standard</i>	<i>Instructions</i>
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"><li>• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.</li><li>• Document that the facility is in compliance with all such recommendations and plans.</li></ul>

- In accordance with section 7.2.2 of the Settlement and License Article 404, Erie developed a Recreation Plan that includes measures to implement the new recreational facilities listed in section 7.2.2 of the Settlement and provisions for continued maintenance of the existing recreational facilities at the LRRP developments. Erie was required to prepare the Recreation Plan in consultation with the Raquette River Advisory Committee (RRAC).

On April 11, 2003 Erie submitted their final Recreation Plan. The Order Modifying and Approving Recreation Plan Pursuant to Article 404 was issued by FERC on November 17, 2004. On April 19, 2006 Erie submitted its 2006 Annual Report on the status of license measures and noted that the recreational enhancements listed below were installed at the specified LRRP developments in 2005.

Facilities provided as part of the final Recreation Plan included:

- At Norwood – Canoe portage
- At Norfolk – Canoe portage with parking (put-in only)
- At Raymondville – Canoe portage

#### **4.0     CONTACTS FORMS**

<b>Project Owner:</b>	
<b>Name and Title</b>	Erie Boulevard Hydropower, L.P.
<b>Company</b>	Brookfield Renewable
<b>Phone</b>	315-267-1036
<b>Email Address</b>	<a href="mailto:Danny.Maguire@brookfieldrenewable.com">Danny.Maguire@brookfieldrenewable.com</a>
<b>Mailing Address</b>	184 Elm Street, Potsdam, NY 13676
<b>Consulting Firm / Agent for LIHI Program (if different from above):</b>	
<b>Name and Title</b>	Jot Splenda
<b>Company</b>	Louis Berger – WSP
<b>Phone</b>	919-866-4417
<b>Email Address</b>	<a href="mailto:jsplenda@louisberger.com">jsplenda@louisberger.com</a>
<b>Mailing Address</b>	Louis Berger 1001 Wade Ave, Suite 400 Raleigh, NC 27615
<b>Compliance Contact (responsible for LIHI Program requirements):</b>	
<b>Name and Title</b>	Daniel Maguire, P.E., Compliance Manager
<b>Company</b>	Brookfield Renewable
<b>Phone</b>	315-267-1036
<b>Email Address</b>	<a href="mailto:Danny.Maguire@brookfieldrenewable.com">Danny.Maguire@brookfieldrenewable.com</a>
<b>Mailing Address</b>	184 Elm Street, Potsdam, NY 13676
<b>Party responsible for accounts payable:</b>	
<b>Name and Title</b>	Judith Charette
<b>Company</b>	Brookfield Renewable
<b>Phone</b>	819-561-8099
<b>Email Address</b>	<a href="mailto:Judith.Charette@brookfieldrenewable.com">Judith.Charette@brookfieldrenewable.com</a>
<b>Mailing Address</b>	41 Rue Victoria, Gatineau QC J8X 2A1

<b>Agency Contact</b> (Check area of responsibility: Flows <input checked="" type="checkbox"/> , Water Quality <input checked="" type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input checked="" type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/> ):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Jessica Hart, Environmental Analyst
Phone	315-785-2246
Email address	<a href="mailto:Jessica.hart@dec.ny.gov">Jessica.hart@dec.ny.gov</a>
Mailing Address	317 Washington Street, Watertown, NY 13601

<b>Agency Contact</b> (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input checked="" type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/> ):	
Agency Name	New York State Department of Environmental Conservation
Name and Title	Nicholas Conrad, Information Resources Coordinator
Phone	518-402-8935
Email address	<a href="mailto:Nick.Conrad@dec.ny.gov">Nick.Conrad@dec.ny.gov</a>
Mailing Address	625 Broadway, Albany, NY 12233-4757

<b>Agency Contact</b> (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input checked="" type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/> ):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Robyn Niver, Endangered Species Biologist
Phone	607-753-9334
Email address	<a href="mailto:Robyn_Niver@fws.gov">Robyn_Niver@fws.gov</a>
Mailing Address	3817 Luker Road, Cortland, NY 13045

<b>Agency Contact</b> (Check area of responsibility: Flows <input checked="" type="checkbox"/> , Water Quality <input checked="" type="checkbox"/> , Fish/Wildlife Resources <input checked="" type="checkbox"/> , Watersheds <input checked="" type="checkbox"/> , T/E Spp. <input checked="" type="checkbox"/> , Cultural/Historic Resources <input type="checkbox"/> , Recreation <input type="checkbox"/> ):	
Agency Name	U.S. Fish and Wildlife Service
Name and Title	Steve Patch
Phone	607-753-9334
Email address	<a href="mailto:Stephen_Patch@fws.gov">Stephen_Patch@fws.gov</a>
Mailing Address	3817 Luker Road, Cortland, NY 13045

<b>Agency Contact</b> (Check area of responsibility: Flows <input type="checkbox"/> , Water Quality <input type="checkbox"/> , Fish/Wildlife Resources <input type="checkbox"/> , Watersheds <input type="checkbox"/> , T/E Spp. <input type="checkbox"/> , Cultural/Historic Resources <input checked="" type="checkbox"/> , Recreation <input type="checkbox"/> ):	
Agency Name	New York State Division for Historic Preservation
Name and Title	Michael Lynch, Division Director
Phone	518-237-8643
Email address	<a href="mailto:Michael.Lynch@parks.ny.gov">Michael.Lynch@parks.ny.gov</a>
Mailing Address	Peebles Island State Park, P.O. Box 189, Waterford, NY 12188-0189

## **5.0    SWORN STATEMENT**

### B.3 Sworn Statement and Waiver Form

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

#### SWORN STATEMENT

*As an Authorized Representative of Erie Boulevard Hydro, 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.*

#### PLEASE INSERT FOR PRE-OPERATIONAL CERTIFICATIONS (see Section 4.5.3):

*The Undersigned acknowledges that LIHI may suspend or revoke the LIHI Certification should the impacts of the facility, once operational, fail to comply with the LIHI program requirements.*

Company Name: Erie Boulevard Hydro, L.P, a subsidiary of Brookfield Renewable Energy Group

Authorized Representative:

Name: Daniel Maguire P.E.

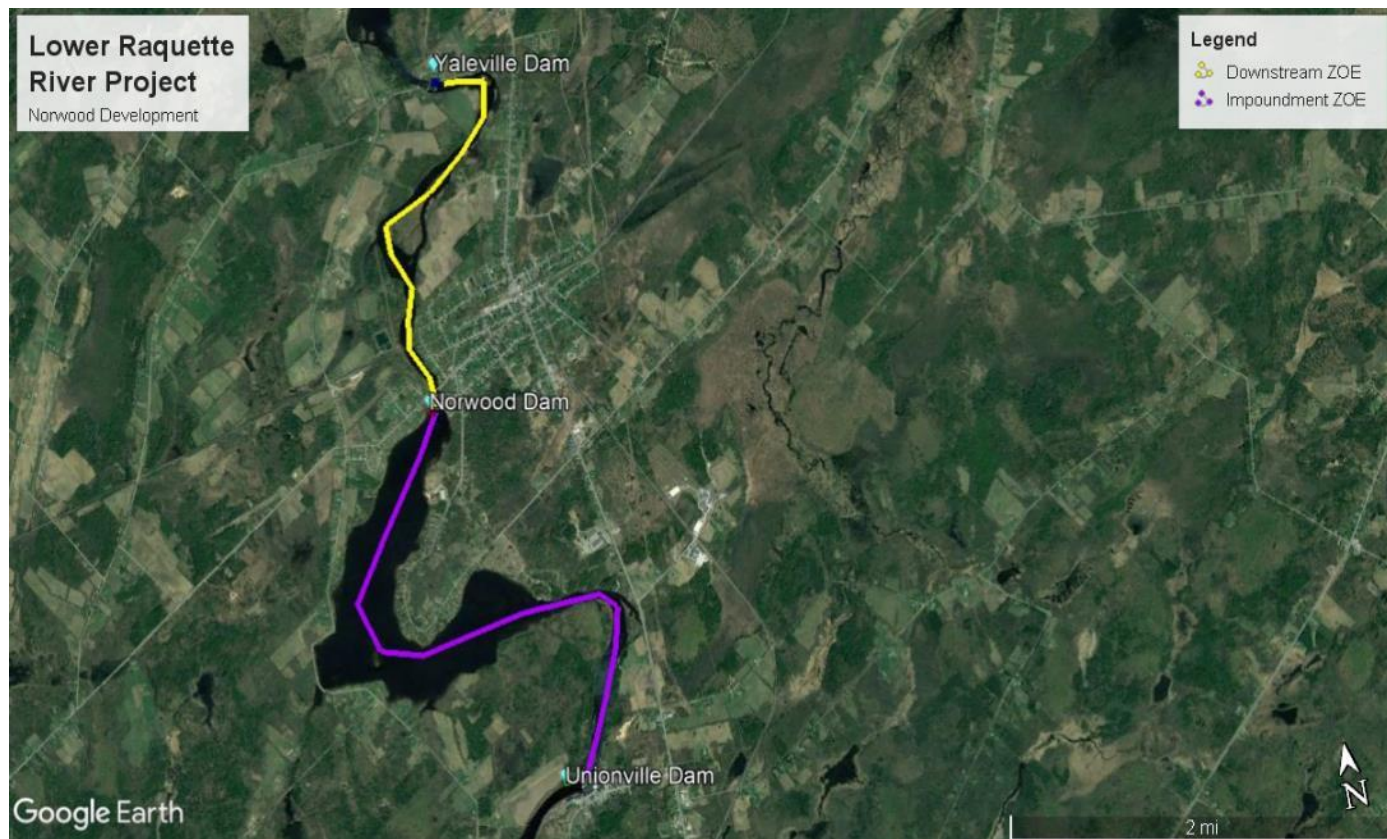
Title: Compliance Manager

Authorized Signature: 

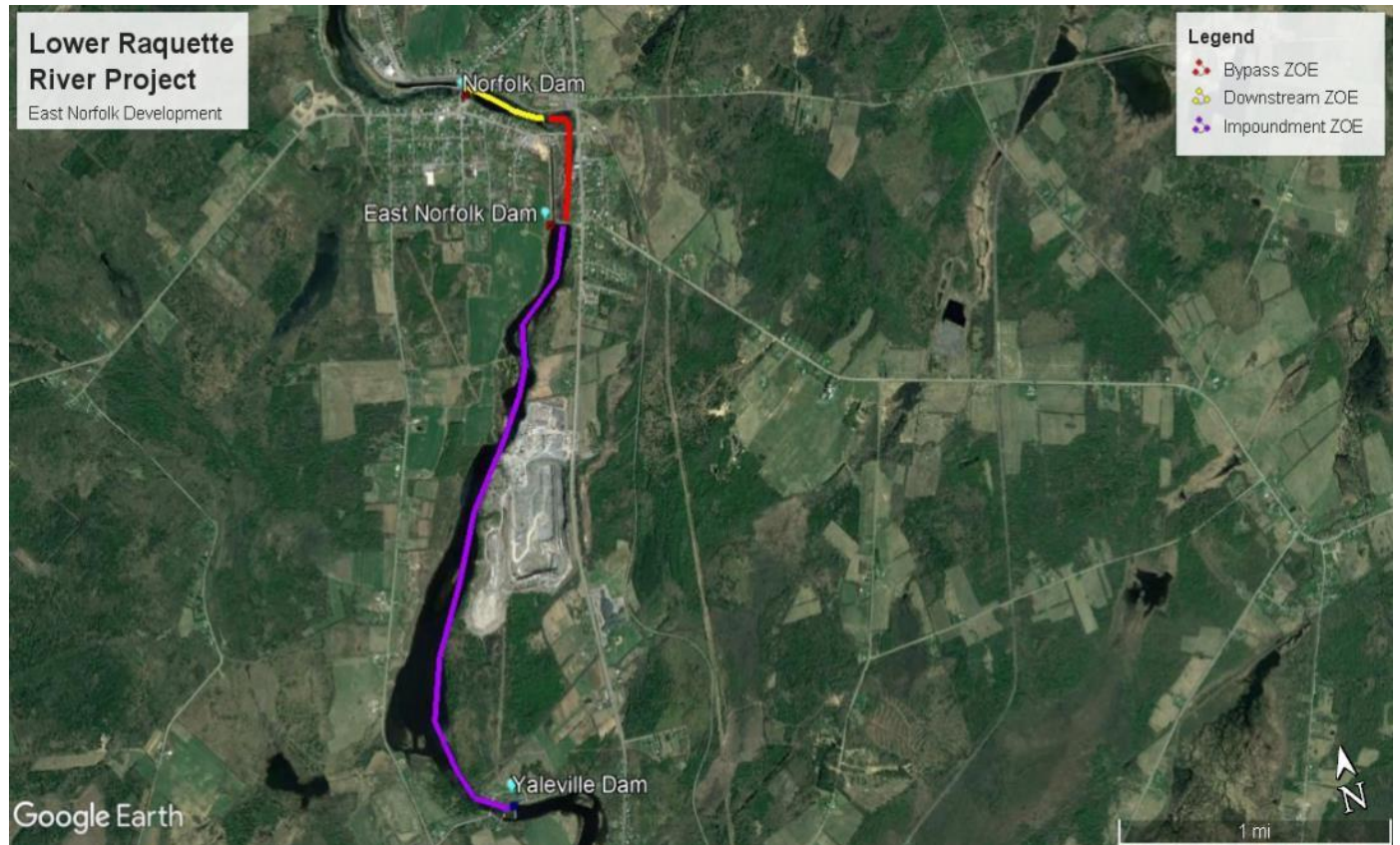
Date: 5/28/2019

**APPENDIX A**  
**PROJECT ZOES & PHOTOS**





**FIGURE 2: Norwood Development Zones of Effect**



**FIGURE 3: East Norfolk Development Zones of Effect**



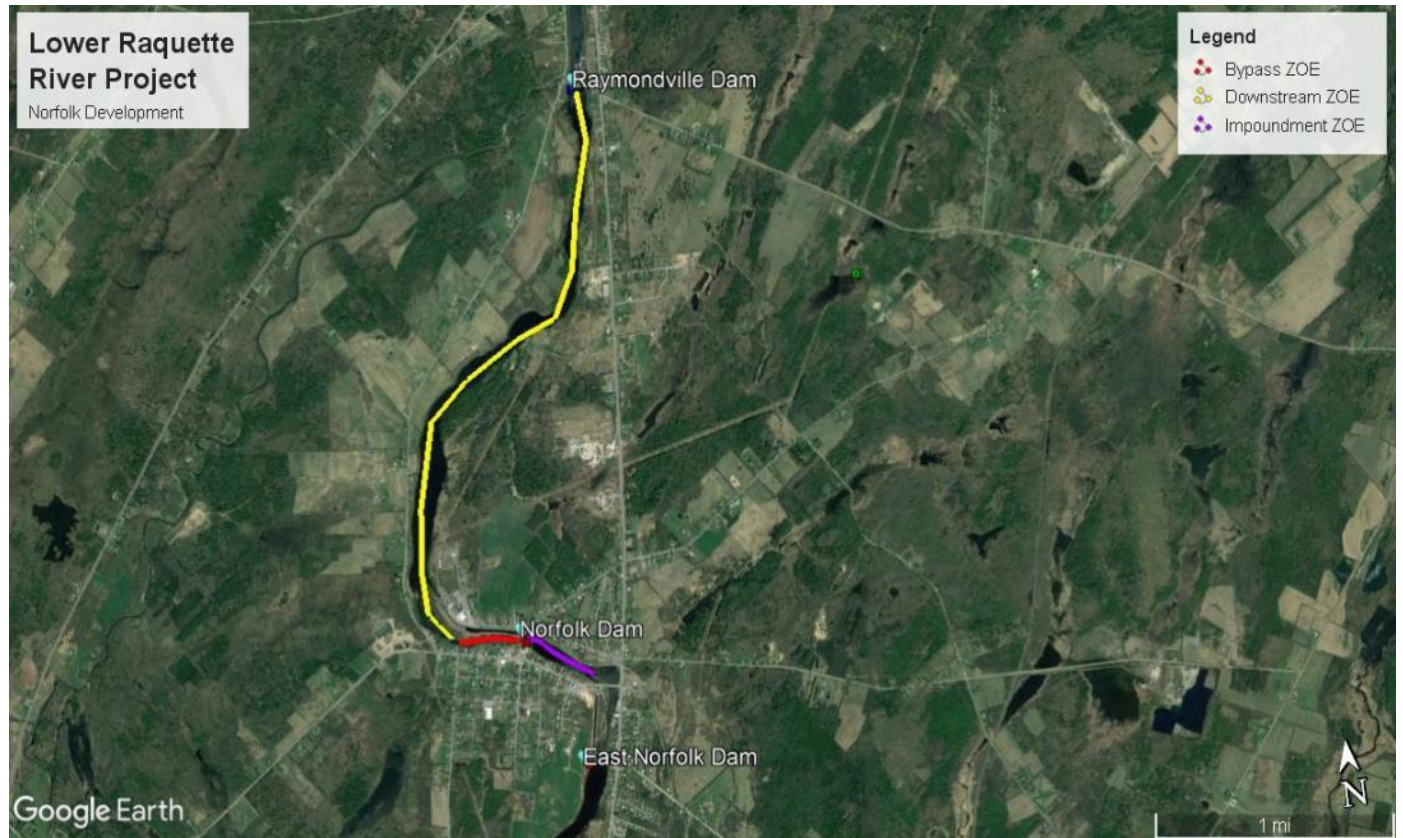
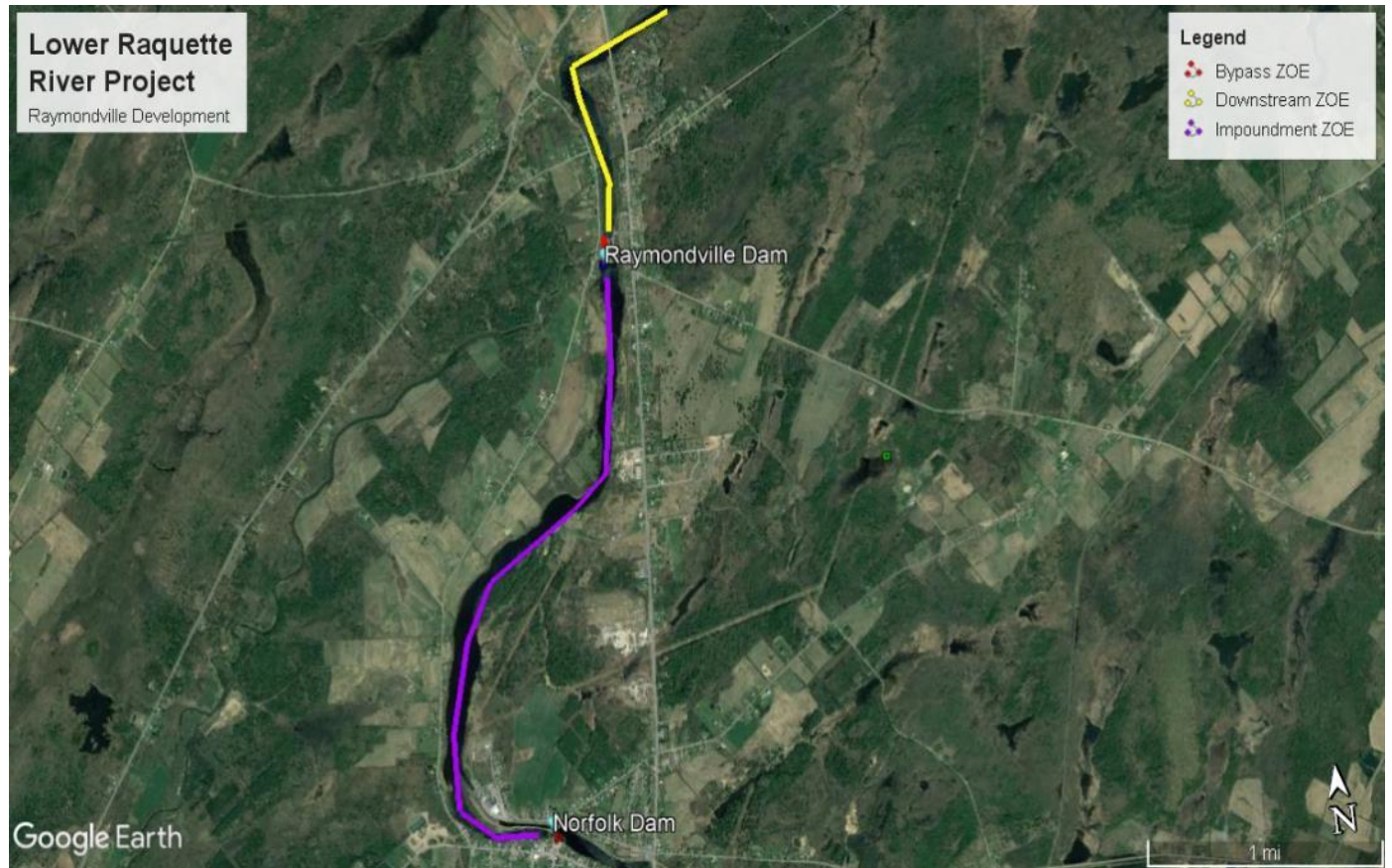


FIGURE 4: Norfolk Development Zones of Effect



**FIGURE 5: Raymondville Development Zones of Effect**





**FIGURE 6: Norwood Development - Headpond staff gage (arrow) and intake to the power canal (Note: upstream boat barrier also visible).**



**FIGURE 7: Norwood Development—Upstream eel passage ramp (Note: similar eel ramps in place at Norfolk, East Norfolk, and Raymondville Developments).**



**FIGURE 8: Norwood Development - Generator**



**FIGURE 9: East Norfolk Development – Upstream side of dam, with boat barrier.**



**FIGURE 10: East Norfolk Development – Downstream Side of Project Dam**



**FIGURE 11: East Norfolk Development – Power Canal**





**FIGURE 12: Norfolk Development—Headpond elevation sensor (arrow) (Note: similar sensors in place at Norwood, East Norfolk, and Raymondville Developments).**



**FIGURE 13: Norfolk Development – Project Dam**





**FIGURE 14: Norfolk Development – Power Canal**



**FIGURE 15: Norfolk Development – Powerhouse**



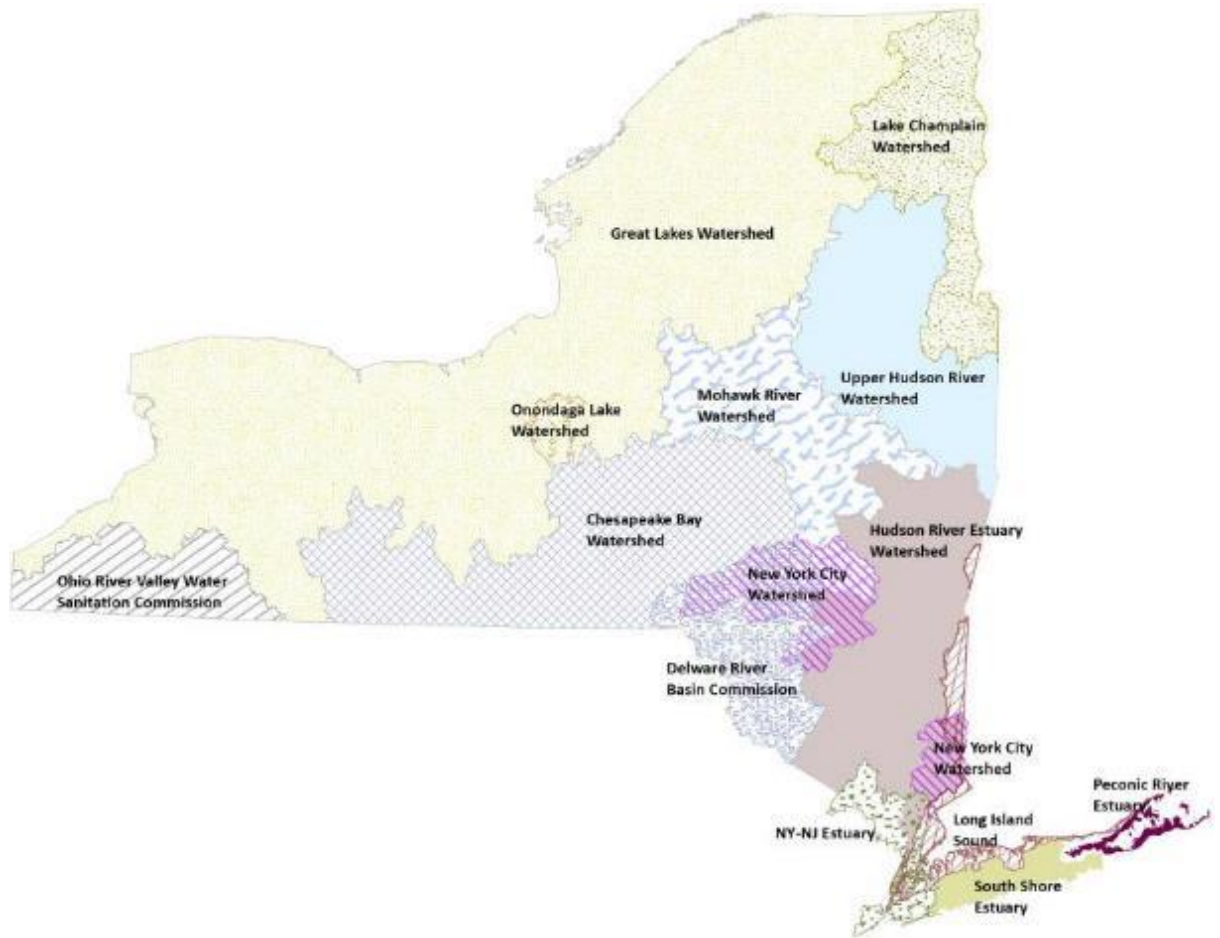
**FIGURE 16: Raymondville Development – Project Dam**



**FIGURE 17: Raymondville Development – Power Canal**

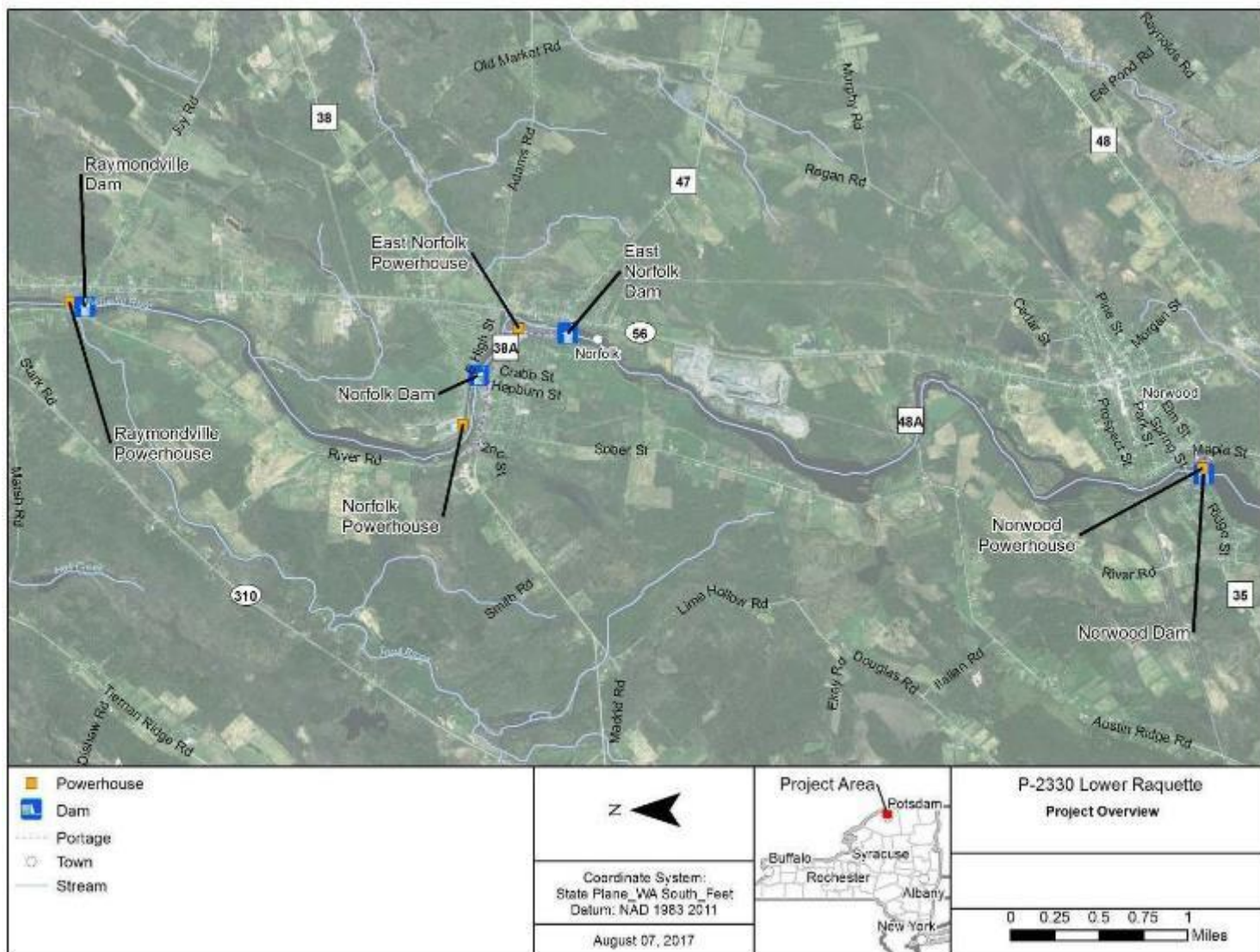
**APPENDIX B**

**RIVER BASIN AND AERIAL PHOTO OF FACILITY  
AREA**



**FIGURE 18: NEW YORK STATE DRAINAGE BASINS**





**FIGURE 19: GEOGRAPHIC OVERVIEW OF LOWER RAQUETTE PROJECT LOCATION**

**APPENDIX C**  
**WATER QUALITY**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL  
CONSERVATION  
STANDARD WATER QUALITY CONDITIONS**

**A. OVERSIGHT AND ADMINISTRATION**

Inspections

The projects, including relevant records, are subject to inspection at reasonable hours and intervals, upon reasonable notice to the certificate holder, by an authorized representative of the Department to determine whether the certificate holder is complying with this certification. A copy of this certification, including all referenced maps, drawings, and special conditions must be available for inspection by the Department during such inspections at the project.

**B. PROJECT MAINTENANCE AND CONSTRUCTION**

**1. Maintenance Dredging**

The certificate holder shall curtail generation and install stoplogs or otherwise shut off flow through the turbine(s) prior to commencing any maintenance dredging activities in any intake/forebay area.

**2. Sediment Analysis and Disposal**

The certificate holder must sample any sediments to be disturbed or removed from the projects' waters and test them for contaminants. Sampling and testing shall be accomplished according to a protocol submitted to and approved by the Department beforehand. Prior to dredging or other excavation, the certificate holder must secure Department approval for all disposal locations for any sediments to be removed from the project waters.

**3. Erosion and Sediment Control**

Prior to commencing activities which could adversely affect water quality, the certificate holder must receive Department approval of an Erosion and Sediment Control Plan. This plan must be submitted at least 60 days before the intended date for commencing work. Actions undertaken in response to an emergency and governed by the procedures contained in 6 NYCRR Section 621.12 are exempt from this condition. At minimum, the certificate holder must:

a. isolate instream work from the flow of water and prevent discolored (turbid) discharges and sediments from entering the waters of the river due to excavation, dewatering and construction activities.

b. avoid using heavy construction equipment below the mean high water line of the river until the work area is protected by an approved structure and dewatered.

c. stabilize any disturbed banks by grading to an appropriate slope, followed by armoring or vegetating as appropriate, to prevent erosion and sedimentation into the waterbody.

d. minimize soil disturbance, provide appropriate grading and temporary and permanent revegetation of stockpiles and other disturbed areas to minimize erosion/sedimentation potential.

e. install and maintain, in a fully functional condition, effective erosion control measures on the downslope of all disturbed areas before commencing any other soil disturbing activities.

f. protect all waters from contamination by deleterious materials such as wet concrete, gasoline, solvents, epoxy resins or other materials used in construction, maintenance and operation of the project.

g. ensure complete removal of all dredged and excavated material, debris, or excess materials from construction from the bed and banks of all water areas to an approved upland disposal site.

h. ensure that all temporary fill and other materials placed in the waters of the river are completely removed upon completion of construction unless otherwise directed by the Department.

4. Placement of cofferdams, construction of temporary access roads or ramps, or other temporary structures which encroach upon the bed or banks of the river.

The design of all such structures will be developed in accordance with Condition #3 (above).

5. Maintenance of River Flow

During all periods of construction, the certificate holder shall maintain adequate flows immediately downstream of work sites to ensure that the water quality standards established for the water body are met.

6. Turbidity Monitoring

During all periods of construction, the certificate holder will monitor the waters of the river at a point immediately upstream of project activities and at a point no more than 100 feet downstream from any discharge point or other potential source of turbidity. If at any time, turbidity measurements from the downstream locations exceed the measurements from the locations upstream of the work areas, certificate holder specifically agrees to immediately take all action necessary to identify the activities causing the turbidity and to correct the situation.

7. Notifications

At least two (2) weeks prior to commencing any work subject to conditions 2 through 6 of



this certificate, the certificate holder shall provide written notification to:  
Regional Permit Administrator  
New York State Department of Environmental Conservation  
Division of Environmental Permits  
317 Washington Street  
Watertown, New York 13601

Dulles State Office Building, 317 Washington Street, Watertown, New York 13601-3787  
**Phone:** (315) 785-2245 • **FAX:** (315) 785-2242  
**Website:** [www.dec.state.ny.us](http://www.dec.state.ny.us)

Denise M. Sheehan  
Commissioner

2025 OCT 19 P 3:49

October 13, 2006

General Superintendent

RE: LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT  
DEC ID #6-4099-00006/00001 - FERC PROJECT 2330  
POTSDAM (T) & NORFOLK (T), ST. LAWRENCE COUNTY

**Dear Mr. Hirschey:**

Enclosed is the Water Quality Certificate for the Lower Raquette River Hydroelectric Project. The Certificate is being issued pursuant to Section 401 of the Federal Water Pollution Control Act (33 USC 1341) and section 608.9 of the New York Department of Environmental Conservation's regulations pertaining to the Use and Protection of Waters (6 NYCRR Part 608).

**Should you have any questions regarding the Water Quality Certificate, please contact me.**

Sincerely,

Brian P. Fenton

**Brian D. Fenlon**  
Regional Permit Administrator  
Region 6

**BDF:sgs**

cc: M. Salas, FERC  
Jack Nasca, NYSDEC  
Service List

## NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION



<b>DEC APPLICATION NUMBER</b> <b>6-4099-00006/00001</b>		<b>EFFECTIVE DATE</b> <b>October 13, 2006</b>	
<b>FACILITY/PROGRAM NUMBER(S)</b> <b>FERC Project # 2330</b>		<b>WATER QUALITY</b> Certificate	
<b>CERTIFICATE ISSUED TO</b> Erie Boulevard Hydropower L.P.		<b>TELEPHONE NUMBER</b> (315) 413 - 2792	
<b>ADDRESS OF RECIPIENT</b> 225 Greenfield Parkway, Suite 201 Liverpool, NY 13088			
<b>CONTACT PERSON FOR RECIPIENT</b> David Culligan, P.E.		<b>TELEPHONE NUMBER</b> (315) 413 - 2792	
<b>NAME AND ADDRESS OF PROJECT/FACILITY</b> Raquette River, St., Lawrence County, NY			
<b>LOCATION OF PROJECT/FACILITY</b> On the Raquette River, within and between Norwood and Raymondville, NY			
<b>COUNTY</b> St. Lawrence	<b>TOWN</b> Potsdam and Norfolk	<b>WATERCOURSE</b> Raquette River	<b>NYTM COORDINATES</b> E:            N:
<b>DESCRIPTION:</b> Operation and Maintenance of the Lower Raquette River Hydroelectric Project in accordance with the attached Conditions and the applicable provisions of the Raquette River Projects Settlement Offer dated November March 13, 1998 and Application for Amendment of License for the Lower Raquette Hydroelectric Project, dated June 30, 2006.			

By acceptance of this certificate, the certificate holder agrees that it will act in strict compliance with the applicable water quality sections of the Environmental Conservation Law (ECL), all water quality regulations, the conditions included as part of this certificate and the provisions of the Raquette River Hydroelectric Project 'Settlement Offer' (Settlement) dated March 13, 1998, and Application for amendment of License, Lower Raquette Hydroelectric Project filed with the Federal Energy Regulatory Commission FERC on June 30, 2006.

<b>REGIONAL PERMIT ADMINISTRATOR</b> Brian D. Fenlon	<b>ADDRESS</b> 317 Washington St., Watertown, NY 13601	
<b>AUTHORIZED SIGNATURE</b> <i>Brian D. Fenlon</i>	<b>DATE</b> October 13, 2006	PAGE 1 OF 7

**NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS****Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

**Item B: Permittee's Contractors to Comply with Permit**

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

**Item C: Permittee Responsible for Obtaining Other Required Permits**

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

**Item D: No Right to Trespass or Interfere with Riparian Rights**

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

**GENERAL CONDITIONS****General Condition 1: Facility Inspection by the Department**

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

**General Condition 2: Relationship of this Permit to Other Department Orders and Determinations**

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

**General Condition 3: Applications for Permit Renewals or Modifications**

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

The permittee must submit a renewal application at least:

- a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and
- b) 30 days before expiration of all other permit types.

Submission of applications for permit renewal or modification are to be submitted to:

NYSDEC Chief Permit Administrator,  
625 Broadway, Albany NY 12233-1750, Telephone (518) 402-9167

**General Condition 4: Permit Modifications, Suspensions and Revocations by the Department**

The Department reserves the right to modify, suspend or revoke this permit in accordance with 6 NYCRR Part 621.

The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

**WATER QUALITY CERTIFICATION****CERTIFICATION**

1. The New York State Department of Environmental Conservation ("Department" or "NYS DEC") hereby certifies:
  - the Department has reviewed the certificate holder's Application for Federal Hydroelectric License Amendment (hereafter referred to as the "**Amendment Application**") and all other available pertinent information, including the **Settlement**;
  - the project will comply with Sections 301, 302, 303, 306 and 307 of the Federal Water Pollution Control Act as amended and as implemented by the limitations, standards and criteria of the state statutory and regulatory requirements set forth in 6NYCRR Section 608.9(a); and
  - the project will comply with applicable New York State effluent limitations, water quality standards and thermal discharge criteria set forth in 6NYCRR Parts 700-706.

This Water Quality Certification is issued pursuant to Section 401 of the Federal Water Pollution Control Act (33 USC 1341).

**CONTACTS:** Except as otherwise specified, all contacts with the Department concerning this certificate shall be addressed to:

New York State Department of Environmental Conservation  
Regional Permit Administrator  
317 Washington Street  
Watertown, NY 13601

Written submissions to the Department must include five (5) complete copies of the submission.

**SPECIAL CONDITIONS****A. ADMINISTRATION**

1. This certificate includes and incorporates the Raquette River "Settlement Offer" ("**Settlement**") dated March 13, 1998, and Application for License Amendment for Lower Raquette Hydroelectric Project, FERC Project #2330, ("**Amendment Application**") dated June 2006. Pursuant to the Settlement, on June 11, 1998 the Department issued a water quality certification for the Lower Raquette River Project and the Middle Raquette River Project. The June 11, 1998 water quality certification for the Lower Raquette River Project continues to be in full force and effect except as modified by this water quality certification.
2. **Inspections:** The project, including relevant records, is subject to inspection at reasonable hours and intervals, upon reasonable notice to the certificate holder, by an authorized representative of the Department to determine whether the applicant is complying with this certification. A copy of this certification, including the **Settlement** and **Amendment Application**, as well as the FERC license and all pertinent maps, drawings and special conditions must be available for inspection by Department staff during such inspections at the project.
3. **Emergencies:** With the exception of emergency provisions described in the **Settlement** (see subsections 3.4.1, 4.4.1, 6.4.1 and 7.4.1), the following procedures shall apply to activities conducted at the Project in response to an emergency:

Prior to commencement of emergency activities, the NYS DEC must be notified and must determine whether to grant approval. If circumstances require that emergency activities be taken immediately such that prior notice to the NYS DEC is not possible, then the NYS DEC must be notified by the Certificate Holder(s) within 24 hours of commencement of the emergency activities. In either case, notification must be by certified mail, telegram, or other written form of communication, including fax and electronic mail. This notification must be followed within 3 weeks by submission of the following information:



- (1) a description of the action;
- (2) location map and plan of the proposed action;
- (3) reasons why the situation is an emergency

All notifications, requests for emergency authorizations and information submitted to support such requests shall be sent to the Regional Permit Administrator at the address listed above.

4. Modifications and Revocations: The DEC reserves the right to exercise all available authority to modify or revoke this certificate when:
  1. the scope of the authorized activity is exceeded or a violation of any condition of this certificate or provisions of the FCL and pertinent regulation is found;
  2. the certificate was obtained by misrepresentation or failure to disclose relevant facts;
  3. new material information is discovered;
  4. environmental conditions, relevant technology, or applicable law or regulation have materially changed since the certificate was issued.
5. State May Require Site Restoration: If any work authorized by this certificate has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department may with authority require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

#### B. OPERATING CONDITIONS

6. Base Flows: Baseflow requirements as required by Section 5.2.3 and 5.3.3 of the Settlement will remain in effect until the License Amendment has been granted, turbine equipment upgrades (installation of Kaplan runners) are in service at all developments, and the revised Stream Flow and Water Level Monitoring Plan (SFWLMP) has been approved by the Department and fully implemented.
7. Bypass Flows: The certificate holder shall maintain bypass flows in accordance with the Settlement, in particular, Section 3.3.4.
8. Project Operations and Impoundment Fluctuations: The project's reservoirs shall be operated in a run-of-river mode in accordance with the Amendment Application (see Section B- 1.0). Impoundment level set points shall be at crest of dam or top of flashboards, whichever is higher. Proper instrumentation to ensure instantaneous run-of-river operations at each development will be required as part of this certificate.
9. Flow Monitoring: The certificate holder shall develop and submit to the Department a revised Stream Flow and Water Level Monitoring Plan (SFWLMP) within six months after issuance of the license amendment. This plan will include instrumentation to ensure instantaneous run-of-river operations at each development in the project. The proposed plan will identify the type of instrumentation appropriate to monitor instantaneous run-of-river operations and, upon approval by the Department, it will become part of this certificate. Operational bandwidths as proposed in the Amendment Application and associated correspondence have not yet been approved by the Department for monitoring compliance with instantaneous run-of-river operations. Such operations will be subject to final definition within the SFWLMP and must be approved by the Department prior to filing the SFWLMP with FERC. Alternate impoundment operating plans must be reviewed and approved by NYS DEC prior to being implemented. Emergencies shall be dealt with in accordance with Special Condition #3 of this Certificate.
10. Fish Protection and Downstream Fish Movement: Fish protection provisions and downstream fish movement provisions shall be provided in accordance with the Settlement (see Section 6.0). The one-inch trashrack installation and fish movement flow requirement at Norwood will be fully installed in 2007 (instead of 2010 (see Amendment Application Appendix E, Section 3.1.4)). Upstream eel passage will be installed at all four developments (see Section Exhibit E Section 3.1.4 of the Amendment Application).

**C. PROJECT MAINTENANCE AND CONSTRUCTION**

11. **NOTE:** All matters pertaining to "Project Maintenance and Construction" work affecting water quality, compliance with water quality standards, and this certificate shall be addressed to:

*Regional Permit Administrator*  
 New York State Department of Environmental Conservation  
 317 Washington Street  
 Watertown, NY 13601

12. **Maintenance Dredging:** The certificate holder shall install and maintain appropriate turbidity control structures while conducting any maintenance dredging activities in the intake/forebay area of the Project.
13. **Sediment Analysis and Disposal:** The certificate holder must sample any sediments to be disturbed or removed from the project waters and test them for contaminants. Sampling and testing shall be accomplished according to a protocol that is consistent with the Department's Technical and Operations Guidance 5.1.9 or applicable guidelines/regulations. The sampling protocol shall include a disposal protocol based on analytical sediment sampling results and current applicable regulations/guidelines. The sampling results are required to be submitted to the Department at least 45 days prior to the commencement of dredging or work that will disturb sediment in the project waters. Dredging or other excavation can not commence until the certificate holder also secures the Department's approval for the disposal or interim holding locations for any sediments to be removed from the project waters.
14. **Erosion and Sediment Control:** The certificate holder shall ensure that the following erosion and sediment/contaminant control measures, at a minimum, are adhered to during routine maintenance and construction that may result in sediments/contaminants entering any wetland or waterbody.
1. Isolate in-stream work from the flow of water and prevent discolored (turbid) discharges and sediments caused by excavation, dewatering and construction activities from entering any waterbody or wetland.
  2. Prohibit heavy construction equipment from operating below the mean high water level of project reservoirs and the Raquette River until the work area is protected by a watertight structure and dewatered.
  3. Stabilize any disturbed banks by grading to an appropriate slope, followed by armoring or vegetating as appropriate, to prevent erosion and sedimentation into any wetland or waterbody.
  4. Minimize soil disturbance, provide appropriate grading and temporary and permanent revegetation of stockpiles and other disturbed areas to minimize erosion/sedimentation potential.
  5. Protect all waters from contamination by deleterious materials such as wet concrete, gasoline, solvents, epoxy resins or other materials used in construction, maintenance and operation of the project.
  6. *Install and maintain erosion control structures on the down slope of all disturbed areas to prevent eroded material from entering any wetland or waterbody. Erosion control structures must be installed before commencing any activities involving soil disturbance and all erosion control structures must be maintained in a fully functional condition.*
  7. Ensure complete removal of all dredged/excavated material and construction debris from the bed and banks of all water areas to an approved upland disposal site.
  8. Ensure that all temporary fill and other materials placed in the waters of the river are completely removed, immediately upon completion of construction, unless otherwise directed by the Department.

15. Placement of cofferdams, construction of temporary access roads or ramps, or other temporary structures which encroach upon the bed or banks of the Raquette River or project reservoirs: The proposed design of all such structures as they pertain to water quality, to compliance with water quality standards, and to this certificate must be submitted to and approved by the Department prior to installation. The Department will conduct its review of the proposed design within 60 days after receipt of all materials it determines are necessary for completing such review.
16. River Flow: During any period of maintenance and/or construction activity, the certificate holder shall continuously maintain adequate flows immediately downstream of work sites to ensure that the water quality standards established for the Lower Raquette River as well as any special provisions of this certificate are met. If adequate river flows are not maintained, the certificate holder is required to notify the Department's Region 6 office in Watertown, within 24 hours of the incident.
17. Construction Drawdowns:
  - a. Whenever construction and/or maintenance activities require that the water level of project reservoirs be lowered and refilled, it shall be done gradually, as not to strand fish and other water dependent fauna. Until run-of-river operations are established, as required by this certification and the Amended License, baseflow requirements below the Raymondville Development, (Sections 5.2.3 and 5.3.3 of the Settlement) will be maintained during all construction drawdowns and refilling operations.
  - b. Once run-of-river operations are established, as required by this certification and the Amended License, for all Lower Raquette River developments, drawdowns must maintain run-of-river once the drawdown has been established and until refilling begins. During refilling operations, once run-of-river operations are established, a baseflow of at least 560 cfs (during normal or wet conditions) or 290 cfs (during drought conditions) will be maintained below the affected impoundment while other developments in the Project are required to maintain run-of-river operations. These baseflow requirements are consistent with baseflows established under Sections 5.2.3 and 5.3.3 of the Settlement for Raymondville to ensure water quality standards established for the Lower Raquette River are maintained as well as any special provisions of this certificate are met.
  - c. As to (a) and (b) above, the certificate holder shall consult with the Department prior to construction drawdowns to establish acceptable drawdown and refill timing, drawdown rates, and other special provisions. Such consultation shall also be appropriate in the event of a need for a deviation from the above provisions.
18. Turbidity Monitoring: During maintenance or construction-related activities in or near the Raquette River or project reservoirs, the certificate holder will monitor the turbidity of project waters at a point immediately upstream of the work area and at a point no more than 100 feet downstream from the work area. The certificate holder specifically agrees that if, at any time, turbidity measurements from the downstream locations exceed the measurements from the upstream locations, all related construction on the project will cease until the source of the turbidity is discovered and the situation is corrected. The certificate holder is required to report any events where turbidity measurements from the downstream locations exceed the measurements from the upstream locations to the Department's Region 6 office, Watertown, within 24 hours of the incident.
19. Precautions Against Contamination of Waters: All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.
20. No Interference With Navigation: There shall be no unreasonable interference with navigation by the work herein authorized.
21. SPDES General Permit for Stormwater: All Activities at the project requiring the disturbance of greater than one acre must obtain coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities (GP-02-01).
22. Notifications: The Regional Permit Administrator must be notified in writing at least 60 days prior to commencing any project maintenance or construction work pertaining to water quality, compliance with water quality standards or to this certificate.



DEC PERMIT NUMBER	6-4099-00006/00001		PAGE <u>7</u> OF <u>7</u>
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**D. PUBLIC ACCESS AND RECREATION**

23. Public access and recreational opportunities shall be provided in conformance with the Settlement, (see Section 3.8).

cc: Settlement Participants  
M. Salas, FERC  
Service List, FERC Project #2330

**From:** Hogan, Chris M (DEC) <[chris.hogan@dec.ny.gov](mailto:chris.hogan@dec.ny.gov)>  
**Sent:** Wednesday, August 14, 2019 2:01 PM  
**To:** Zehr, Jason <[Jason.Zehr@brookfieldrenewable.com](mailto:Jason.Zehr@brookfieldrenewable.com)>  
**Cc:** VanMaaren, Chris C (DEC) <[chris.vanmaaren@dec.ny.gov](mailto:chris.vanmaaren@dec.ny.gov)>  
**Subject:** Brookfield WQCs

**CAUTION:** This email originated from outside of the organization. Do not click on links or open attachments unless you recognize content is safe. Please report suspicious emails [here](#)  
**ATTENTION:** Ce courriel provient d'une source externe, ne cliquez pas sur les liens et n'ouvrez pas les pièces jointes, à moins que vous en reconnaissiez la source. Veuillez nous aviser [ici](#) de tout courriel suspect.

Jason – Chris VanMaaren forwarded me your email requesting that the NYSDEC confirm that the Section 401 Water Quality Certificates (WQC) for the Brookfield Renewable facilities listed below are still in effect.

Lower Raquette River (P-2330) – WQC effective date of October 2006  
Middle Raquette River (P-2320) – WQC effective date of October 2006  
School Street (P-2539) – WQC effective date of October 2006  
Hoosic River (P-2616) – WQC effective date of September 2002

This email serves to confirm that the WQCs for the above reference facilities were issued to expire concurrent with the FERC license. As such, all of the NYSDEC WQCs are valid and in full effect for these facilities.

If you need anything further from the NYSDEC please contact me.

Christopher M. Hogan  
Chief, Major Project Management Unit  
Department of Environmental Conservation  
Division of Environmental Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, NY 12233-1750  
(518) 402-9151  
[chris.hogan@dec.ny.gov](mailto:chris.hogan@dec.ny.gov)

**APPENDIX D**  
**FISH PASSAGE**

Project No. 2330-New York  
Lower Raquette River Project  
Project No. 9222-New York  
Yaleville Development  
Erie Boulevard Hydropower, L.P.

9 August, 2013

Honorable Kimberly D. Bose  
Secretary  
**FEDERAL ENERGY REGULATORY COMMISSION**  
888 First Street, N.E.  
Washington, DC 20426

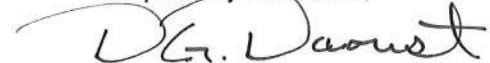
**SUBJECT: P-2330 Lower Raquette River Project, P-9222 Yaleville Project  
Eel Ladder Operations.**

Dear Secretary Bose:

In reference to a June 13, 2013 filing for the above subject projects, Erie Boulevard Hydropower, LP (E) is hereby notifying the Commission that the Eel Ladder structures required under the August 18, 2011 modified 401 Water Quality Certification issued by the New York State Water Department of Environmental Conservation are in place and fully operational. Please note, Federal and State Agencies are copied on filing.

Should you have any questions, please contact me at (315) 598-6131

Respectfully Submitted,



Daniel Daoust  
New York West Operations

xc: J. Elmer  
J. McVeigh  
R. Shantle  
S. Murphy  
J. Gamble  
A. Snyder  
M. Johnson  
J. Kurimski  
B. Bush  
J. Ripton  
R. McKenna  
M. Stanley  
A. Richardson (NYSDEC)  
S. Patch (USFWS)  
G. Cross (FERC-NYRO)

Document Content(s)

Eel_ladder_8_9_13.PDF.....	1-1
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Brookfield Renewable Power  
Regional Operating Center  
Potsdam, New York 13676

Phone: 315/267-1020 New York East  
Fax: 315/742-1165 184 Elm St.

[www.brookfieldpower.com](http://www.brookfieldpower.com)

ELECTRONICALLY FILED

April 13, 2010

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

SUBJECT: Carry Falls Project P-2060, Upper Raquette River Project P-2084,  
Middle Raquette River Project P-2320 and Lower Raquette River Project P-2330  
Article 401 - 2009 Annual Report

Dear Secretary Bose:

Article 401 of each of the February 13, 2002 orders issuing new licenses for the Carry Falls Project, Upper Raquette River Project and the Middle Raquette River Project and the Order Approving Settlement Offer and Issuing New License for the Lower Raquette River Project requires Erie Boulevard Hydropower, LP (Erie) to file an Annual Report. The report shall summarize license measures implemented in the previous year and license measures to be undertaken in the current calendar year. Erie is herein filing the 2009 Annual Report for all of these projects in letter format.

### **Carry Falls Project P-2060**

#### Measures Implemented in 2009:

No measures were required to be implemented in 2009.

#### Plans developed in 2009 pursuant to license requirements:

Erie filed the annual Bald Eagle Management Report required by Article 407 with the Commission on January 13, 2009. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

#### Measures to be Implemented in 2010:

No measures are required to be implemented in 2010.

#### Resource benefits gained:

The Carry Falls reservoir guide curve was implemented in 2002 and the operating limits of

the reservoir were adhered to in 2009, thereby maintaining the environmental benefits within and downstream of the reservoir.

### **Upper Raquette River Project P-2084**

#### Measures Implemented in 2009:

No measures were required to be implemented in 2009.

#### Plans developed in 2009 pursuant to license requirements:

Erie filed the annual Bald Eagle Management Report required by Article 407 with the Commission on January 13, 2009. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission’s regulations was filed on March 30, 2009.

#### Measures to be Implemented in 2010:

No measures are required to be implemented in 2010.

#### Resource benefits gained:

There were no license measures required to be implemented during 2009. Consequently, specific resource benefits gained during 2009 were not quantifiable, but measures implemented since license issuance in February 2002 continue to be significant.

### **Middle Raquette River Project P-2320**

#### Measures Implemented in 2009:

No measures were required to be implemented in 2009.

#### Plans developed in 2009 pursuant to license requirements:

The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission’s regulations was filed on March 30, 2009.

#### Measures to be Implemented in 2010:

In 2010, trash racks will be installed at the Colton Development as required in Section 6.3.3 of the Settlement as incorporated in the issued license for this project.

#### Resource benefits gained:

There were no license measures required to be implemented during 2009. Consequently, specific resource benefits gained during 2009 were not quantifiable, but measures implemented since license issuance in February 2002 continue to be significant.

### **Lower Raquette River Project P-2330**

Measures Implemented in 2009:

American eel ladders were installed at the Norwood and Norfolk developments in 2009 as required by the Commission's Order Amending and Accelerating Fish Protection and Downstream Passage Schedule, Paragraph J, dated December 5, 2006.

Plans developed in 2009 pursuant to license requirements:

The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

Erie issued the Lower Raquette River Project Draft Stream Flow and Water Level Monitoring Plan, revisions 3 and 4 for comments. Additional comments were received from NYSDEC and Erie worked with the NYSDEC to address those comments. The final revision to the plan received approval from the NYSDEC and US Fish and Wildlife Service in 2010 and was subsequently filed with FERC in 2010.

Measures to be Implemented in 2010:

No measures are required to be implemented in 2010.

Resource benefits gained:

The installation of the two eel ladders during 2009 provides American eels with an additional means of moving upstream in the Raquette River and more available access to habitat above those developments which benefits that resource and other resources which depend on eels.

If you have any questions regarding this report, please contact Dan Daoust at (315) 598-6131 or myself at (315) 267-1036.

Very truly yours,

Daniel F. Parker  
Compliance Specialist  
Erie Boulevard Hydropower, LP

xc: T. Uncher  
J. Elmer  
D. Daoust  
S. Murphy

Document Content(s)

Raquette Article 401 to FERC 041310.PDF.....1-3



**Brookfield Renewable Power**



St. Lawrence River Operations  
Erie Boulevard Hydropower, L.P.  
184 Elm St.

Tel: (315) 267-1020  
Fax: (315) 742-1165  
www.brookfieldpower.com  
Potsdam, NY 13676

ELECTRONICALLY FILED

April 14, 2009

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

SUBJECT: Carry Falls Project P-2060, Upper Raquette River Project P-2084, Middle Raquette River Project P-2320 and Lower Raquette River Project P-2330 Article 401 - 2008 Annual Report

Dear Secretary Bose:

Article 401 of each of the February 13, 2002 orders issuing new licenses for the Carry Falls Project, Upper Raquette River Project and the Middle Raquette River Project and the Order Approving Settlement Offer and Issuing New License for the Lower Raquette River Project requires Erie Boulevard Hydropower, LP (Erie) to file an Annual Report. The report shall summarize license measures implemented in the previous year and license measures to be undertaken in the current calendar year. Erie is herein filing the 2008 Annual Report in letter format.

**Carry Falls Project P-2060**  
**Measures Implemented in 2008:**

No measures were required to be implemented in 2008.

**Plans developed in 2008 pursuant to license requirements:**

No plans were required to be filed in 2008. Erie filed the annual report required by Article 407 with the Commission on January 13, 2009. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

**Measures to be Implemented in 2009:**

No measures are required to be implemented in 2009.

**Resource benefits gained:**

The Carry Falls reservoir guide curve was implemented in 2002 and the operating limits of the

reservoir were adhered to in 2008, thereby maintaining the environmental benefits within and downstream of the reservoir environment.

### **Upper Raquette River Project P-2084**

#### **Measures Implemented in 2008:**

No measures were required to be implemented in 2008.

#### **Plans developed in 2008 pursuant to license requirements:**

No plans were required to be filed in 2008. Erie filed the annual report required by Article 407 with the Commission on January 13, 2009. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

#### **Measures to be Implemented in 2009:**

No measures are required to be implemented in 2009.

#### **Resource benefits gained:**

There were no license measures required to be implemented during 2008. Consequently, specific resource benefits gained during 2008 were not quantifiable, but measures implemented since license issuance in February 2002 continue to be significant.

### **Middle Raquette River Project P-2320**

#### **Measures Implemented in 2008:**

No measures were required to be implemented in 2008.

#### **Plans developed in 2008 pursuant to license requirements:**

The Stream Flow and Water Level Monitoring Plan for the Middle Raquette River Project was filed in 2008 as required by Article 402 and, subsequently, approved by the Commission. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

#### **Measures to be Implemented in 2009:**

No measures are required to be implemented in 2009.

#### **Resource benefits gained:**

There were no license measures required to be implemented during 2008. Consequently, specific resource benefits gained during 2008 were not quantifiable, but measures implemented since license issuance in February 2002 continue to be significant.

## **Lower Raquette River Project P-2330**

### **Measures Implemented in 2008:**

American eel ladders were installed at the East Norfolk and Raymondville developments in 2008 as required by the Commission's Order Amending and Accelerating Fish Protection and Downstream Passage Schedule, Paragraph J, dated December 5, 2006.

### **Plans developed in 2008 pursuant to license requirements:**

No plans were required to be filed in 2008. Erie issued the Lower Raquette River Project Draft Stream Flow and Water Level Monitoring Plan – Revision 2 for comments. Substantial comments were received from NYSDEC and Erie is working with the NYSDEC to address those comments and will further revise the plan, if needed. The Licensed Hydropower Development Recreation Report – Form 80 required by Section 8.11 of the Commission's regulations was filed on March 30, 2009.

### **Measures to be Implemented in 2009:**

American eel ladders will be installed at the Norwood and Norfolk developments in 2009 as required by the Commission's Order Amending and Accelerating Fish Protection and Downstream Passage Schedule, Paragraph J, dated December 5, 2006.

### **Resource benefits gained:**

The installation of the two eel ladders during 2008 provides American eels with an additional means of moving upstream in the Raquette River and more available access to habitat above those developments which benefits that resource and other resources which depend on eels.

If you have any questions regarding this report, please contact me at (315) 2671036.

Very truly yours,

Daniel F. Parker  
Compliance Specialist  
Erie Boulevard Hydropower, LP

xc: T. L. Smith

20090414-5164 FERC PDF (Unofficial) 4/14/2009 11:22:25 AM

Document Content(s)

Raquette Article 401 to FERC 041409.PDF.....1-3

P-9222

**Joseph Enrico**

---

**From:** Alice Richardson [aprichar@gw.dec.state.ny.us]  
**Sent:** Thursday, February 14, 2008 3:19 PM  
**To:** Joseph Enrico  
**Subject:** Re: Upstream eel plan for P-2330 Lower Raquette and P-9222, Yaleville

Yes, DEC is ok with the plan.

On another note, DEC is still waiting for a revised Flow and Water Level monitoring plan from Brookfield.

Alice

Alice P.M. Richardson  
Biologist 1 (ecology)  
NYS DEC Bureau of Habitat  
Instream Habitat Protection Unit  
Phone: (315) 785-2267  
Fax: (315) 785-2242

>>> "Joseph Enrico" <Joseph.Enrico@ferc.gov> 2/14/2008 1:06 PM >>>  
Alice, I don't know if you received my email regarding DEC's concurrence with the Brookfield plan filed on December 17, 2007. Steve Patch emailed in agreement with the plan but I needed to know if DEC is OK with it as well. Let me know if you have any questions.

Regards,

Joe Enrico

P-2330

**Joseph Enrico**

---

**From:** Stephen\_Patch@fws.gov  
**Sent:** Friday, January 25, 2008 8:32 AM  
**To:** Joseph Enrico  
**Cc:** Alice Richardson  
**Subject:** Re: Lower Raquette River eel passage plan

Yes, we are in agreement.

**Steve Patch**  
**Fish & Wildlife Biologist**  
U.S. Fish & Wildlife Service  
New York Field Office (Region 5)  
3817 Luker Rd.  
Cortland, NY 13045  
(607) 753-9334 (voice)  
(607) 753-9699 (fax)  
<http://nyfo.fws.gov> (web)  
[stephen\\_patch@fws.gov](mailto:stephen_patch@fws.gov) (email)

"Joseph Enrico" <[Joseph.Enrico@ferc.gov](mailto:Joseph.Enrico@ferc.gov)>

01/23/2008 04:31 PM

To "Alice Richardson" <[aprichar@gw.dec.state.ny.us](mailto:aprichar@gw.dec.state.ny.us)>,  
<[Stephen\\_Patch@fws.gov](mailto:Stephen_Patch@fws.gov)>

cc

Subject Lower Raquette River eel passage plan

Alice and Steve,

Just wanted to confirm that you are in concurrence with Brookfield's submission of the final eel passage plan filed on December 17, 2007. Their cover letter indicates they addressed all your comments on the draft plan but I needed to confirm that you are in agreement.

Thanks and call if any questions.

Joe Enrico  
(212) 273-5917

2/14/2008



United States Department of the Interior  
OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
408 Atlantic Avenue – Room 142  
Boston, Massachusetts 02210-3334



August 23, 2006

9043.1  
ER-06/785

Magalie Salas, Secretary  
Federal Energy Regulatory Commission  
Mail Code: DLC, HL-11.2  
888 First St., NE  
Washington, DC 20426

**RE: COMMENTS**  
**Lower Raquette River Hydroelectric Project, FERC No. 2330-063**  
**Application for Amendment of License**  
**St. Lawrence County, New York**

Dear Ms. Salas:

The U.S. Department of the Interior (Department) has reviewed the August 3, 2006, "NOTICE OF APPLICATION FOR AMENDMENT OF LICENSE AND SOLICITING COMMENTS, MOTIONS TO INTERVENE, AND PROTESTS" regarding the application for amendment of license filed by Erie Boulevard Hydropower, LP (Erie), for the Lower Raquette River Hydroelectric Project, located on the Raquette River in St. Lawrence County, New York. The licensee proposes to: (1) increase the capacity from 12.0 Mw to 18.5 Mw by installing new turbines in each of the four powerhouses; (2) convert operations from the existing store-and-release mode to run-of-river; (3) accelerate the implementation of fish protection and downstream passage measures at the Norwood development from 2010 to 2007; and, (4) install upstream eel passage at all four developments.

The Department participated in consultation with Erie and other parties during development of the amendment application. Erie agreed to mitigate for potential project impacts by providing the following measures: (1) converting operations to run-of-river; (2) accelerating the implementation date for fish protection and downstream passage measures at Norwood; and, (3) installing upstream eel passage at all four developments.

The run-of-river operation will supersede the base flow requirements in the license and the settlement. The Federal Energy Regulatory Commission (FERC) should ensure that the project operates in a strict run-of-river mode where inflow equals outflow at all times. The Licensee has agreed to consult with the U.S. Fish and Wildlife Service (Service) and the New York State

Department of Environmental Conservation (NYSDEC) to modify the existing stream flow monitoring plan to incorporate verification of run-of-river operations.

2

The Department has no objection to the issuance of an amendment to this license provided all of the mitigation measures are incorporated into the license. Erie should consult with the Service and the NYSDEC regarding the actual design of the eel ladders to ensure that the latest technology is incorporated so that the ladders are as efficient as possible in moving eels up the Raquette River. Thank you for the opportunity to comment on this amendment application.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew L. Raddant", is displayed on a light blue rectangular background.

Andrew L. Raddant  
Regional Environmental Officer



## Submission Contents

U.S. DOI comments on P-2330-063, Lower Raquette Project, Application for  
Amendment of License, NY.

LRaqamend-DOI.pdf ..... 1-2



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

3817 LUKER ROAD  
CORTLAND, NY 13045

September 10, 2002

Mr. Sam Hirschey  
Reliant Energy  
225 Greenfield Parkway  
Suite 201  
Liverpool, NY 13088

**RE: Lower Raquette River Hydroelectric Project (FERC #2330)  
Article 402 – Streamflow Monitoring Plan**

Dear Mr. Hirschey:

The U.S. Fish and Wildlife Service (Service) has reviewed the August 16, 2002, Draft Streamflow Monitoring Plan (Draft Plan) for the Lower Raquette River Hydroelectric Project. The Draft Plan is based on the Offer of Settlement (Settlement) dated March 13, 1998, and signed by the Service, Reliant Energy's predecessor (Niagara Mohawk Power Corporation [NMPC]), and other parties. The agreements in the Settlement were incorporated into the license issued by the Federal Energy Regulatory Commission on February 13, 2002. The Draft Plan has several inconsistencies with the Settlement and license that must be addressed in the final plan.

The license requires staff gauges or monuments in the bypassed reaches to allow independent verification of minimum flows by the agencies or the general public. Such measures have not been included in the Draft Plan; the final plan should include provisions for staff gauges or monuments.

The minimum flows for the bypassed reaches that were agreed to in the Settlement and became part of the Project's license were considered "nominal" flows; that is, the actual flows could be higher or lower depending on the impoundment elevation. The anticipated flow ranges which were identified by NMPC and included in the Settlement (and ultimately became part of the license) were deemed acceptable by the Service and other signatories. The Service previously reviewed the Streamflow Monitoring Plans for the Upper Raquette River (FERC #2084) and Middle Raquette River (FERC #2320) Projects (which were also part of the Settlement) and found that the flow ranges included in the monitoring plans were similar to, or narrower than, the flow ranges identified in the Settlement and licenses. However, for the Lower Raquette River Project, the flow ranges for the two bypassed reaches, Norfolk and East Norfolk, were much wider than those identified in the Settlement and license.

The required minimum flow at East Norfolk is 75 cubic feet per second (cfs), with a proposed range of 65 to 85 cfs. The Draft Plan identifies the flow range as 56 to 95 cfs. A minimum flow of 56 cfs is unacceptably low for this bypassed reach and is not consistent with the Settlement.

The flow range is also too great. At Norfolk, the flow is divided into two equal release points, each of which were to receive 37.5 cfs, with a relatively narrow range of 35 to 40 cfs. The orifice openings have ranges of 35 to 42 cfs and 33 to 43 cfs, which are slightly wider than those proposed in the Settlement. However, the weir opening has an unacceptable range of 22 to 58 cfs, where the higher flow is over 2.5 times greater than the lower flow. The combined flow from the two release points at the lowest impoundment elevation is an unacceptable 55 cfs and is not consistent with the license.

If the weir and orifice openings cannot be modified to decrease the flow range, then the flows at the lowest impoundment elevations should be increased to equal the lowest portion of the range identified in the Settlement and license. The Service and other parties specifically requested identification of the anticipated flow ranges before agreeing to the nominal flow concept in the Settlement; our signature on the Settlement was based on the data provided.

Two developments do not have minimum bypassed reach flows – Norwood and Raymondville. The license requires a **minimum** release of 20 cfs for downstream fish movement. The “nominal flow” clause (Section 3.2.2 of the Settlement), applies only to the minimum bypassed reach flow section (3.3) of the Settlement, not the fish movement portion. The Draft Plan identifies **nominal** flows for these two sites, which is in conflict with both the Settlement and the license. The Draft Plan identifies a flow range of 19 to 21 cfs for downstream fish movement at Raymondville. This range is within a reasonable margin of error and does not present a problem. However, at Norwood, the range is identified as 12 to 35 cfs. A flow of 12 cfs is unacceptable as a safe fish conveyance flow. The Service has traditionally used 20 cfs as a guideline for safe fish conveyance; hence the agreement in the Settlement for a 20 cfs release. The release structure at Norwood should be modified to guarantee **at least** 20 cfs at all times.

The Service has no objections to the Streamflow Monitoring Plan provided that the staff gauges or monuments are installed as agreed to in the Settlement, the minimum bypassed reach flow ranges more accurately reflect the license requirements, and a 20 cfs minimum flow is guaranteed for fish conveyance at Raymondville and Norwood.

We appreciate the opportunity to provide comments on the Draft Streamflow Monitoring Plan. If you have any questions or need additional information, contact Steve Patch at 607-753-9334.

Sincerely,



David A. Stilwell  
Field Supervisor

cc: NYRU, Rome, NY (B. Carpenter)  
NYSDEC, Watertown, NY (L. Ollivett)  
DOI, Newton Corner, MA (J. Stolfo)  
FWS, Hadley, MA (C. Orvis)

**APPENDIX E**  
**THREATENED AND ENDANGERED**  
**SPECIES**

## IPaC resource list

This report is an automatically generated list of species and other resources such as ~~habitat~~ (collectively referred to as ~~resources~~) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project ~~area~~ referenced below. The list may also include trust resources that occur outside of the project ~~area~~ but that could potentially be directly or indirectly affected by activities in the project ~~area~~. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

St. Lawrence County, New York



## Local office

New York Ecological Services Field Office

☎ (607) 753-9334

☎ (607) 753-9699

3817 Luker Road Cortland, NY 13045-9385 <http://www.fws.gov/northeast/nyfo/es/section7.htm>

## Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
  2. [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.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#).

This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur on the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING  
SEASON (IF  
A  
BREEDING  
SEASON IS  
INDICATED  
FOR A BIRD  
ON YOUR  
LIST, THE  
BIRD MAY  
BREED IN  
YOUR  
PROJECT  
AREA  
SOMETIME  
WITHIN  
THE  
TIMEFRAME  
SPECIFIED,  
WHICH IS A  
VERY  
LIBERAL

ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE.

"BREEDS ELSEWHERE" INDICATES  
THAT THE BIRD DOES NOT LIKELY  
BREED IN YOUR PROJECT AREA.)

American Golden-plover *Pluvialis dominica*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bald Eagle *Haliaeetus leucocephalus*

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in shore areas from certain types of development or activities. <https://ecos.fws.gov/ecp/species/1626>



**Bobolink *Dolichonyx oryzivorus***

**Breeds May 20 to Jul 31**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Eastern Whip-poor-will *Antrostomus vociferus***

**Breeds May 1 to Aug 20**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Lesser Yellowlegs *Tringa avipes***

**Breeds elsewhere**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

**Semipalmated Sandpiper *Calidris pusilla***

**Breeds elsewhere**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wood Thrush *Hylocichla mustelina***

**Breeds May 10 to Aug 31**

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Probability of Presence Summary**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report. **Probability of Presence** ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season ( )

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

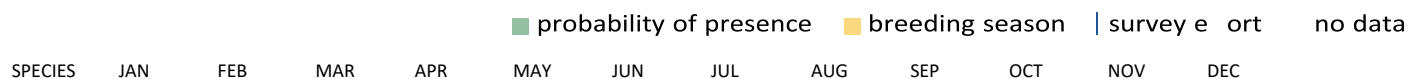
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

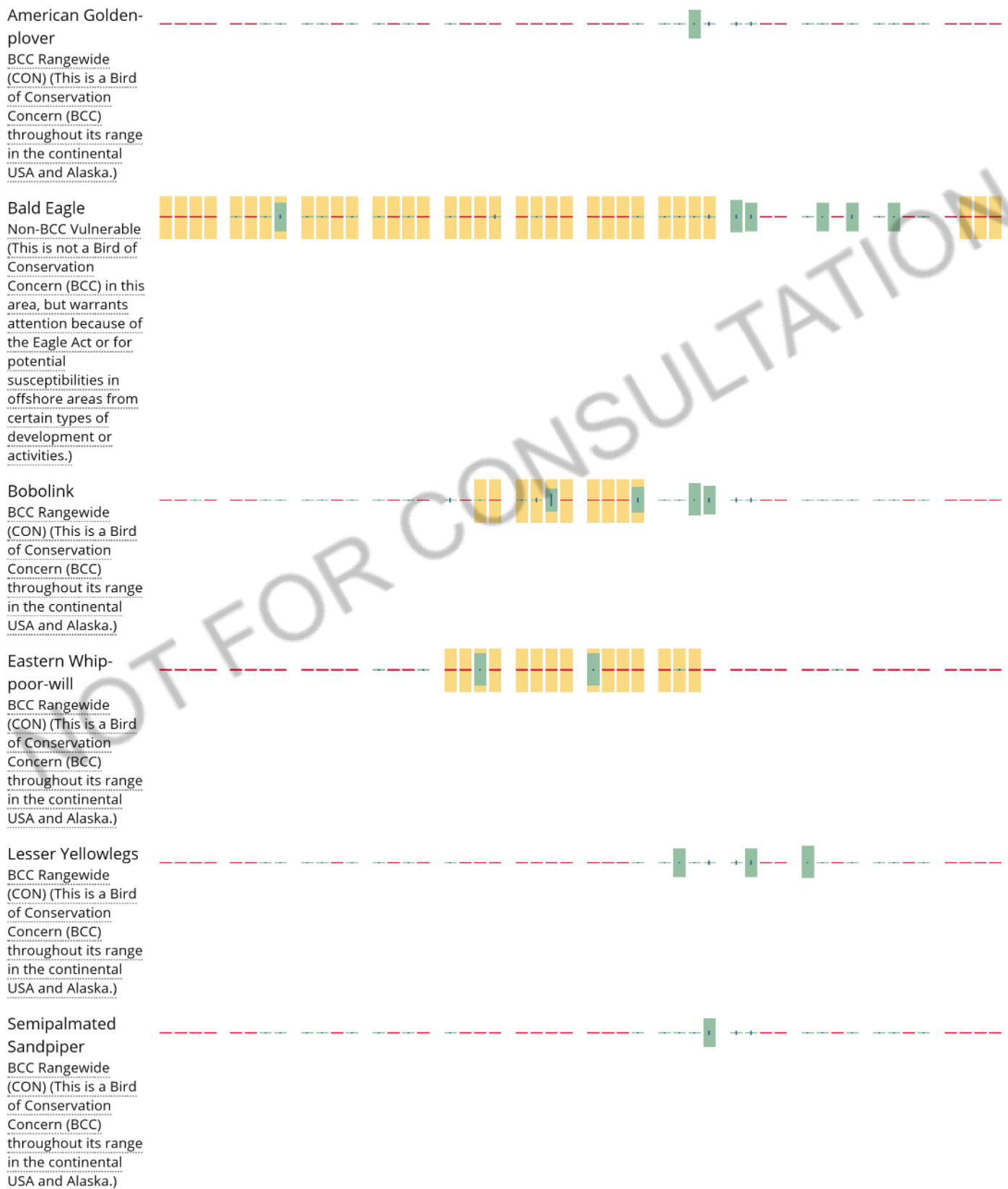
### No Data ( )

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas on the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Wood  
Thrush

BCC

Rangewide

(CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental  
USA and Alaska.)



**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to onshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## **Facilities**

### **National Wildlife Refuge lands**

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a

'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

### Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

#### FRESHWATER EMERGENT WETLAND

[PEM5E](#)

[PEM5C](#)

[PEM5A](#)

#### FRESHWATER FORESTED/SHRUB WETLAND

[PFO1E](#)

[PFO1/SS1E](#)

[PSS1E](#)

[PFO4/SS1E](#)

[PSS1/EM5E](#)

[PFO1C](#)

[PFO4E](#)

[PSS1C](#)

[PFO1/SS1C](#)

[PFO1A](#)

[PFO1/SS1Eh](#)

#### FRESHWATER POND

[PUBHx](#)

[PUBH](#)

LAKE

[L1UBHh](#)

RIVERINE

[R3UBH](#)

[R4SBC](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

#### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tubercled worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



**Brookfield Power**

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Fax (315) 461-8577  
www.brookfieldpower.com

**ORIGINAL**

Via Express Mail

November 7, 2006

Mr. David A. Stilwell  
Field Supervisor  
U.S. Fish and Wildlife Service  
New York Field Office  
3817 Luker Road  
Cortland, NY 13045-9349

**FILED**  
**OFFICE OF THE**  
**SECRETARY**  
**2006 NOV - 8 A 11: 37**  
**FEDERAL ENERGY**  
**REGULATORY COMMISSION**

**Subject: Lower Raquette River Hydroelectric Project (P-2330)**  
**Endangered Species Coordination**  
**USFWS Project File No. 61256**

Dear Mr. Stilwell:

By letter dated May 27, 2006, Erie Boulevard Hydropower, LP's (Erie) consultant Devine Tarbell & Associates, Inc (DTA) submitted a letter to the United States Fish and Wildlife Service (USFWS) requesting consultation and information on federally endangered and threatened species relative to Erie's license amendment application for the Lower Raquette River Hydroelectric Project (P-2330).

By letter dated June 26, 2006 the USFWS identified the presence of the bald eagle (*Haliaeetus leucocephalus*) in the vicinity of the St. Lawrence River. Additionally, one bald eagle nest was stated to be located within eight miles of the Raymondville Development of the Lower Raquette River Project and no critical habitat for this species was identified by the USFWS in the vicinity of the Project. Each of the aforementioned letters was included within Erie's Application for License Amendment for the Lower Raquette River Project filed with the Federal Energy Regulatory Commission (FERC) by letter dated June 30, 2006.

By letter dated July 27, 2006, FERC designated Erie to act as FERC's non-federal representative for the purpose of Section 7 Endangered Species Act (ESA) consultation for the Application for Amendment of License filed with FERC (with a copy sent to your office) in July 2006.

In accordance with the responsibility granted to us by FERC, we are writing to you concerning Section 7 of the Endangered Species Act (Act) [16 U.S.C. 1531 *et seq.*] consultation for the Lower Raquette River Project, which is located on the Raquette River in St. Lawrence County, NY. In the Application for Amendment of License distributed to your office in July 2006, Erie fully describes the overall project, and addresses the project's effects on threatened or endangered species and/or critical habitat.

Consistent with Section 7 of the Endangered Species Act (Act) [16 U.S.C. 1531 *et seq.*] as well as with the USFWS's Final ESA Section 7 Consultation Handbook (March 1998), Erie, acting as FERC's non-federal representative for the purpose of Section 7 ESA consultation, concludes that the proposed



November 7, 2006

Page 2 of 2

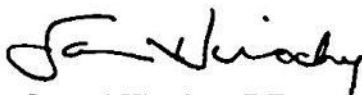
replacement of the existing turbine runners (construction will occur indoors within the existing, enclosed powerhouse structures at each facility) and the installation of seasonal upstream eel passage structures at each of the four developments that comprise the Project, will result in no effect on the bald eagle (*Haliaeetus leucocephalus*).

As part of the informal consultation process for the potential presence of the bald eagle (*Haliaeetus leucocephalus*) in the vicinity of the Lower Raquette River Project, a phone conversation was completed between Mr. David Culligan of Erie and Ms. Robyn Niver, Endangered Species Coordinator for the USFWS on November 3, 2006. During this conversation, Erie conveyed the nature and scope of the new work proposed under the amendment (turbine replacement work occurring indoors and installation of upstream eel conveyance structures at each development) and Erie conveyed its' "no effect" determination for the bald eagle and that further consultation would not be needed.

In accordance with the procedures outlined in Section 7 of the Endangered Species Act (Act) [16 U.S.C. 1531 *et seq.*] as well as the USFWS's Final ESA Section 7 Consultation Handbook, (March 1998), the finding of no effect to the bald eagle (*Haliaeetus leucocephalus*) by Erie (in their capacity as representative for the purpose of Section 7 ESA consultation) ends the consultation process for the ESA.

Thank you very much for your participation and cooperation in this matter.

Very Truly Yours,



Samuel Hirschey, P.E.  
Manager, Environmental, Licensing and Land Use

cc: Attached Distribution List  
M. Salas (FERC)  
R. Grieve (FERC)  
D. Culligan (Erie)  
M. Hoover (DTA)

## **DISTRIBUTION LIST FOR LOWER RAQUETTE AMENDMENT APPLICATION**

Mr. John Davis  
Adirondack Council  
P.O. Box D-2  
103 Hand Ave. Suite 3  
Elizabethtown, NY 12932

Ms. Robbin Marks, Director  
American Rivers, Inc.  
1025 Vermont Ave. NW  
Suite 720  
Washington, D.C. 20005-3516

Mr. Kevin Colburn  
American Whitewater  
328 N. Washington St.  
Moscow, ID 83843

Ms. Betty Lou Bailey, Chairperson  
Adirondack Mountain Club  
4029 Georgetown Square  
Schenectady, NY 12303-5300

Mr. Donald R. Brining  
St. Lawrence County Administrator  
St. Lawrence County Courthouse  
48 Court Street  
Canton, NY 13617-1194

Mr. Bruce Carpenter  
New York Rivers United  
P.O. Box 1460  
Market Street in Griffis Technology Park  
Rome, NY 13442-1460

Hon. Bernadette Castro, Commissioner  
N.Y.S. Office of Parks, Recreation &  
Historic Preservation  
Agency Building No. 1  
Empire State Plaza  
Albany, NY 12238

Commanding Officer  
U.S. Coast Guard  
MSO Buffalo  
1 Fuhrmann Blvd.  
Buffalo, NY 14203-3105

Ms. Jennifer Carlo  
Adirondack Park Agency  
P.O. Box 99, Route 86  
Ray Brook, NY 12977

Mr. Howard Cushing  
NYS Conservation Council  
96 Jones Rd.  
Poestenkill, NY 12140

Mr. Steven Silva  
U.S. Environmental Protection Agency  
Water Quality Branch  
JFK Federal Building  
Boston, MA 02203-0002

Ms. Alice Richardson  
New York State Department of  
Environmental Conservation  
317 Washington St.  
Watertown, NY 13601

Mr. William Wellman  
Trout Unlimited  
7 Helen St.  
Plattsburg, NY 12901

Mr. David Gibson  
The Association for the Protection of the  
Adirondacks  
897 St. Davids Lane  
Niskayuna, NY 12309

Roy Lamberton  
Trout Unlimited  
P.O. Box 90  
E Berne, NY 12059

Ms. Sheree Bonapart  
St. Regis Mohawk Tribe  
412 State Route 37, Box 8A  
Hogansburg, NY 13655

Mr. Andrew Fahlund  
Policy Director for Hydropower Programs  
American Rivers, Inc.  
1025 Vermont Avenue, Suite 720  
Washington, D.C. 20005

Mr. Duncan Hay  
National Park Service  
15 State Street  
Boston, MA 02109-3502

Ms. Grace Musumeci, Chief  
U.S. Environmental Protection Agency  
290 Broadway, 28<sup>th</sup> Floor  
New York, NY 10007-1823

Mr. Bruce R. Irwin  
NYS Department of Transportation  
Dulles State Office Building  
317 Washington St.  
Watertown, NY 13601-3744

Mr. James T. Kardatzke, Ph.D.  
Eastern Regional Office  
Bureau of Indian Affairs  
711 Stewarts Ferry Pike  
Nashville, TN 37217

Mr. William G. Little  
New York State Department of  
Environmental Conservation  
Division of Legal Affairs  
625 Broadway, 14<sup>th</sup> Floor  
Albany, NY 12233-1500

Mr. Mike Ludwig  
National Marine Fisheries Service  
Habitat & Protected Resources Div.  
212 Rogers Avenue  
Milford, CT 06460

Ms. Anne Hazzard  
Jordan Club  
25 Shutesbury Road  
Pelham, MA 01002

Mr. Steve Patch  
U.S. Fish & Wildlife Service  
3817 Luker Road  
Cortland, NY 13045

Mr. David Miller, Executive Director  
National Audubon Society  
200 Trillium Lane  
Albany, NY 12203

Regulatory Branch  
U.S. Army Corps of Engineers  
Buffalo District  
1776 Niagara Street  
Buffalo, NY 14207-3111

Mr. Steven Yugartis  
North Country Raquette River Advocates  
6 Division Street  
Potsdam, NY 13676

Mr. Paul Sanford  
American Canoe Association  
7432 Alban Station Blvd. Suite B-232  
Springfield, VA 22150

Robert Megantz  
Jordan Club  
1243 Marilla Ave.  
San Jose, CA 95129

**Brookfield Power**

New York Operations  
225 Greenfield Parkway, Suite 201  
Liverpool, NY 13088

Tel (315) 413-2700  
Fax (315) 461-8577  
www.brookfieldpower.com

ORIGINAL

Via Express Mail

2006 JUL 31 A 9:56 July 28, 2006

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

Subject: **Lower Raquette River Project FERC Project No. 2330**  
**Application for Capacity License Amendment**  
**Agency Correspondence Addendum**  
**Non-Internet Public**

Dear Secretary Salas:

As part of pre-filing consultation for Erie Boulevard Hydropower, LP's (Erie) Application for Capacity License Amendment for the Lower Raquette River Project P-2330 (filed by letter dated June 30, 2006), the U.S. Fish and Wildlife comment letter dated April 20, 2006 (contained in Erie's June 30<sup>th</sup> filing) recommended that Erie update consultation relative to threatened and endangered species. By letter dated May 27, 2006 (contained in Erie's June 30<sup>th</sup> filing), Erie initiated such consultation with both the USFWS and the New York State Department of Environmental Conservation's (NYSDEC) Natural Heritage Program regarding the presence or absence of threatened or endangered species in the vicinity of the Lower Raquette River Project.

By letter dated June 26, 2006 (included in Erie's June 30<sup>th</sup> filing), the USFWS responded by suggesting that FERC designate Erie (and/or Erie's representatives) as their non-Federal representative for the purposes of conducting consultation. USFWS also noted the presence of the bald eagle in the vicinity of the project area. Erie is willing to act as FERC's designated non-Federal representative if required, and the turbine replacement activities and change to run of river operations proposed under the amendment application are not expected to have an adverse impact on the bald eagle.

Additionally, Erie received the attached June 29, 2006 correspondence from the New York State Department of Environmental Conservation's (NYSDEC) Natural Heritage Program. Since this letter was received after Erie's June 30<sup>th</sup> amendment application filing, the letter was not included in that filing. And because the NYSDEC has indicated that its letter contains sensitive information, this filing is being submitted as Non-Internet Public. NYSDEC reviewed their database and identified the following species in the vicinity of the Lower Raquette Project.

**Yellow Lampmussel:** This species does not have a listed status with the State of New York; however it is classified as a vulnerable species.

A Mussel Survey was completed for the Lower Raquette Project in July 2000, and the presence of the species in the vicinity of the Norwood and Raymondville was documented. The populations were determined to be healthy, and the potential impact associated with the operation of the hydroelectric facilities was associated with the potential for water level variations. The switch from a store and pulse mode of operation to a run-of-river operation proposed by the license amendment application will further reduce water level

NON-INTERNET PUBLIC



Hon. Magalie R. Salas, Secretary  
July 28, 2006  
Page 2

variations. In their 2001 Environmental Assessment, FERC indicated there was no need to further investigate potential impacts to this species.

Although field investigations to document the status of the populations within the Raquette River were not requested or performed as part of pre-filing consultation, Erie's proposed change to run of river operation will reduce water level variations and is not expected to have an adverse effect on the health and robustness of the existing populations of Yellow Lampmussels in the vicinity of the Lower Raquette River Project.

**Lake Sturgeon:** This species is listed as Threatened by the State of New York.

Previous regulatory actions have not resulted in the identification of this species in the vicinity of the Lower Raquette Project; however the latest Natural Heritage database indicates that the species has been caught in the Raquette River below the Raymondville facility. Although habitat studies relative to Lake Sturgeon were not requested or performed as part of pre-filing consultation, Erie's proposed change to run of river operations will reduce water level variations and is not expected to have an adverse effect on Lake Sturgeon (minimizing flow perturbations is generally considered beneficial to fisheries habitat).

**Downy Phlox:** This plant species is listed as Endangered by the State of New York.

Previous regulatory actions have not resulted in the identification of this species in the vicinity of the Lower Raquette Project; however the latest Natural Heritage database indicates that the species has been identified in an unspecified location in Norwood. The habitat preference for this plant species is meadows and wooded areas with dry soils (<http://www.nearctica.com/flowers/otos/polemon/Ppilosa.htm>). Although habitat studies for the Downy phlox were not requested or performed as part of pre-filing consultation, the preferred habitat of dry soils in a meadow or woodland setting are not expected to be adversely impacted by Erie's proposed change to run of river operations or by any work activities associated with turbine installation since all such work will occur inside each powerhouse of the Lower Raquette River Project.

If you have any questions or comments, please do not hesitate to contact the undersigned at (315) 413-2792.

Very truly yours,



David W. Culligan, P.E.  
Licensing Coordinator

Enclosure

cc:

W. Little, NYSDEC  
A. Richardson, NYSDEC  
N. Conrad, NYSDEC  
B. Fenlon, NYSDEC  
S. Hirschey, Erie  
T. Skutnik, Erie  
T. Smith, Erie  
W. Madden, Winston and Strawn  
M. Hoover, DTA



## New York State Department of Environmental Conservation

### Division of Fish, Wildlife & Marine Resources

#### New York Natural Heritage Program

625 Broadway, 5<sup>th</sup> floor, Albany, New York 12233-4757

Phone: (518) 402-8935 • FAX: (518) 402-8925

Website: [www.dec.state.ny](http://www.dec.state.ny)



Denise M. Sheehan  
Commissioner

June 29, 2006

Michael Hoover  
Devine Tarbell & Associates, Inc.  
970 Baxter Blvd  
Portland, Maine 04103

Redacted

Dear Mr. Hoover:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed FERC 2330 License Amendment Application - Lower Raquette River Project, area as indicated on the map you provided, located in St. Lawrence County.

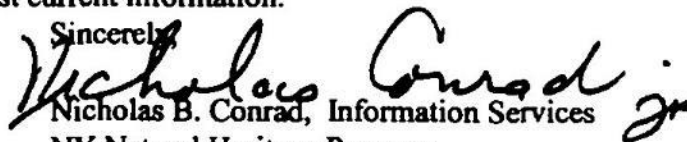
Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

The presence of rare species may result in this project requiring additional permits, permit conditions, or review. 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 appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

  
Nicholas B. Conrad, Information Services  
NY Natural Heritage Program

Enc.

cc: Reg. 6, Wildlife Mgr.  
Reg. 6, Fisheries Mgr.  
Mark Wothol, Bureau of Habitat, Albany





## USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, 5<sup>th</sup> Floor, Albany, NY 12233-4757 phone: (518) 402-8935

**NATURAL HERITAGE PROGRAM:** The NY Natural Heritage Program is a partnership between the NYS Department of Environmental Conservation (NYS DEC) and The Nature Conservancy. Our mission is to enable and enhance conservation of rare animals, rare plants, and significant communities. We accomplish this mission by combining thorough field inventories, scientific analyses, expert interpretation, and the most comprehensive database on New York's distinctive biodiversity to deliver the highest quality information for natural resource planning, protection, and management.

**DATA SENSITIVITY:** The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should not be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

**EO RANK:** A letter code for the quality of the occurrence of the rare species or significant natural community, based on population size or area, condition, and landscape context.

A-E = Extant: A=Excellent, B=Good, C=Fair, D=Poor, E=Extant but with insufficient data to assign a rank of A-D.

F = Failed to find. Did not locate species during a limited search, but habitat is still there and further field work is justified.

H = Historical. Historical occurrence without any recent field information.

X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.

U = Extant/Historical status uncertain.

Blank = Not assigned.

**LAST REPORT:** The date that the rare species or significant natural community was last observed at this location, as documented in the Natural Heritage databases. The format is most often YYYY-MM-DD.

### NY LEGAL STATUS – Animals:

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

**E - Endangered Species:** any species which meet one of the following criteria:

- Any native species in imminent danger of extirpation or extinction in New York.
- Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

**T - Threatened Species:** any species which meet one of the following criteria:

- Any native species likely to become an endangered species within the foreseeable future in NY.
- Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

**SC - Special Concern Species:** those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

**P - Protected Wildlife** (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

**U - Unprotected** (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

**G - Game** (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

### NY LEGAL STATUS – Plants:

The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

**E - Endangered Species:** listed species are those with:

- 5 or fewer extant sites, or
- fewer than 1,000 individuals, or
- restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
- species listed as endangered by U.S. Dept. of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

**T - Threatened:** listed species are those with:

- 6 to fewer than 20 extant sites, or
- 1,000 to fewer than 3,000 individuals, or
- restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
- listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

**R - Rare:** listed species have:

- 20 to 35 extant sites, or
- 3,000 to 5,000 individuals statewide.

**V - Exploitably vulnerable:** listed species are likely to become threatened in the near future throughout all or a significant portion of

their range within the state if causal factors continue unchecked.

**U - Unprotected;** no state status.

**FEDERAL STATUS (PLANTS and ANIMALS):** The categories of federal status are defined by the United States Department of the Interior as part of the 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). The species listed under this law are enumerated in the Federal Register vol. 50, no. 188, pp. 39526 - 39527. The codes below without parentheses are those used in the Federal Register. The codes below in parentheses are created by Heritage to deal with species which have different listings in different parts of their range, and/or different listings for different subspecies or varieties.

(blank) = No Federal Endangered Species Act status.

LE = Formally listed as endangered.

LT = Formally listed as threatened.

C = Candidate for listing.

LE,LT = Formally listed as endangered in part of its range, and as threatened in the other part; or, one or more subspecies or varieties is listed as endangered, and the others are listed as threatened.

LT,PDL = Populations of the species in New York are formally listed as threatened, and proposed for delisting.

**GLOBAL AND STATE RANKS** (animals, plants, ecological communities and others): Each element has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Intraspecific taxa are also assigned a taxon rank to reflect the intraspecific taxon's rank throughout the world. ? = Indicates a question exists about the rank. Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

#### GLOBAL RANK:

**G1 - Critically imperiled** globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.

**G2 - Imperiled** globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.

**G3 - Vulnerable:** Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.

**G4 - Apparently secure** globally, though it may be quite rare in parts of its range, especially at the periphery.

**G5 - Demonstrably secure** globally, though it may be quite rare in parts of its range, especially at the periphery.

**GH - Historically known**, with the expectation that it might be rediscovered.

**GX - Species believed to be extinct.**

#### NYS RANK:

**S1 - Critically imperiled:** Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

**S2 - Imperiled:** Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

**S3 - Vulnerable:** Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

**S4 - Apparently secure** in New York State.

**S5 - Demonstrably secure** in New York State.

**SH - Historically known** from New York State, but not seen in the past 15 years.

**SX - Apparently extirpated** from New York State.

SxB and SxN, where Sx is one of the codes above, are used for migratory animals, and refer to the rarity within New York State of the breeding (B)populations and the non-breeding populations (N), respectively, of the species.

**TAXON (T) RANK:** The T-ranks (T1 - T5) are defined the same way as the Global ranks (G1 - G5), but the T-rank refers only to the rarity of the subspecific taxon.

T1 through T5 - See Global Rank definitions above.

Q - Indicates a question exists whether or not the taxon is a good taxonomic entity.

Revised April,

**APPENDIX F**

**CULTURAL RESOURCES**

February 1, 2019

P-2060-New York  
Carry Falls Project  
P-2084-New York  
Upper Raquette River Project  
P-2320-New York  
Middle Raquette River Project  
P-2320-New York  
Lower Raquette River Project  
Erie Boulevard Hydropower, LP

Hon. Kimberly Bose, Secretary  
**Federal Energy Regulatory Commission**  
888 First Street  
Washington, D.C. 20426

**Subject: 2018 Raquette River Historic Properties Management Plan Annual Report**

Dear Secretary Bose:

Brookfield Renewable, (Brookfield), on behalf of licensee Erie Boulevard Hydropower, LP and in accordance with Article 405 of the Orders Issuing Licenses by the Federal Energy Regulatory Commission (FERC) on February 13, 2002, is hereby submitting the 2018 Historic Properties Management Plan (HPMP) Annual Report in letter form for the above referenced Hydroelectric Projects.

*Please be advised that there have been no ground disturbing activities that would be subject to the HPMP since the filing of the last report.*

If you have any questions, please feel free to contact me at (518) 743-2095 or at [Robert.Garrett@brookfieldrenewable.com](mailto:Robert.Garrett@brookfieldrenewable.com).

Sincerely,



Robert Garrett  
Compliance Specialist, Atlantic North Operations

cc: D. Maguire (Brookfield)  
M. Johnson  
J. Elmer  
R. Shantie  
M. Sutton

J. Spain (FERC-NYRO)  
N. Agnoli  
W. Abdulla  
M. Lehrer



Brookfield Renewable Energy Group  
399 Big Bay Road,  
Queensbury, NY 12804

Tel 518.743.2017  
Fax 518.745.4292  
[www.brookfieldrenewable.com](http://www.brookfieldrenewable.com)

D. Bagrow (NYSHPO)  
Chief Ron LaFrance Jr. (St. Regis Mohawk Tribe)

**APPENDIX G**

**MINIMUM FLOW REQUIREMENT**

**CORRESPONDENCE**

**FEDERAL ENERGY REGULATORY COMMISSION**  
**Washington, D. C. 20426**

**OFFICE OF ENERGY PROJECTS**

Project No. 2330-116, -117, -118, -119,  
-120, and -121 – New York  
Lower Raquette River Project  
Erie Boulevard Hydropower, L.P.

November 13, 2015

Mr. Ian Borlang  
Compliance Manager  
Erie Boulevard Hydropower, L.P.  
399 Big Bay Road  
Queensbury, NY 12804

Subject: Base flow Deviations - Article 402

Dear Mr. Borlang:

Thank you for your letters filed on August 21, September 8<sup>29</sup> and 29, and October 1, 16, and 29, 2015,<sup>30</sup> in which you report base flow deviations that occurred on August 12, 25, 27, and 31, September 18 and 22, and October 6 and 19, 2015, at the Raymondville Development of the Lower Raquette River Project No. 2330. The project consists of four developments (Norwood, East Norfolk, Norfolk, and Raymondville) and is located on the Raquette River. As discussed in more detail below, we will not consider the deviations that occurred on August 25, 27, and 31, September 18 and 22, and October 6, 2015, at your project violations of Article 402 of your license and your approved streamflow monitoring plan. However, the deviations that occurred on August 12, 2015 and October 19, 2015, are violations of Article 402 of the license and your approved streamflow monitoring plan.

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<sup>29</sup> Supplements filed on October 9, 13, and 14, 2015.

<sup>30</sup> Supplement filed on November 4, 2015.



### **License Requirements**

Article 402 of your license,<sup>3</sup> and your approved streamflow monitoring plan,<sup>4</sup> require you to maintain base flows downstream from the Raymondville Development. During “wet” and “normal” conditions, you must release a base flow of 560 cubic feet per second (cfs), and during “dry” conditions, you must release a base flow of 290 cfs. During “drought” conditions, you must maintain a base flow of at least the daily average flow of the Piercefield U.S. Geological Survey (USGS) gage. You must notify and consult with appropriate New York State Department of Environmental Conservation (New York DEC) staff to determine if modifications to the base flows are warranted. Definitions of monitored conditions at several points that constitute “wet,” “normal,” “dry,” or “drought” conditions are included in Section 5 of the Terms and Conditions from the Settlement Agreement dated March 13, 1998, and approved with your license.

Ordering paragraph (B) of the order approving your streamflow monitoring plan stipulates that if any of the required releases at any of the four project developments are less than the flow required by Article 402 and run-or-river operations, you must file a report with the Commission within ten days of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, any observed or reported adverse environmental impacts resulting from the incident, and the measures you implemented or proposed to ensure deviations do not recur.

### **Deviation**

The table below summarizes the deviations at the Lower Raquette River Project that are included in your letters:

**Table 1: Summary of Deviation Events**

<b>Date</b>	<b>Duration</b>	<b>Deviation</b>	<b>Mitigation</b>	<b>Violation?</b>
August 12, 2015	45 minutes	At 7:43 a.m., while securing the station for planned maintenance, you placed the station offline without ramping the unit down. The failure to ramp the unit down resulted in the base flow dropping to 191 cfs.	No option to restart generation due to planned maintenance. You allowed the spill to build and pass over the dam in order to meet base flow requirements.	YES

<sup>3</sup> *Erie Boulevard Hydropower, L.P.*, 98 FERC ¶ 61,143 (2002).

<sup>4</sup> *Erie Boulevard Hydropower, LP*, 133 FERC ¶ 62,169 (2010).

<b>Date</b>	<b>Duration</b>	<b>Deviation</b>	<b>Mitigation</b>	<b>Violation?</b>
August 25, 2015	Two Deviations - 45 minutes and 1 hour, respectively	At 2:51 p.m. and 10:05 p.m., you took the station offline in support of National Grid work. You recorded a low flow of 529 cfs at 3:15 p.m. and 10:45 p.m., respectively, and restored the minimum flow of 560 cfs at 4:00 p.m. and 11:45 p.m., respectively	The gage at the Raymondville gage station located downstream appears to be sensitive to flow changes or when the station is taken offline.	NO
August 27, 2015	8 hours and 15 minutes	At 10:19 a.m., the loss of water from the Hewittville Project (P-2499) caused an interruption in flow to the Raymondville station. You recorded flows below the minimum of 560 cfs at 1:30 p.m. and reached a low flow of 351 cfs at 3:15 p.m. You restored minimum flows at 9:45 p.m.	You dispatched a traveling operator to the Norwood station where he adjusted the pond level controller in order to draw further into the pond operating band with the intent to supplement stream flows.	NO
August 31, 2015	1 hour	At 10:19 a.m., you reduced the flow from the station in support of trash rack cleaning and maintenance. You recorded a flow of 543 cfs at 10:45 p.m. The flow held between 536 cfs and 543 cfs for one hour.	You completed the trash rack cleaning and maintenance operation and returned the station to full generation. The gage at the Raymondville gage station located downstream appears to be sensitive to flow changes or when the station is taken offline.	NO



Date	Duration	Deviation	Mitigation	Violation?
September 18, 2015	1 hour and 15 minutes	At 11:33 a.m., four upstream stations on the Lower Raquette River tripped offline due to a transmission bump. At 12:15 p.m., the Raymondville station tripped offline due to the low flow and the lowering of the pond level. You recorded a minimum flow of 79 cfs at 12:00 a.m.	You dispatched a traveling operator to restart the stations which restored generation and flows.	NO
September 22, 2015	30 minutes	At 1:22 a.m., the East Norfolk station tripped offline due to a governor alarm. At 1:30 a.m., the reduced flow arrived at the Raymondville station with a measured flow of 245 cfs. You restored minimum flows at 2:00 a.m.	You dispatched a traveling operator to East Norfolk station. Your traveling operator cleared the alarm and inspected the governor to determine possible causes for the alarm. The operator found no issues with the alarm and returned the unit to service.	NO
October 6, 2015	45 minutes	At 8:06 p.m., the Raymondville station tripped offline due to high trash rack differential. At 8:30 p.m., the flow fell below the minimum license flow for drought conditions of 290 cfs to 132 cfs. You restored minimum flows at 9:15 p.m.	You dispatched a traveling operator to station to restore the station generation and flow. You adjusted the set points on the trash rack differential alarm to a lower differential. You temporarily increased the spillage over the dam in an effort to help flush leaves past the station during leaf dropping season.	NO

<b>Date</b>	<b>Duration</b>	<b>Deviation</b>	<b>Mitigation</b>	<b>Violation?</b>
October 19, 2015	45 minutes	At 2:13 a.m., the Raymondville station tripped offline due to high trash rack differential. At 3:09 a.m., you returned the unit to service and restored minimum flow at 3:15 a.m. You recorded a low flow of 298 cfs.	At 2:13 a.m., the System Operator received a general alarm which corresponded to the unit tripping offline. You dispatched a traveling operator who arrived at the site, cleared the trash racks, and placed the unit back online.	YES

### **Review**

Based on our review of the available information, we will not consider the deviations that occurred at your project on August 25, 27, and 31, September 18 and 22, and October 6, 2015, violations of Article 402 of your license and your streamflow monitoring plan. We conclude that equipment sensitivity (August 25 and 31, 2015 deviations), high trash rack differential (October 6, 2015 deviation), and activities at upstream projects (August 27, September 18 and 22, 2015 deviations) caused the deviations. Concerning the deviations that occurred on the August 25 and 31, 2015, we note that you are in consultation with the resource agencies to conduct a flow study to determine the correlation between the USGS gage readings as measured at Raymondville and the flow measured at the area of interest referred to as the Cemetery Riffle in the license settlement agreement. In all cases, you notified the New York DEC of these deviations and received no comments. You observed no adverse environmental effects and you received no adverse environmental reports.

The deviations that occurred on August 12, 2015 and October 19, 2015, are violations of the license requirement of Article 402 and your approved streamflow monitoring plan. For the deviation that occurred on August 12, 2015, your operator misunderstood the granting of a simulated base flow and took the station offline without ramping the unit down during the event, which was outside the operating license parameters to be coordinated with the resource agencies. The normal procedure for securing the station is a ramped shut down that allows spill to build over the dam and continuously provide the required base flow. The failure to ramp the unit down resulted in the base flow dropping below the required minimum license flow.

For the deviation that occurred on October 19, 2015, your operator observed the trash rack differential alarms that occurred at 11:15 p.m. on October 18, 2015, and at 1:22 a.m. on October 19, 2015, and dismissed these alarms as not an immediate priority

Project No. 2330-116, *et al.* - 6 -

due to the volume of trash rack alarms received during leaf dropping season. At 2:13 a.m., your operator received a general alarm which corresponded to the unit tripping offline. Your operator failed to respond to the first series of trash rack differential alarms and the high trash rack differential eventually caused the unit to trip offline and interrupt the flow.

While these deviations are violations of your license, we will not take any additional enforcement action at this time. You will ensure that you communicate specific procedures to your operators when you expect a project to be operated outside the parameters of the operating license and ensure coordination with the proper resource agencies. Also, you retrained your operator on the importance of acknowledging and relaying the trash rack alarms to field personnel so that corrective measures can be determined in a timely manner. Finally, in both events, you notified the New York DEC of the deviations and received no comments. You observed no adverse environmental effects and you received no adverse environmental reports.

Thank you for your cooperation. If you have any questions concerning this letter, please contact Raymond James at (202) 502-8588 or [raymond.james@ferc.gov](mailto:raymond.james@ferc.gov).

Sincerely,

Kelly Houff  
Chief, Engineering Resources Branch  
Division of Hydropower Administration and Compliance

cc: Mr. Daniel Daoust  
Erie Boulevard Hydropower, L.P.  
33 West 1<sup>st</sup> Street, South  
Fulton, NY 13069



**FEDERAL ENERGY REGULATORY COMMISSION**  
**Washington, D. C. 20426**

**OFFICE OF ENERGY PROJECTS**

Project No. 2330-114 & 115 – New York  
Lower Raquette River Project  
Erie Boulevard Hydropower, L.P.

October 5, 2015

Ian Borlang  
Compliance Manager, Atlantic Operations  
Erie Boulevard Hydropower, L.P.  
399 Big Bay Road  
Queensbury, NY 12804

Subject: May 14, 2015 Article 402 base flow deviation and NYSDEC complaint

Dear Mr. Borlang:

On August 13, 2015, you filed a response to our July 31, 2015 letter wherein we requested more detailed information regarding a base flow excursion event that occurred on May 14, 2015 at the Raymondville station, a fish stranding incident occurring on the same day downstream of the station, and whether the excursion event was related to the fish stranding incident. The letter requested that you develop your response and a description of efforts to comply with the requirements of license Article 402 and your approved streamflow monitoring plan. The response was to include any associated correspondence with the New York State Department of Environmental Conservation (NYSDEC).

Your filing states that the May 14<sup>th</sup> stranding incident was unrelated to the base flow excursion, since the stranding occurred almost 1.5 hours earlier. Base flow was being provided through the Raymondville powerhouse until the excursion event occurred at approximately 2:16 p.m. The excursion event was due to flashboard work, plugging of trashracks and subsequent tripping of the upstream Norfolk station. The Raymondville station PLC automatically lowered outflow to maintain pond level (due to the trip at Norfolk) causing a reduction in downstream flows to approximately 403 cfs for approximately 30 minutes. Your operations center then dispatched the local operator to the Norfolk station to restore operation. Due to work being done at the Norfolk station, inflows were limited in order to provide a safe work environment for staff to perform the repairs.

Your letter notes that there are concerns regarding the readings of the downstream USGS flow gage, its proximity to Raymondville station, how the gage is calibrated, and the topography of the river below Raymondville. Since these incidents occurred, you have been in consultation with the NYSDEC in order to coordinate efforts to rectify differences between flow records and downstream measurements at the USGS gage. As part of this coordination, you have installed P-

interim flow monitoring devices at the downstream Cemetery riffle area (approximately four miles downstream of the project) and the USGS gage (approximately 0.4 miles downstream of the project). The purpose is to better understand the relationship between project outflows and downstream impacts at the USGS gage. In addition, barometric pressure loggers were installed at the powerhouse to measure the environmental effects on downstream locations as a result of unplanned or scheduled unit trips.

Your August filing adequately responds to our request for information on the causes and impacts of the May 14, 2105 base flow excursion and fish stranding. The Commission must be kept appraised of your efforts to monitor project impacts on downstream resources at the Lower Raquette project. Therefore, please provide a status report on the results of monitoring by December 31, 2015. Please file the requested information using the Commission’s eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. For assistance, please contact FERC Online support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Washington, D.C. 20426. The first page of your filing should include docket number P-2330-114&115.

Thank you for your cooperation regarding this matter. If you have any questions regarding this letter, please contact me at (212) 273-5917.

Sincerely,

Joseph Enrico  
Aquatic Resources Branch  
Division of Hydropower Administration  
and Compliance

Document Content(s) p-2330-  
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**FEDERAL ENERGY REGULATORY COMMISSION**  
**Washington, D. C. 20426**

**OFFICE OF ENERGY PROJECTS**

Project No. 2330-114 & 115 – New York  
Lower Raquette River Project  
Erie Boulevard Hydropower, L.P.

July 31, 2015

Ian Borlang  
Compliance Manager, Atlantic Operations  
Erie Boulevard Hydropower, L.P.  
399 Big Bay Road  
Queensbury, NY 12804

Subject: Report of deviation from base flow required by Article 402 and NYSDEC complaint

Dear Mr. Borlang:

On May 22, 2015, you filed a letter that describes a base flow deviation event that occurred on May 14, 2015 at the Raymondville Development of the Lower Raquette River Project No. 2330. On May 28, 2015, you also filed a letter responding to a New York State Department of Environmental Conservation (NYSDEC) report filed with this office on May 21, 2015 regarding a fish stranding incident which occurred below the Raymondville Development on May 14, 2015.

Pursuant to Article 402 of your project license and your approved streamflow monitoring plan, you are to maintain base flows downstream from the Raymondville Development.<sup>1</sup> During “wet” and “normal” conditions, you must release a base flow of 560 cubic feet per second (cfs) and 290 cfs during “dry” conditions. During “drought” conditions, you must maintain a base flow of at least the daily average flow as recorded at the Piercefield United States Geological Survey (USGS) gage. In addition, you must notify and consult with appropriate NYDEC staff to determine if modifications to the base flows are warranted. Ordering paragraph (B) of the order approving your streamflow monitoring plan stipulates that if any of the required releases at any of the four project developments are less than the flow required by Article 402 and run-or-river operations, you must file a report with the Commission within 10 days of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, any observed or reported adverse environmental impacts resulting from the incident, and the measures you implemented or proposed to ensure deviations do not recur.

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<sup>1</sup> Order approving settlement offer and issuing new license. 98 FERC ¶ 61,143 (issued February 13, 2002). Order approving revised stream flow monitoring plan under article 402. 133 FERC ¶ 62,169 (issued November 23, 2010).

On May 14, 2015, the NYSDEC reported a fish stranding incident by one of its Environmental Conservation Officers and noted at the time, there was no flow below the dam. Their letter also notes six previous flow excursions over the last ten months that occurred for various reasons. In your May 28<sup>th</sup> response you noted that while the two events occurred on the same day, they were unrelated as they occurred during different time periods. You also note that the project was meeting all license requirements at the time of the stranding and that there are no required bypass flows below the Raymondville Development. Lastly, your letter states that you are coordinating efforts with NYSDEC to rectify differences in flows measured at the downstream USGS gage and project records. In order for us to determine your compliance with Article 402 and the approved streamflow monitoring plan, please provide a description of these efforts including any associated documentation with NYSDEC. In addition, while the fish stranding incident and flow excursion event occurred at different times but on the same day, please clarify how the excursion event did not have any effect or relationship to the fish stranding incident.

Please file the requested information within 15 days of the date of this letter using the Commission’s eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. For assistance, please contact FERC Online support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Washington, D.C. 20426. The first page of your filing should include docket number P-2330-114&115.

If you have any questions regarding this letter, please contact me at (212) 273-5917.

Sincerely,

Joseph Enrico  
Aquatic Resources Branch  
Division of Hydropower Administration  
and Compliance

Document Content(s) p-2330-115.PDF.....1-2



Brookfield Renewable Energy Group  
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Fax: 518.745.4292  
www.brookfieldrenewable.com

Project No. P-2330-New York  
Hydropower, L.P.

Lower Raquette River Project

Erie Boulevard

August 13, 2015

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

**Subject: Response to Additional Information Request Regarding Report of Deviation  
from Base Flow Required by Article 402 and NYSDEC Complaint  
(P-2330-114&115)**

Dear Secretary Bose:

By letter dated July 31, 2015, Erie Boulevard Hydropower, LP (Erie), a subsidiary of Brookfield Renewable Energy Group (Brookfield), received a request for additional information pertaining to Erie's May 22, 2015 report of a deviation for the base flow required by Article 402 of the Lower Raquette River Project's (Project No. 2330) license and a complaint from the New York State Department of Environmental Conservation (NYSDEC) filed May 21, 2015 regarding a fish stranding incident which occurred below the Raymondville Development on May 14, 2015.

On May 14, 2015, the NYSDEC reported to Erie that there was a fish stranding incident noted by one of its Environmental Conservation Officers; at the time, there was no flow below the dam. According to Settlement excerpt 3.3.4.4 noted in the Appendix of the "Order Approving Settlement Offer and Issuing New License", issued February 13, 2002, "the licensee shall not be required to provide an instream flow in the bypass reach of the Raymondville Development." Also, according to the "Instream and fish movement flow releases" section of the "Order Approving Revised Stream Flow Monitoring Plan Under Article 402", issued November 23, 2010:

"At the Raymondville development, a 20 cfs fish movement flow is released from the trash sluice structure. This flow is released through an orifice 2.0 feet wide and 1.1 foot high. The orifice releases 19 to 21 cfs. No instream flow release is required at the Raymondville development; however, specified base flows are to be maintained downstream from the project."

On May 21, 2015, the NYSDEC filed a complaint with the Commission regarding the fish stranding incident, as well as six previous flow excursions at the Raymondville Development over the previous ten months that occurred for various reasons. In its May 28, 2015 response, Erie noted that, despite the two events occurring on the same day, they were unrelated. As noted in the NYSDEC's May 21, 2015 complaint letter, the incident of the fish stranding occurred at 12:55 PM; the base flow excursion is noted to have occurred at 2:30 PM and lasted through 2:45 PM. As

noted in Erie's May 28, 2015 excursion report, the unit trip that caused the base flow

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excursion did not occur until 1:57 PM, approximately an hour after the fish stranding had already occurred, and the base flow excursion did not occur until 2:16 PM. Therefore, the incident of the fish stranding was unrelated to the later base flow excursion. Due to repairs being performed on the flashboard system at the upstream Norfolk Development, inflows to the Norfolk Development (and, therefore, downstream facilities as well) were limited to provide safe work conditions for Erie staff to perform the repairs. However, the required base flow was still maintained via flow through the Raymondville powerhouse until the excursion at 2:16 PM occurred.

Since the fish stranding and base flow excursion, Erie has been in consultation with the NYSDEC and is coordinating efforts to rectify differences in flows measured at the downstream USGS gage and project records. On the day of the incidents, May 14, 2015, the NYSDEC had emailed Erie staff to indicate that the Raymondville Development was not spilling and a sturgeon had been stranded on some rocks; Erie responded that it would investigate the incident and determine the cause (see attached emails). On May 20, 2015, NYSDEC staff called Erie to indicate they were following through with the complaint letter regarding the Raymondville Development incidents; during this call, some strategies to alleviate future issues such as these were discussed, such as installing flow monitors at the Cemetery Riffle and USGS gage to understand the relationship between downstream impacts and the USGS gage. On August 5, 2015, Erie successfully deployed primary and back-up flow monitors at both the Cemetery Riffle, located approximately 4 miles downstream of the Raymondville dam, and at the USGS Gauge 04268000 - Raquette River at Raymondville, NY, located approximately 0.4 miles downstream of the Raymondville dam. In addition, a pair of calibrating barometric pressure loggers was deployed at the powerhouse. Next steps, as discussed with the NYSDEC, entail either waiting to capture an unplanned unit trip or performing a scheduled unit trip when appropriate water volumes are available to capture the effects of a unit trip at both downstream locations.

If you have any questions, please feel free to contact me at (518) 743-2095 or Ian Borlang at (518) 7432093.

Respectfully submitted,



Bob Garrett  
Compliance Specialist  
Eastern Region - Atlantic Operations

xc: J. Elmer  
J. McVaigh  
J. Gamble  
I. Borlang  
D. Daoust  
C. Balk (NYSDEC)

**EMAIL NO. 1**

**From:** Garrett, Robert  
**Sent:** Thursday, May 14, 2015 1:18 PM  
**To:** Latremore, Erik J (DEC)  
**Cc:** Daoust, Daniel; [Stephen.Patch@fws.gov](mailto:Stephen.Patch@fws.gov); Gamble, John; Borlang, Ian; McVaigh, John **Subject:**  
Re: Lower Raquette (Raymondville)

Erik,

We're looking into this right now. We'll get back to you soon with an answer.

Thanks,  
Bob Garrett

Sent from my iPhone

On May 14, 2015, at 1:11 PM, "Latremore, Erik J (DEC)" <[erik.latremore@dec.ny.gov](mailto:erik.latremore@dec.ny.gov)> wrote:

Dan,

I just received information indicating the Raymondville is not releasing any water. The source is reliable as it was Environmental Conservation Officer Joseph Munn. ECO Munn and a fisherman found a sturgeon stranded on some rocks and were able to capture it and release it back into the water. Please advise as to why there is no water going through the facility.

Thank you

**Erik Latremore**

Biologist 1 (Ecology)

**New York State Department of Environmental Conservation**  
317 Washington St., 5th Floor, Watertown, New York 13601  
P: (315) 785-2293 | F: (315) 785-2242 | [erik.latremore@dec.ny.gov](mailto:erik.latremore@dec.ny.gov)

[www.dec.ny.gov](http://www.dec.ny.gov) | <image002.png> | <image003.png>

**EMAIL NO. 2**



**From:** Daoust, Daniel  
**Sent:** Wednesday, May 20, 2015 9:16 AM  
**To:** Borlang, Ian; Garrett, Robert  
**Cc:** Murphy, Steven P  
**Subject:** Raymondville

FYI,

Erik Latremore called this morning, he is completing a letter to follow through with the ECO complaint and subsequent excursion at Raymondville,

We discussed our plan to install test flow monitors and he inquired about alternative we might propose to alleviate stranding fish,

D  
**Daniel Daoust**  
*FERC Compliance*  
*Eastern Region: Atlantic Operations*

**Brookfield Renewable Energy Group**  
**US Operations**  
33 West First Street South, Fulton, NY 13069  
T 315-598-6131 C 315-383-0451 F 315-598-4831  
[Daniel.Daoust@brookfieldrenewable.com](mailto:Daniel.Daoust@brookfieldrenewable.com)  
**Brookfield**

Document Content(s)

08132015 Lower Raquette AIR - Excursions.PDF.....1-6



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May 28, 2015

Hon. Kimberly Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street  
Washington, D.C. 20426

**Subject: Lower Raquette River Hydroelectric Project (P-2330)  
Raymondville Development – Response to NYSDEC Complaint**

In reference to: NYSDEC letter dated May 20, 2015.

Dear Secretary Bose:

Brookfield Renewable Energy Group (Brookfield), on behalf of its wholly-owned subsidiary Erie Boulevard Hydropower LP, is herein responding to the formal complaint filed by the New York State Department of Environmental Conservation (NYSDEC) with the Commission in the above-referenced letter.

In said letter, the NYSDEC stated that an on-Site Environmental Conservation Officer, (ECO Munn) observed stranded fish in the by-pass reach located at the facility, with flows in the reach observed to be significantly reduced. The Department also referenced excursions that have occurred at the Raymondville facility over the course of the past 10 months.

At the time of the observation by ECO Munn, flashboard installation was occurring at two upstream facilities which resulted first in an increase of spill followed by a reduction of spill at the Raymondville dam. As the Department states in their letter, according to the Water Quality Certificate (WQC) issued through Section 401 of the Federal Clean Water Act, a minimum of 20 cfs must be passed at the flume located at the Powerhouse for fish passage; additionally, minimum flows of 560 cfs must be met during normal operating conditions and 290 cfs during dry/draught conditions. All of these conditions were being met at the time of the ECO Munn's observation. Further, the Trout Brook outlet, located at the approximate midpoint of the by-pass reach, had additional flows releasing into the reach, contributing to the fish attraction flows in the by-pass. Finally, in Erie Boulevard's 2002 license agreement, Section 3.3.4.4 states that the licensee shall not be required to provide an instream flow in the by-pass reach of the Raymondville development.

On the same day as the observation by ECO Munn, an excursion occurred for base flows below the Raymondville powerhouse. This was caused by plugged trash-racks at the up-river Norfolk development and Brookfield submitted an excursion report for that incident on May 22, 2015. While these two events occurred on the same day, they are unrelated as they occurred at different times.



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With regards to the referenced excursions at the development, Brookfield is currently coordinating efforts with the Department as well as Brookfield's consultants to study flows and develop a correlation between changes in flows as measured at the USGS gage located immediately below the Raymondville powerhouse and actual hydrologic impacts as measured at the Cemetery Riffle. Further, Brookfield will continue to operate according to the license prescriptions.

If you have any questions, don't hesitate to contact me at (518) 743-2095 or Ian Borlang at (518) 743-2095.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bob Garrett", with a horizontal line extending to the right.

Bob Garrett  
Compliance Specialist, Atlantic Operations

cc: I. Borlang (Brookfield)  
M. Johnson  
J. Elmer  
J. McVaigh  
J. Gamble  
D. Daoust  
M. Stanley  
G. Cross (FERC-NYRO)  
N. Agnoli

D. Uttero

E. Latremore (NYSDEC)

Enclosure(s): 1

Document Content(s)

05282015 RAV NYSDEC Response.PDF.....1-2

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION****Division of Fish, Wildlife and Marine Resources, Region 6**

Dulles State Office Building, 317 Washington Street, Watertown, NY 13601-3787

P: (315) 785-2263 | F: (315) 785-2242

www.dec.ny.gov

May 20, 2015

Robert Garrett  
 Brookfield Renewable Energy Group  
 399 Big Bay Road  
 Queensbury, NY 12804

**Subject: Lower Raquette River (Raymondville) FERC # 2330**  
**Flow excursion on 5-14-2015 around 12:55 PM and stranded fish as a result of excursions**

Dear Mr. Garrett:

The New York State Department of Environmental Conservation (the Department) has received information from Environmental Conservation Officer (ECO) Joseph Munn that a flow excursion had occurred at the aforementioned facility. ECO Munn observed a sturgeon and multiple other fishes stranded on rocks and in small pools below the dam of the facility. ECO Munn reported no water flowing below the dam. With the assistance of a nearby fisherman, ECO Munn and said fisherman were able to return the sturgeon back to an area of the Raquette River with adequate water depths and flows for survival. The area the sturgeon was found is indicated on the enclosed photographs. Over the last 10 months the aforementioned facility has experienced six reported flow excursions for various reasons from upstream facilities being offline to operator errors, see Table 1.

*Table 1. Last 10 months of reported issues at FERC #2330 (Raymondville).*

Project	FERC #	Date of Issue	Start Time	End Time	Description of Issue	Fixed Performed
Lower Raquette (Raymondville)	2330	8/6/2014	12:22 PM	3:22 PM	Flow Excursion - Pond level dropped to 109 cfs	Unknown - Possible operator error
Lower Raquette (Raymondville)	2330	9/28/2014	3:00 PM	3:45 PM	Flow Excursion - flow of 280 cfs recorded for 45 minutes	trash rack plugged and tripped the unit offline, trash rack was cleared and unit back online
Lower Raquette (Raymondville)	2330	9/30/2014	10:00 AM	10:00 AM	Report from ECO Basford that the flows are significantly low and pond is low for a period of 3 days	Contacted Daniel Daoust to discuss the issues with no resolution
Lower Raquette (Raymondville)	2330	12/22/2014	9:30 AM	10:00 AM	Flow Excursion - Pond level dropped to 391 cfs	Sheet ice plugged intakes and tripped unit offline

Lower Raquette (Raymondville)	2330	5/14/2015	12:55 PM	???	ECO Munn reported no flow through the dam and a sturgeon stuck on the rocks	Contacted Daniel Daoust to discuss the issues via email, Flash board replacement at Norwood is probably the cause.
Lower Raquette (Raymondville)	2330	5/14/2015	2:30 PM	2:45 PM	Flow excursion, min flow of 560 cfs	Work on upstream facilities, Norfolk?

Page 1 of 2

The issued Water Quality Certification (WQC) through Section 401 of the Federal Clean Water Act, 33 U.S.C. 1341 (401 WQC) states the minimum flow for this facility is 20 cfs of fish water at the end of the flume and either 560 cfs for normal conditions or 290 cfs during dry/drought conditions. Figure 1 (below) shows flows at the Raymondville facility and the latest excursion is not visible or comparable to the observations made by ECO Munn.

## Previous 50 days at Raymondville

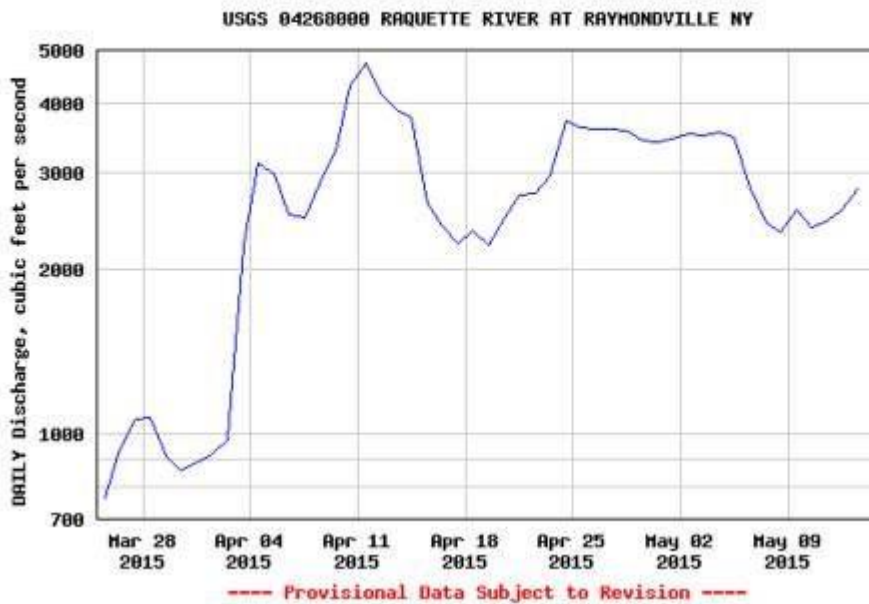


Figure 1.  
USGS stream statistics, March 27-May 14, 2015

The Department recommends that a flow study be performed to determine if:

- 1) Install flow monitors at the Cemetery Riffles and trip the unit offline to determine environmental impacts,
- 2) Auxiliary flows are required through a low flow spillway,
- 3) Prevent future impacts to sturgeon at the Raymondville facility.

Sincerely,

Erik Latremore  
NYSDEC Region 6 Habitat/Hydroelectric Protection Biologist

ec: Steven Patch, USFWS Walid Abdulla,  
FERC  
enc: Pictures taken after the reported no flow by ECO Munn

Document Content(s)

Raymondville FERC 2330.PDF.....1-5