LOW IMPACT HYDROPOWER INSTITUTE

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LOW IMPACT HYDROPOWER QUESTIONNAIRE

[Excerpted from Part VI, Section E of the Low Impact Hydropower Certification Program. Words in italics are defined in Part VI, Section C, and line-by-line instructions are available in Section D of the program, available on-line in PDF format at http://www.lowimpacthydro.org.

E. LOW IMPACT HYDROPOWER QUESTIONNAIRE

Background Information		
1)	Name of the *Facility*.	Four Raquette River Projects consisting of the Carry Falls Project No. 2060, Upper Raquette River Project No. 2084, Middle Raquette River Project No. 2320 and the Lower Raquette River Project No. 2330, were included in the Raquette River Settlement of March 1998 and include the following fourteen facilities (from upstream to downstream): Carry Falls, Stark, Blake, Rainbow, Five Falls, South Colton, Higley, Colton, Hannawa, Sugar Island, Norwood, East Norfolk, Norfolk and Raymondville.
2)	Applicant's name, contact information and relationship to the Facility. If the Applicant is not the Facility owner/operator, also provide the name and contact information for the Facility owner and operator.	Mr. Daniel F. Parker Compliance Engineer Erie Boulevard Hydropower, L.P. Brookfield Renewable Power 184 Elm Street Potsdam, New York 13676
3)	Location of Facility by river and state.	Raquette River, New York

4) Installed capacity.	Total installed capacity = 162.5 MW (FERC License). By project, installed capacity is as follows: Carry Falls: 0.0 MW (storage reservoir) Upper Raquette: 102.4 MW Middle Raquette: 45.9 MW Lower Raquette: 13.7 MW (upgraded 2006-2008)
5) Average annual generation.	807,390 megawatt hours
6) Regulatory status.	Relicensed via a collaborative Settlement. The Settlement was signed in 1998 and the four new licenses were issued in February 2002.
7) Reservoir volume and surface area measured at the high water mark in an average water year.	Carry Falls: 104,463 acre feet and 3,000 surface acres Stark: 12,000 acre feet and 641 surface acres Blake: 12,800 acre feet and 660 surface acres Rainbow: 12,700 acre feet and 710 surface acres Five Falls: 2,300 acre feet and 120 surface acres South Colton: 3,000 acre feet and 225 surface acres Higley: 4,400 acre feet and 742 surface acres Colton: 620 acre feet and 195 surface acres Hannawa: 690 acre feet and 204 surface acres Sugar Island: 55 acre feet and 29 surface acres Norwood: 1,900 acre feet and 350 surface acres East Norfolk: 360 acre feet and 135 surface acres Norfolk: 35 acre feet and 10 surface acres Raymondville: 315 acre feet and 50 surface acres
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	Not required.
9) Number of acres inundated by the Facility.	Not required.
10) Number of acres contained in a 200-foot zone extending around entire impoundment.	Not required.
11) Please attach a list of contacts in the relevant Resource Agencies and in non-governmental organizations that have been involved in Recommending conditions for your Facility.	Attached is a list of key resource agencies and NGOs involved with the Raquette River Settlement.
12) Please attach a description of the Facility, its mode of operation (i.e., peaking/run of river) and a map of the Facility.	Project Description and Project Operations excerpts from License are attached Exhibit F and G Project Drawings are attached.

Questions for "New" Facilities Only:	
If the Facility you are applying for is "new" i.e., an existing dam that added or increased power generation capacity after August of 1998 please answer the following questions to determine eligibility for the program	
13) When was the dam associated with the Facility completed?	1911
14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.	1) Higley redevelopment: September 2003 2) Lower Raquette (Norwood, East Norfolk, Norfolk, & Raymondville) redevelopment: 2006-2008.
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	Higley Redevelopment – penstock configuration change, four penstocks versus one penstock. Lower Raquette Redevelopment- turbine and generator upgrades.
16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality, (for example, did operations change from run-of-river to peaking)?	The DEC (May 17, 2002) and FWS (May 22, 2002) stated that the revised configuration was better suited to efficiently matching the range of flows expected than the original, single penstock configuration. This correspondence was filed with the Commission on May 22, 2002. The Commission provided verbal approval to proceed with the redevelopment on May 31, 2002, followed by written approval on June 4, 2002. This redevelopment project also expedited fish protection measures by 10 years. Correspondence attached.
17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity? (b) If you answered "yes" to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain.	NO NA
18 (a) If the increased or added generation is not yet operational, has the increased or added generation received regulatory authorization (e.g., approval by the Federal Energy Regulatory Commission)? If not, the facility is not eligible for consideration; and (b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.	18 (a) NA 18 (b) NO

A. Flows	PASS	FAIL	
1) Is the Facility in *Compliance* with *Resource Agency Recommendations* issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?	YES = Pass, Go to B N/A = Go to A2		Yes. The Raquette River Projects are in compliance with resource agency recommendations issued after December 31, 1986 regarding flow conditions. The Settlement Agreement/License Order includes requirements for flow releases recommended by the New York Sate Department of Environmental Conservation (DEC0 and the U.S. Fish. And Wildlife Service (FWS). **Minimum flows in the bypassed reaches** are specified at each development as follows: Carry Falls: 0 cfs (no bypassed reach) Blake: 55 cfs and 120 cfs seasonal (walleye) Five Falls: 50 cfs and 45 cfs seasonal (walleye) Higley: 20 cfs (fish movement), short bypassed reach (seasonally variable) Hannawa: 50 cfs, 90 cfs seasonal (walleye), 65 cfs Norwood: 20 cfs (fish movement), short bypassed reach Norfolk: 55 cfs and 20 cfs (fish movement) Stark: 45 cfs Rainbow: 20 cfs South Colton: 20 cfs Colton: 110,200/240 (walleye), 200, 125, or 90 cfs Sugar Island: 300 cfs, 400 cfs seasonal (walleye) East Norfolk: 75 cfs Raymondville: 20 cfs (fish movement), short bypassed reach The method of release and time of implementation are also established in the Settlement as recommended by the resource agencies and others. Year round base flows of 290 or 560 cfs are provided below Raymondville. The 560 cfs base flow occurs during a "normal" or "wet" condition as defined in the Settlement. The 290 cfs occurs during a "dry" or "drought" condition as defined in the Settlement. **Maximum daily reservoir fluctuations** under normal flow conditions are limited as follows: Carry Falls: 30.0 feet permitted, guide curve Blake: 1 foot Five Falls: 2 feet Stark: 1 foot Rainbow: 1 foot South Colton: 2 feet Higley: 2.5 feet, end of Labor Day weekend to Memorial Day weekend; 2.0 feet, Memorial Day weekend to end of Labor Day weekend. Colton: 0.4 feet Sugar Island: 1 foot East Norfolk 0.5 feet Raymondville: 0.5 feet Hannawa: 0.4 feet Norwood: 0.5 feet Norfolk: 1 foot Brookfield Renewable Power provides releases for whitewater recreation at Colton, Hannawa and Sugar Island Developments. The whitewater season is designated as July through September. Whitewater budget for years 2002 to 2006 shall not exceed 800 Mwh per year. After 2006 and every five years thereafter, adjustments may be made with a whitewater budget between 400 Mwh and 1,080 Mwh. The approximate peak whitewater flows are: Colton 1250 cfs. Hannawa 800 cfs and Sugar Island 1500 cfs. Ramping flows are an hourly doubling of the instream flow when ascending to the peak flow and an hourly halving when descending and associated energy losses are part of the whitewater budget. An implementation schedule for provisions of flows was contained in the License. The Licensee has provided the flows in accordance with this schedule and additionally, has filed annual reports on License implementation measures denoting when the flows were initiated. The annual reports, commencing in 2002, have been approved by the Commission via Order Approving Annual Implementation Reports dated, July 30, 2002, June 18, 20003 and June 14, 2004. FWS correspondence dated August 14, 2003 denotes compliance with the flow requirements.

2) If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or "good" habitat flow standards calculated using the Montana-Tennant method?	YES = Pass, go to B NO = Go to A3		NA
3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?	YES = Pass, go to B		NA

B. Water Quality	PASS	FAIL	
1) Is the Facility either: a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?	YES = Go to B2	NO = Fail	Yes. The four Raquette River Projects are in compliance with all conditions issued pursuant to the Clean Water Act – Section 401 Water Quality Certification issued for the four projects on June 11, 1998 (attached). The Section 401 WQC is conditioned on compliance with the terms of the Settlement Agreement.
2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?	YES = Go to B3 NO = Pass		Yes, the DEC has identified several areas of the Raquette River Projects and associated tributaries in their June 3, 2002 Section 303 (d) List. The DEC classifies the project area based on their designated best use. Water classifications for the project areas include Class B (coldwater fishery) (Best use is primary contact recreation and other uses except as a source of water supply for drinking and culinary or food processing purposes), Class C (T) (Coldwater fishery that supports trout) (best use is fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation), and Class D (warm water fishery) (best use is secondary contact recreation).
3) If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?	YES = Pass	NO = Fail	Yes, the DEC Section 303(d) List (attached) indicates atmospheric deposition (acid rain) is the source for all areas of the Raquette River Projects and associated tributaries identified under Section 303 (d).

C. Fish Passage and Protection	PASS	FAIL	
1) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?	YES = Go to C5 N/A = Go to	NO = Fail	Erie Boulevard Hydropower, LP installed upstream American eel ladders at its Raymondville, Yaleville and Norfolk developments in 2008. Erie is installing upstream eel ladders at its East Norfolk and Norwood developments in 2009.
2) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish run is extinct)? a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility? b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?	YES = Go to C2a NO = Go to C3 YES = Go to C2b N/A = Go to C2b YES = Go to C5	 NO = Fail NO = Fail	 Erie Boulevard Hydropower, LP installed upstream American eel ladders at its Raymondville, Yaleville and Norfolk developments in 2008. Erie is installing upstream eel ladders at its East Norfolk and Norwood developments in 2009.S See Response to Question C.2.a above.
3) If, since December 31, 1986: a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription, c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?	NO = Go to C5 N/A = Go to C4	YES = Fail	No. The agencies had the opportunity to issue Mandatory Fish Passage Prescriptions but decided not to do so. Historically, waterfalls formed natural barriers to upward migration of most fish species of the St. Lawrence River. Department of Interior reserved section 18 authority. Also, see response to Question C.2 above.

4) If C3 was not applicable: a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? Or b) If the Facility is unable to meet the fish passage standards in 4.a., has the Applicant demonstrated, and obtained a letter from the US Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource?	YES = Go to C5	NO = Fail	NA
5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of *Riverine* fish?	YES = Go to C6 N/A = Go to C6	NO = Fail	Yes, there are no mandatory prescriptions (Section 18 or similar) for the passage of riverine fish. However, as agreed in the Settlement, downstream movement of riverine fish (yellow perch, rock bass, white sucker, brown bullhead, walleye, northern pike and pumpkinseed) is facilitated by minimum flows and new release structures at Stark, Blake, Rainbow, Five Falls, South Colton, Higley, Colton, Hannawa, Sugar Island, Norwood, East Norfolk, Norfolk and Raymondville. Carry Falls has no fish movement requirement.
6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?	YES = Pass, go to D N/A = Pass, go to D	NO = Fail	One inch trash racks have been installed at Raymondville, Yaleville, Norfolk, East Norfolk, Norwood, and Hannawa developments. Erie is continuing to install one inch trash racks at the remaining developments according to the implementation schedule.

D. Watershed Protection	PASS	FAIL	
1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline	YES = Pass, go to E and receive 3 extra years of certification	NO = go to D2	Yes. The four Raquette Rive Projects are in compliance with FERC license requirements regarding the Protection, Mitigation and Enhancement of project lands and watershed protection. These include limited impoundment fluctuations for shoreline erosion control, erosion/sediment control plans for any new construction and management of project lands, through permits, used by the public, municipalities, utilities, etc.
2) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D. 1. ,and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?	YES = Pass, go to E and receive 3 extra years of certification	NO = go to D3	NA
3) Has the facility owner/operator established through a settlement agreement with appropriate stakeholders and that has state and federal resource agencies agreement an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)	YES = Pass, go to E	NO = go to D4	NA
4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.	YES = Pass, go to E	No = Fail	NA

E. Threatened and Endangered Species Protection	PASS	FAIL	
1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?	YES = Go to E2 NO = Pass, go to F		Yes. Except for the bald eagle and occasional transient species, there are no state or federal threatened or endangered species present in the Raquette River project areas or downstream reaches. The yellow lamp mussel is considered a species of concern/interest by the FWS/DEC respectively. The Licensee surveyed reaches of the river and the final EA concluded no further studies required at this time. The FWS and DEC did not provide any comments on the final EA conclusions. Attached are copies of the appropriate documentation. The Bald Eagle Protection and Management Plan, approved by FERC on July 17, 2003, continues to be implemented. FERC approved the 2008 Bald Eagle Monitoring Report filing on May 26, 2009. Correspondence is attached.
2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?	YES = Go to E3 N/A = Go to E3	NO = Fail	NA
3) If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?	YES = Go to E4 N/A = Go to E5	NO = Fail	NA
4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that: a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or d) The recovery plan under active development will have no material effect on the Facility's operations?	YES = Pass, go to F	NO = Fail	NA
5) If E.2. and E.3. are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?	YES = Pass, go to F	NO = Fail	Yes. As described in response to Question E.1., the only listed species, the bald eagle, is being positively impacted through the FERC-approved Bald Eagle Protection and Management Plan. No negative impacts have been identified.

F. Cultural Resource Protection	PASS	FAIL	
1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?	YES = Pass, go to G N/A = Go to F2	NO = Fail	Yes. As required by Article 405 of the licenses, Erie Boulevard Hydropower, LP has implemented the Programmatic Agreement and prepared an Historic Properties Management Plan (HPMP) for the projects that was approved by the September 28, 2004 FERC Order. The projects are in compliance with the requirements of the licenses and the HPMP.
2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or *Native American Tribe*, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility?	YES = Pass, go to G	NO = Fail	NA
G. Recreation	PASS	FAIL	
1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?	YES = Go to G3 N/A = Go to G2	NO = Fail	Yes. The Recreation Plan for the projects was approved by the FERC Order, dated November 17, 2004. The recreational enhancements included in the approved recreation plan have been implemented.
2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?	YES = Go to G3	NO = Fail	NA
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H	NO = Fail	Yes, all facilities have both access to the reservoir and downstream reaches free of charge.
H. Facilities Recommended for Removal	PASS	FAIL	
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	NO = Pass, Facility is Low Impact	YES = Fail	No. No resource agency recommended removal of any of the dams associated with these four Raquette River projects.

BACKGROUND INFORMATION #11

Raquette River Settlement Key Parties

RAQUETTE RIVER SETTLEMENT KEY PARTIES (LIHI #11)

Mr. Peter Skinner
American Whitewater Association
2 Snyder Road
West Sand Lake, New York 12196
(518) 674-5519 (home)
(518) 474-2432 (work)

Mr. Bruce Carpenter
New York Rivers United
PO Box 1460
199 West Dominick Street
Rome, New York 13440
(315) 339-2097

Ms. Betty Lou Bailey
Adirondack Mountain Club
4029 Georgetown Square
Schenectady, New York 12303-5300
(518) 355-0604

Mr. Jon Montan
St. Lawrence County Planning Office
48 Court Street, Courthouse Room 225
Canton, NY 13617-13617-1194
(315) 379-2281

Mr. David Stilwell
U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, New York 13045
(607) 753-9334

Mr. George Outcalt
Adirondack Park Agency
PO Box 99
Ray Brook, New York 12977
(518) 891-4050

Mr. Len Ollivett (Retired)
Ms. Alice Richardson
NYS Department of Environmental Conservation
317 Washington Street
Watertown, New York 13601
(315) 785-2267

Mr. Kevin Mendik
National Park Service
10th Floor
Boston, MA 02109
(617) 223-5299

BACKGROUND INFORMATION #12

Project Description and Project Drawings

PROJECT DESCRIPTION

The Raquette River, with a drainage basin of 1,269 square miles, originates in the Adirondack Mountains, flows generally north-northwest for more than 120 miles, and empties into the St. Lawrence River near Massena, New York. Most of the basin is sparsely populated, with much of the land forested and brushland. The region's economy depends primarily on recreational tourism and timber-based industries.

The Carry Falls Project is a seasonal storage reservoir with no associated generating capacity. It includes a 826-foot- long dam, varying in height from 63 to 76 feet; an intake structure with provision for future power installation; five earth dikes totaling approximately 2,500 feet in length; and a 3,000-acre reservoir with a usable storage capacity of 104,463 acre-feet.[15]

Under its original license, the project operates within an elevation of 1,385.0 to 1,332.0 feet mean sea level (msl). These elevations are governed, in part, by the use of a guide curve that provides the project with a series of target elevations to be met over the course of a given year. These elevations are also governed by the potential backwater effects caused by the Stark development of the Upper Raquette River Project (FERC No. 2084) located immediately downstream of the Carry Falls reservoir. In practice, when the elevation of the Carry Falls reservoir falls below 1,355.0 feet msl, the Stark impoundment must be drawn down. The two reservoirs are thus essentially linked.

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[15]A more detailed project description is contained in ordering paragraph B(2).

SETTLEMENT

As discussed in the lead order, because the Settlement is also a condition of the water quality certifications issued for the projects, we must, giving equal consideration to developmental and environmental values, determine whether the project proposal, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

Pursuant to the Settlement, Erie proposes a new guide curve that will govern the operation of the Carry Falls reservoir. This new guide curve will continue to provide a series of target elevations over the course of a given year, but will raise the lower elevation limit from 1,332 to 1,355.0 feet msl. This change will allow for the separate operation of the Carry Falls reservoir and Stark impoundment at all times.[22]

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[22] See EA at 8-10.

In addition, to protect and enhance project-related environmental resources, Erie proposes to:

(1) to discontinue site-specific instream flows and remove welded blocks that currently exist on the bottom of one of the low-level sluice gates;

(2) provide canoe portages from the Jordan River to the right shore of the Carry Falls reservoir and around the Carry Falls dam; and

(3) modify the project boundary as necessary to include all Erie lands occupied by the portages.

In the lead order, we approve the Settlement and conclude, giving equal consideration to developmental and environmental values, that the Carry Falls Project, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

The Commission orders:

(A) This license is issued to issued to Erie Boulevard Hydropower, L.P.(licensee) for a period of 31 years, 11 months, effective the first day of the month in which this order is issued, to operate, and maintain the Carry Falls Project. The license is effective February 1, 2002, and will expire on December 31, 2033. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference

as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G, filed January 28, 1999:

Exhibit G Drawing	FERC No. 2060-	Showing
G-1	1001	Project Boundary and Location Map
G-2	1002	Project Boundary and Location Map
G-3	1003	Project Boundary and Location Map
G-4	1004	Project Boundary and Location Map
G-5	1005	Project Boundary and Location Map

(2) Project works consisting of: (a) a 826-foot-long dam; (b) a 568-foot-long by 76-foot-high concrete gravity spillway with a crest elevation of 1,386 feet mean sea level (msl); (c) a 258-foot-long by 63-foot-high concrete gated non-overflow spillway with two 14.5-foot by 27-foot taintor regulating gates, two 10-foot-square low-level sluice gates, and an intake structure with two 15-foot-square openings for future power installation; (d) five earth dikes totaling approximately 2,500 feet in length, with lengths varying from 320 feet to 1,015 feet, maximum heights varying from 12 feet to 31 feet, and each with a crest width of 12 feet at elevation 1,392 feet msl with upstream and downstream slopes of 3:1 and 2.5:1 respectively; and (e) a 7-mile-long reservoir with a surface area of 3,000 acres and a usable storage capacity of 104,463 acre-feet at a normal pool elevation 1,385 feet msl.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: The following Exhibit A sections, filed on January 28, 1999:

Pages A-4 to A-8, describing the existing mechanical, electrical, and transmission equipment.

Exhibit F: The following Exhibit F drawings, filed on January 28, 1999:

Exhibit F Drawing	FERC No. 2060-	Showing
F-1	1006	General Plan and Sections, Dam and Intake
F-2	1007	Plan and Sections Intake
F-3	1008	Plan and Sections, Taintor Gate and Spillway
F-4	1009	Plan and Section, Dikes "A" and "B"
F-5	1010	Plan and Section, Dike "C"
F-6	1011	Plan and Section Dikes "D" and "E"

PROJECT DESCRIPTION

The Raquette River, with a drainage basin of 1,269 square miles, originates in the Adirondack Mountains, flows generally north-northwest for more than 120 miles, and empties into the St. Lawrence River near Massena, New York. Most of the basin is sparsely populated, with much of the land forested and brushland. The region's economy depends primarily on recreational tourism and timber-based industries.

The Upper Raquette River Project consists of five developments (from upstream to downstream): Stark, Blake, Rainbow, Five Falls, and South Colton. The five developments have a total installed capacity of 102,389 kW and are located in a 16-mile reach of the Raquette River commencing 52 miles above its confluence with the St. Lawrence River.

The Stark development includes a 35-foot-high dam with an overflow section; seven earthen dikes totaling approximately 3,700 feet in length; a reservoir; an intake with trashracks, a slide gate, and a 651-foot-long pipeline; and a powerhouse containing a 23,872-kW generating unit.

The Blake development has a 75-foot-high dam; three earthen dikes totaling approximately 1,840 feet in length; a reservoir; an intake with a 731-foot-long pipeline; and a powerhouse containing a 13,913-kW generating unit.

The Rainbow development has a 81.5-foot-high dam; two earthen dikes, approximately 2,570 feet in length; a reservoir; an intake with a 645-foot-long pipeline; and a powerhouse containing a 22,828-kW generating unit.

The Five Falls development includes a 50-foot-high dam with an overflow spillway and a stoplog section, flanked at each end by dikes totaling approximately 1,190 feet in length; a reservoir; a gated intake with a 1,399-foot-long pipeline; and a powerhouse containing a 22,828-kW generating unit.

The South Colton development includes a 45-foot-high dam with an overflow spillway and a stoplog section; a reservoir; a gated intake with a 1,300-foot-long pipeline; and a powerhouse containing a 18,948-kW generating unit.[14]

As currently licensed, and proposed to be relicensed, these developments are operated run-of-river with pondage mode using releases from the Carry Falls Project.[15]

[14]A more detailed project description is contained in ordering paragraph B(2).

[15]This means that the licensee uses/releases flows received from upstream developments and in addition may use/release water stored in the particular reservoir (pondage), subject to drawdown limitations.

SETTLEMENT

As discussed in the lead order, because the Settlement is also a condition of the water quality certifications issued for the projects, we must, giving equal consideration to developmental and environmental values, determine whether the project proposal, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

Pursuant to the Settlement, Erie proposes to release minimum flows as follows:

(1) from Stark, 45-cubic-feet-per-second (cfs) year-round through the stoplog section of the dam, raised to 90 cfs when releases are made for 24 hours or more through the Taintor gates;

(2) from Blake, 55 cfs from the stoplog section of the dam, with an increase to 120 cfs during walleye spawning season;

(3) from Rainbow, 20 cfs year-round from the stoplog section of the dam;

(4) from Five Falls, 50 cfs from the stoplog section of the dam, with an increase to 145 cfs during walleye spawning season; and

(5) from South Colton, 20 cfs year-round over the visible portion of the falls.

In addition, to protect and enhance project-related environmental resources, Erie proposes to:

(1) make fisheries habitat improvements at the Stark and Blake developments;

(2) limit normal reservoir fluctuations to no more than 1.0 feet at Stark, Blake, and Rainbow, and to no more than 2.0 feet at Five Falls and South Colton;

(3) develop a streamflow monitoring plan;

(4) provide measures to facilitate downstream fish movement at all the developments;

(5) install 1-inch clear spacing physical barriers at existing trashrack structures at each development; and

(6) develop a recreation plan to provide a canoe portage at each development, access to Dead Creek at Blake, and a primitive access trail to the Clear Pond Wild Forest at Rainbow; and

(7) modify the project boundary to include all Erie lands that will be occupied by these recreational facilities.

In the lead order, we approve the Settlement and conclude, giving equal consideration to developmental and environmental values, that the Upper Raquette River Project, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

The Commission orders:

(A) This license is issued to issued to Erie Boulevard Hydropower, L.P.(licensee) for a period of 31 years, 11 months, effective the first day of the month in which this order is issued, to operate and maintain the Upper Raquette River Hydroelectric Project. The license is effective February 1, 2002, and will expire on December 31, 2033. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is

incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G, filed January 28, 1999:

Exhibit G Drawing	FERC No. 2084-	Showing
G-1	1001	Project Boundary and Location Map
G-2	1002	Project Boundary and Location Map
G-3	1003	Project Boundary and Location Map
G-4	1004	Project Boundary and Location Map
G-5	1005	Project Boundary and Location Map
G-6	1006	Project Boundary and Location Map
G-7	1007	Project Boundary and Location Map
G-8	1008	Project Boundary and Location Map
G-9	1009	Project Boundary and Location Map

(2) Project works consisting of five developments:

The Stark development comprising: (a) a 35-foot-high concrete gravity dam with a 294-foot-long by 35-foot high concrete overflow section with a crest elevation of 1,355.0 feet above mean sea level (msl) and a 94-foot-long control gate section consisting of two 27-foot-long by 15-foot-high radial taintor gates with a crest elevation of 1,340.8 feet msl, a low-level sluice gate section consisting of one motor controlled 12-foot square slide gate, and a 6-foot-wide stoplog section; (b) seven earthen saddle dikes with a crest elevation of 1,362.0 feet, totaling approximately 3,700 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively; (c) a 1.5-

mile-long reservoir at normal pool elevation 1,355.0 feet; (d) a concrete intake structure housing the trashracks and trashrack raking structure, and a 18.33-foot-high by 18.66-foot-wide motor-driven slide gate; (e) a 651-foot-long, 18-foot-diameter welded steel pipeline; (f) a 75-foot-long by 73-foot-wide concrete powerhouse containing a 23,872 kilowatt (kW) generating unit; and (g) appurtenant facilities.

The Blake development comprising: (a) a 75-foot-high concrete gravity dam with a 592-foot-long by 80-foot-high concrete overflow section with a crest elevation of 1,250.5 feet msl and a 140-foot-long non-overflow section with a crest elevation of 1,266.0 feet; (b) three earthen dikes with a crest elevation of 1,259.5 feet, totaling approximately 1,840 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively; (c) a 5.5-mile-long reservoir at normal pool elevation 1,250.5 feet; (d) a concrete intake structure housing the trashracks and trashrack raking structure, and a 18.33-foot-high by 18.66-foot-wide motor-driven slide gate; (e) a 731-foot-long, 18-foot-diameter welded steel pipeline; (f) a 75-foot-long by 73-foot-wide concrete powerhouse containing a 13,913 kW generating unit; and (g) appurtenant facilities.

The Rainbow development comprising: (a) a 2,677-foot-long by 75-foot-high concrete gravity-type dam with a 751-foot-long by 81.5-foot-high concrete overflow section with a crest elevation of 1,181.5 feet msl and two non-overflow sections totaling 120 feet and 176 feet in length, respectively; (b) two earthen saddle dikes with a crest elevation of 1,190.0 feet, totaling approximately 2,570 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively; (c) a 3.5-mile-long reservoir at normal pool elevation 1,181.5 feet; (d) a concrete intake structure housing the trashracks and trashrack raking structure, and a 18.33-foot-high by 18.66-foot-wide motor-driven slide gate; (e) a 645-foot-long, 18-foot-diameter welded steel pipeline; (f) a 75-foot-long by 73-foot-wide concrete powerhouse containing a 22,828 kW generating unit; and (g) appurtenant facilities.

The Five Falls development comprising: (a) a 1,750-foot-long by 50-foot-high concrete gravity dam flanked at each end by earthen dikes totaling approximately 1,190 feet in length, each 16 feet wide with upstream and downstream slopes of 3:1 and 2.5:1, respectively; (b) a 500-foot-long concrete gravity ogee overflow spillway with a crest elevation of 1,077.0 feet; (c) a 6-foot-wide stoplog section with a sill elevation of 1,072.0 feet; (d) a 1.0-mile-long reservoir at normal pool elevation 1,077.0 feet; (e) a 60-foot-long gated concrete intake structure housing the trashracks and trashrack raking structure, and a 18.33-foot-high by 18.66-foot-wide motor-driven slide gate; (f) a 1,399-foot-long, 18-foot-diameter welded steel pipeline; (g) a 75-foot-long by 73-foot-wide

concrete powerhouse containing a 22,828 kW generating unit; and (h) appurtenant facilities.

The South Colton development comprising: (a) a 970-foot-long, 45-foot-high concrete gravity-type dam and earthen abutments; (b) a 592-foot-long, 42-foot-high concrete gravity ogee spillway with a crest elevation of 973.5 feet msl; (c) a 6-foot-wide stoplog section with a sill elevation of 968.0 feet; (d) a 1.5-mile-long reservoir at normal pool elevation 973.5 feet; (e) a 60-foot-long gated concrete intake structure housing the trashracks and trashrack raking structure, and a 18.33-foot-high by 18.66-foot-wide motor-driven slide gate; (f) a 1,300-foot-long, 18-foot-diameter pipeline; (g) a 75-foot-long by 73-foot-wide concrete powerhouse containing a 18,948 kW generating unit; and (h) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: The following Exhibit A sections, filed on January 28, 1999:

Pages A-6 to A-36, describing the existing mechanical, electrical, and transmission equipment.

Exhibit F: The following Exhibit F drawings, filed on January 28, 1999:

Exhibit F Drawing	FERC No. 2084-	Showing
F-1	1010	Stark - Plan and Sections of Dam and Intake
F-2	1011	Blake - Plan and Sections of Dam and Intake
F-3	1012	Rainbow - Plan and Sections of Dam and Intake
F-4	1013	Five Falls - Plan and Sections of Dam and Intake
F-5	1014	South Colton - Plan and Sections of Dam and Intake
F-6	1015	Typical Plan and Sections - Powerhouse, Pipeline, and Surge Tank

PROJECT DESCRIPTION

The Raquette River, with a drainage basin of 1,269 square miles, originates in the Adirondack Mountains, flows generally north-northwest for more than 120 miles, and empties into the St. Lawrence River near Massena, New York.[14] Most of the basin is sparsely populated, with much of the land forested and brushland. The region's economy depends primarily on recreational tourism and timber-based industries.

The project consists of four developments (from upstream to downstream): Higley, Colton, Hannawa, and Sugar Island. The four developments have a total installed capacity of 47,073 kW and are all located in an 11-mile reach of the Raquette River commencing 38 miles above its confluence with the St. Lawrence River.

The Higley development includes a 34-foot-high dam with 3-foot-high flashboards, two flood gates, a trashrack, two waste gates; a 742-acre reservoir; a 160-foot-long, 50-foot-wide intake; and a powerhouse containing three generating units with a total capacity of 4,972 kW. On October 14, 2001, one of the generating units ceased operation due to turbine failure. Erie proposes to construct a new 13-foot-diameter, 225-foot-long steel intake pipeline and a new powerhouse containing one generating unit with a capacity of 7,300 kW. The existing powerhouse will be retired.

The Colton development includes a 27-foot-high dam with 2-foot-high flashboards, a log flume, a trash gate, and a gated spillway; a 195-acre-reservoir; an 11,090-foot-long steel pipeline; three penstocks; and a powerhouse containing three generating units with a total capacity of 30,101 kW.

The Hannawa development has a 38-foot-high dam with 3.5-foot-high flashboards, a log chute, a Taintor gate, and a sluice gate; a 204-acre reservoir; a 2,700-foot-long canal; two penstocks; and a powerhouse containing two generating units with a total capacity of 7,200 kW.

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[14]The Raquette River is a navigable waterway of the United States. 8 FPC 569 (1949).

The Sugar Island development has a 37-foot-high dam with two Taintor gates; a 29-acre reservoir; an intake structure with trash racks and a headgate; a 4,700-foot-long steel pipeline; two penstocks; and a powerhouse containing two generating units with a total capacity of 4,800 kW.[15]

As currently licensed, and as proposed to be relicensed, these developments, except for Higley, are operated run-of-river with pondage mode using releases from the Carry Falls and the Upper Raquette River Projects.[16] The Higley development operates as a re-regulating development to provide steadier flows for the downstream hydropower developments.

SETTLEMENT

As discussed in the lead order, because the Settlement is also a condition of the water quality certifications issued for the projects, we must, giving equal consideration to developmental and environmental values, determine whether the project proposal, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

Pursuant to the Settlement, Erie proposes to release minimum flows from each of the developments as follows:

(1) from Higley, a 20-cubic-feet-per-second (cfs) year-round flow through the stoplog section of the dam to facilitate downstream movement of fish;

(2) from Colton, 110 cfs from November 1 through the start of walleye spawning season, 200-240 cfs during the walleye spawning season, 200 cfs from the end of the walleye spawning season through June, 125 cfs from July 1 to August 15, 90 cfs from August 16 to September 15, and 125 cfs from September 16 through October 31;

(3) from the stoplog section of the Hannawa dam, 50 cfs from October 31 through the start of walleye spawning season, 90 cfs for the walleye spawning season through June 30, and 65 cfs from July 1 through October 31; and

(4) from Sugar Island, 300 cfs year-round from the minimum flow pipe, with an increase to 400 cfs from the start of the walleye spawning season through June 30.

In addition, to protect and enhance project-related environmental resources, Erie proposes to:

(1) limit normal reservoir fluctuations, according to a seasonal regime at Higley, to provide regulating flows and recreational opportunities;

(2) limit normal reservoir fluctuations at Colton and Hannawa to no more than 0.4 feet, and at Sugar Island to no more than 1.0 foot;

(3) provide additional measures to facilitate downstream fish movement at the Higley, Colton, and Hannawa developments;

(4) provide a 1-inch clear spacing physical barriers at the location of the existing trashrack structures at Higley, Colton, and Hannawa;

(5) provide scheduled whitewater releases, a flow notification system, and access trails at Colton, Hannawa, and Sugar Island;

(6) develop a recreation plan to provide a canoe portage at each development, a whitewater access at Colton, Hannawa, and Sugar Island, a car-top boat launch with overnight parking at Colton, a scenic overlook, picnic facilities, and roadside parking at Hannawa, and a day use area at Sugar Island; and

(7) modify the project boundary to include all Erie lands that will be occupied by these recreational facilities.

In the lead order, we approve the Settlement and conclude, giving equal consideration to developmental and environmental values, that the Middle Raquette River Project, as conditioned by these mandatory conditions, is best adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes.

The Commission orders:

(A) This license is issued to Erie Boulevard Hydropower, L.P. (licensee) for a period of 31 years, 11 months, effective the first day of the month in which this order is issued, to operate, and maintain the Middle Raquette River Hydroelectric Project. The license is effective February 1, 2002, and will expire on December 31, 2033. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G, filed December 24, 1991, and April 28, 2000:[35]

Exhibit G Drawing	FERC No. 2320-	Showing
G-1	1001	Higley - Development Detailed Map, Sheet 5A
G-2	1002	Higley - Development Detailed Map, Sheet 6A
G-3	1003	Colton - Project Boundary and Location Map
G-4	1004	Colton - Project Boundary and Location Map
G-5	1005	Hannawa - Project Boundary and Location Map

[35]Exhibits G-1 and G-2 were approved in an order approving revised exhibits, 92 FERC ¶ 62,178 (2000).

G-6	1006	Sugar Island - Project Boundary and Location Map

(2) Project works consisting of four developments:

The Higley development comprising: (a) a 34-foot-high concrete gravity dam with 3-foot-high wooden flashboards, a 209-foot-long concrete gravity ogee-crested spillway, two flood gates, eight steel forebay gates each measuring 12 feet high by 5 feet, 9 inches wide, a trashrack, and two 10-foot-high by 8-foot-wide waste gates; (b) a 742-acre reservoir at normal pool elevation 883.6 feet above mean sea level (msl); (c) a 160-foot-long by 50-foot-wide flume formed by concrete retaining walls on each side; (d) a powerhouse measuring 64 feet to a side by 38 feet high containing three generating units with a total capacity of 4,972 kilowatts (kW); (e) an intake structure with a 14 x 14 foot headgate, a 13-foot-diameter, 225-foot-long steel pipeline, and a powerhouse measuring 90 feet long and 53 feet wide containing a 7,300 kW generating unit; and (f) appurtenant electrical and mechanical facilities.

The Colton development comprising: (a) a 27-foot-high concrete gravity dam with 2-foot-high flashboards, an 8-foot-wide log flume, a trash gate, and a 204.67-foot-long ogee-crested spillway equipped with a single taintor gate measuring 10 feet high and 25 feet wide; (b) a 195-acre reservoir at normal pool elevation 837.0 feet msl; (c) a concrete intake structure with a brick superstructure, which measures 50 feet wide by 30 feet long by 12 feet high overall, equipped with a motor driven, 16-foot-high by 25.5-foot-wide, taintor gate; (d) a steel pipeline, 11,090 feet long with a diameter of 13.5 feet and 2,100 feet long with a diameter of 12 feet; (e) a 80-foot-high Johnson differential surge tank; (f) three penstocks of lengths 160 feet, 140 feet, and 125 feet, and diameters of 7.5 feet, 7.5 feet, and 9 feet respectively; (g) a brick and structural steel powerhouse measuring 165 feet long and 46 feet wide containing three generating units with a total capacity of 30,101-kW; and (h) appurtenant electrical and mechanical facilities.

The Hannawa development comprising: (a) a 38-foot-high stone and concrete dam with 3.5-foot-high wooden flashboards, a log chute, a motor operated taintor gate measuring 14 feet high by 28 feet wide, an ogee-crested spillway, and a sluice gate; (b) a 204-acre reservoir at normal pool elevation 552.0 feet msl; (c) a headworks structure with five sliding timber gates, all of which are 18 feet high, three are 9.7 feet wide, one is 9 feet wide, and one is 8.8 feet wide; (d) a 2,700-foot-long canal measuring 30 feet wide at the bottom, 120 feet wide at the top, and an average of 22 feet deep, equipped with trashracks that completely cover the canal entrance; (e) two 10-foot-diameter penstocks of 190 feet in length; (f) a sandstone and structural steel powerhouse measuring 66 feet wide

by 248 feet long by 40 feet high containing two generating units with a total capacity of 7,200-kW; and (g) appurtenant electrical and mechanical facilities.

The Sugar Island development comprising: (a) a 37-foot-high concrete gravity dam with two taintor gates and a 192-foot-long spillway; (b) a 29-acre reservoir at normal pool elevation 470.0 feet msl; (c) a concrete and brick intake structure with trashracks and a steel headgate measuring 14 feet wide by 16 feet high; (d) a 4,700-foot-long steel pipeline; (e) a 71-foot-high surge tank; (f) two 8-foot-diameter penstocks; (g) a brick and structural steel powerhouse measuring 35 feet wide by 67 feet long by 30 feet high containing two generating units with a total capacity of 4,800-kW; and (f) appurtenant electrical and mechanical facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: The following Exhibit A sections, filed on December 24, 1991:

Pages A-3 to A-23, describing the existing and proposed mechanical, electrical, and transmission equipment.

Exhibit F: The following Exhibit F drawings, filed on December 24, 1991:

Exhibit F Drawing	FERC No. 2320-	Showing
F-1	1007	Higley - Dam, Intake, and Powerhouse
F-2	1008	Colton - General Plan and Profile
F-3	1009	Colton - Dam and Intake
F-4	1010	Colton - Surge Tank and Powerhouse
F-5	1011	Hannawa - Dam, Intake, and Canal
F-6	1012	Hannawa - Forebay, Intake, Penstocks, Powerhouse
F-7	1013	Hannawa - Forebay, Intake, Penstocks, and Powerhouse
F-8	1014	Sugar Island - General Plan and Profile
F-9	1015	Sugar Island - Dam, Surge Tank, and Powerhouse

II. THE LOWER RAQUETTE RIVER PROJECT NO. 2330

BACKGROUND AND RELICENSING PROPOSAL

The Lower Raquette River Project, consisting of four developments, Norwood, East Norfolk, Norfolk, and Raymondville, was originally licensed in 1964 with a term expiring at the end of December 31, 1993.[53] Erie filed an application for new license on December 24, 1991. Notice of the application was issued on February 23, 1993.[54] Timely motions to intervene in this proceeding were filed by NYSDEC, the Mountain Club, Interior, and Rivers United, et al.[55] A motion for late intervention was filed by the St. Regis Mohawk Tribe on August 25, 1998, and granted by notice of February 18, 1999.[56]

The four developments, having a total installed generating capacity of 12 MW, are all located in an 8-mile reach of the Raquette River commencing 19 miles above its confluence with the St. Lawrence River. The developments are, from upstream to downstream:[57]

(1) the Norwood development, consisting of a 23-foot-high dam with 1-foot-high wooden flashboards, a 350-acre reservoir, a gated concrete intake structure with

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[53]32 FPC 125 (1964).

[54]58 FR 16184, March 25, 1993.

[55]New York Rivers United, Audubon Society, Natural Heritage Institute, Association for the Protection of the Adirondacks, Adirondack Council, American Whitewater, and American Rivers, Inc.

[56]NYSDEC, apparently not realizing that it had timely sought intervention, filed a motion for late intervention on December 18, 1995.

[57]A more detailed project description is contained in ordering paragraph B(2).

trashracks and a log chute, a powerhouse containing a 2,000-kW generating unit, and a 3-mile-long transmission line;

(2) the East Norfolk development, consisting of a dam with seven, 9-foot-high by 8-foot-wide sluice gates, a 135-acre reservoir, a concrete intake structure, a 1,408-foot-long flume, a powerhouse containing a 3,500-kW generating unit, and a 0.86-mile-long transmission line;

(3) the Norfolk development, consisting 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 canal, a 700-foot-long wood stave pipeline, a 103-foot-long steel penstock, and a powerhouse containing a 4,500-kW generating unit; and

(4) the Raymondville development, consisting of a 17-foot-high dam with 2-foot-high flashboards, a 50-acre reservoir, a 447-foot-long concrete flume with trashracks, an ice chute, gates, a powerhouse containing a 2,000-kW generating unit, and a 2.32-mile-long transmission line.

As currently licensed these developments typically operate in a store and release pulsing or store and release peaking mode,[58] using releases from the Carry Falls, Upper Raquette River Project, and the re-regulating Higley development of the Middle Raquette River Project. The project may operate continuously in a run-of-river mode during periods of high flows. Erie plans to continue selling the electricity generated by the project to its customers.

To protect and enhance project-related environmental resources, Erie proposes the following measures, consistent with the Settlement: (1) to facilitate movement of fish, year-round instream flows of 20, 75, 37.5, and 20 cfs, at Norwood, East Norfolk, Norfolk, and Raymondville, respectively; (2) normal reservoir fluctuations limited to no more than 0.5 foot at the Norwood, East Norfolk, and Raymondville developments and no more than 1.0 foot at Norfolk; (3) a tiered base flow below the Raymondville development; (4) measures to facilitate downstream fish movement at all developments; (5) installation of 1-inch clear spacing physical barriers at the existing trashrack structures at each development; and (6) development and implementation of a recreation plan that includes (a) canoe portage at each development (take-out only at East Norfolk

[58] Store and release pulsing operations follow an on/off cycle in response to the level of inflow and normal impoundment fluctuations, while store and release peaking operations respond to peak electric power demand, usually during weekday hours.

and put-in only at Norfolk), (b) parking at the canoe portage at the East Norfolk development, c) car-top boat launch, picnic facilities, and parking adjacent to the left abutment of the dam at the Raymondville development, and (d) modification of the project boundary to include all Erie lands occupied by these recreational facilities.

The Commission orders:

(A) The settlement is approved, except as otherwise noted, and this license is issued to Erie Boulevard Hydropower, L.P. (licensee) for a period of 31 years, 11 months, effective the first day of the month in which this order is issued, to operate, and maintain the Lower Raquette River Hydroelectric Project. The license is effective February 1, 2002, and will expire on December 31, 2033. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by exhibit G filed December 24, 1991:

Exhibit G Drawing	FERC No. 2330-	Showing
G-1	1001	Norwood - Project Boundary and Location Map
G-2	1002	East Norfolk - Project Boundary and Location Map
G-3	1003	Norfolk - Project Boundary and Location Map
G-4	1004	Raymondville - Project Boundary and Location Map

(2) Project works consisting of four developments:

The Norwood development comprising: (a) a 188-foot-long by 23-foot-high concrete gravity dam with 1-foot-high wooden flashboards; (b) a 350-acre reservoir at normal pool elevation 327.1 feet above mean sea level (msl); (c) a concrete intake structure with steel trashracks oriented 90 degrees to the direction of flow, a skimmer section, and three motor-operated steel sliding gates; (d) two timber flood gates, one 9 feet, 9 inches wide by 12 feet high, and the other 12 feet high by 12 feet wide; (e) a concrete log chute with stoplog opening 11 feet, 2 inches wide by 4 feet, 6 inches high; (f) a concrete and brick powerhouse 59 feet, 9 inches long by 43 feet wide by 34 feet high containing a 2,000-kW generating unit; (g) a 3-mile-long, 23 kilovolt (kV) transmission line connecting the Norwood and Norfolk developments; and (h) appurtenant facilities;

The East Norfolk development comprising: (a) a concrete gravity dam with seven hand-operated sluice gates measuring 8 feet wide by 9 feet high protected by steel trashracks oriented 24 degrees to the direction of flow; (b) a 4-foot by 4-foot pond drain; (c) a 135-acre reservoir at normal pool elevation 287.9 feet msl; (d) a concrete intake structure equipped with steel trashracks oriented 90 degrees to the direction of flow, a skimmer section, and an ice chute with a steel sliding gate; (e) a 32-foot-wide by 1,408-foot-long oval steel flume; (f) a powerhouse containing a 3,500 kW generating unit; (g) a 0.86-mile-long, 23 kV transmission line connecting the East Norfolk and Norfolk developments; and (h) appurtenant facilities;

The Norfolk development comprising: (a) a 20-foot-high concrete dam with 10-inch-high flashboards, three 12-foot-wide by 10-foot-high steel headworks gates, and two 9-foot-wide by 9-foot-high sluice gates; (b) a 10-acre reservoir at normal pool elevation 254.9 feet msl; (c) a 1,275-foot-long power canal; (d) a 700-foot-long, 14-foot-diameter wood stave pipeline protected by two steel trashracks oriented 90 degrees to the

direction of flow, a skimmer section, and a 6-foot-wide by 6-foot-high ice sluice gate used for flushing ice and debris downstream; (e) a 14-foot-diameter, 103-foot-long steel penstock fitted with a motor-operated 14-foot-diameter butterfly valve; (f) a concrete and brick powerhouse measuring 52 feet, 6 inches wide by 50 feet, 7 inches long by 35 feet high containing a 4,500 kW generating unit; (g) a short 2.4 kV underground transmission line and a 2.32-mile-long, 115 kV transmission line connecting the Norfolk and Raymondville developments; and (h) appurtenant facilities; and

The Raymondville development comprising: (a) a 292-foot, 6-inch-long by 17-foot-high concrete gravity dam having two-foot-high rubber and steel flashboards; (b) two 4-foot by 4-foot pond drains; (c) a 50-acre reservoir at normal pool elevation 211.6 feet msl; (d) a 48-foot-wide by 447-foot-long concrete power flume having trashracks oriented 90 degrees to the direction of flow, an ice chute, and three steel flume intake gates, each 12 feet wide by 10 feet high; (e) a concrete, brick, and steel powerhouse measuring 59 feet, 9 inches wide by 42 feet long by 34 feet high containing a 2,000 kW generating unit; and (f) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: The following Exhibit A sections, filed on December 24, 1991:

Pages A-2 to A-13, describing the existing mechanical, electrical, and transmission equipment.

Exhibit F: The following Exhibit F drawings, filed on December 24, 1991:

Exhibit F Drawing	FERC No. 2330-	Showing
F-1	1005	Norwood - Dam, Intake, and Powerhouse
F-2	1006	East Norfolk - Dam, Intake, and Powerhouse
F-3	1007	Norfolk - Dam, Intake, and Powerhouse
F-4	1008	Norfolk - Intake and Intake Gates
F-5	1009	Raymondville - Dam, Intake, and Powerhouse

BACKGROUND INFORMATION #16

Agency Correspondence Regarding Impact of Revised Configuration

Reliant Energy

225 Greenfield Parkway, Suite 201
Liverpool, NY 13088

EXPRESS MAIL

April 15, 2002

Honorable Magalie Roman Salas
Secretary
FEDERAL ENERGY REGULATORY COMMISSION
888 First Street, NE
Washington, DC 20426

SUBJECT: Carry Falls Project LP 2060 NY, Upper Raquette River Project LP 2084 NY, Middle Raquette River Project LP 2320 NY and Lower Raquette River Project LP 2330 NY
Order Issuing New Licenses – Article 401
2002 Annual Report

Dear Secretary Salas:

Articles 401 of the Order Issuing New License issued on February 13, 2002, for the Carry Falls Project, Upper Raquette River Project and the Middle Raquette River Project and Article 401 of the Order Approving Settlement Offer and Issuing New License for the Lower Raquette River Project (collectively referred to as the four Raquette River licenses), also issued on February 13, 2002, require(s) Erie Boulevard Hydropower, LP (Erie) to file an Annual Report on the status of license measures implemented and license measures to be undertaken in the current calendar year. Erie is herein filing an original and eight copies of the 2002 Annual Report in letter format.

Since the four Raquette River licenses were just recently issued, limited measures have been implemented to date. However, the following addresses measures implemented for the Middle Raquette River Project (LP 2320 NY):

Site	Measures Implemented
Colton	Walleye Spawning Flows
Hannawa	Walleye Spawning Flows
Sugar Island	Walleye Spawning Flows

Since it has been only a short time since issuance of the four Raquette River licenses, in summary, Erie intends to implement the specific license measures during 2002 as identified in Table 2-1 (Revised Master Implementation Schedule) of each license for the following projects:

Lower Raquette River Project,
Middle Raquette River Project and,
Carry Falls Project

The Upper Raquette River Project's Implementation Schedule does not require any implementation measures in 2002.

Please address any written correspondence to Mr. Sam S. Hirschey, Manager, Hydro Licensing and Regulatory Compliance. If you have any questions about this submittal, please feel free to contact the undersigned at (315) 413-2789.

Very truly yours,

Thomas M. Skutnik

Thomas M. Skutnik, P.E.
Hydro Licensing & Regulatory Compliance
Erie Boulevard Hydropower, L.P.

xc: S. S. Hirschey
A. J. Sidoti, New York Regional Director

New York State Department of Environmental Conservation
Division of Fish, Wildlife and Marine Resources, Region 6
Dulles State Office Building, 317 Washington Street, Watertown, New York 13601-3787
Phone: (315) 785-2261/62/63 • **FAX:** (315) 785-2242
Website: www.dec.state.ny.uApril 8, 2002

Erin M. Crotty
Commissioner

Mr. Thomas Skutnik
Hydro Licensing and Regulatory Compliance
Erie Boulevard Hydropower, LP
225 Greenfield Parkway
Suite 201
Liverpool, New York 13088

May 17, 2002

RE: Middle Raquette River Project LP 2320 NY
Higley Development - Higley Redevelopment Project
Unit / Penstock configuration

Dear Mr. Skutnik:

The Department of Environmental Conservation has reviewed the request for concurrence with the design change for the redevelopment of Higley.Hydro. It is our opinion that the currently proposed arrangement (4 units with 4 individual penstocks) is probably better suited to efficiently matching the range of flows expected at the site than the original single unit proposal. The present proposal may also serve to minimize lost generation associated with normal maintenance activities. The proposal results in the implementation of fish protection at the Higley facility by 2003 rather than 2013 as presently called for in the license.

The Department supports the proposed design modification. We stand ready to participate in any proceedings which may be required for the resolution of this matter.

As a precautionary note, all work must be performed in accordance with the requirements of the 401 Water Quality Certificate issued for the Middle Raquette Project

If you have any questions regarding the above, please contact the undersigned at 315-785-2267.

Sincerely,

Leonard E. Ollivett

Leonard E. Ollivett
Bureau of Habitat
Region 6

cc: David Stilwell, US Fish & Wildlife Service, attn Stephen Patch
B. Fenlon
W. Little
M. Woythal

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

May 22, 2002

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

RE: Middle Raquette River Hydroelectric Project (FERC #2320)
Higley Redevelopment

Dear Mr. Hirschey:

The U.S. Fish and Wildlife Service (Service) has reviewed Reliant Energy's (Reliant) May 15, 2002, request for concurrence with the design change for the new intake and powerhouse at the Higley development of the Middle Raquette River Project. The licensed proposal, which was included in the 1991 license application and was used as the basis for a Settlement Offer filed in 1998, consisted of a large penstock coming off the existing intake canal and leading to a single large Kaplan turbine. The revised design includes an entire new intake facility with four smaller penstocks leading to four units, two Kaplans and two fixed-blade propeller units.

The revised design may better match the range of flows expected at the site and expedites implementation of fish protection measures by 10 years. However, the design provided to us results in decreased efficiency of downstream fish movement due to the distance from the trashracks to the bypass sluice and the intervening retaining wall and power canal. Based on discussions between Mr. Patch of my staff and Reliant, it appears that this design can be modified fairly easily to improve the efficiency of downstream fish movement to a level comparable to the original proposal. The Service's engineers and biologists will work closely with Reliant to ensure that adequate fish movement measures are implemented. Therefore, the Service approves the revised intake design, provided that Reliant agrees to modify the downstream fish movement measures to increase efficiency and to obtain Service approval prior to constructing any of the necessary downstream movement measures.

The approval of any future design modifications would be greatly facilitated by early consultation with the Service and the New York State Department of Environmental Conservation. Such early consultation is consistent with the language and intent of the Settlement Offer and would expedite the approval process for design modifications. We appreciate the opportunity to comment on the designs and will work closely with Reliant to develop downstream movement

measures that are comparable to those envisioned in the Settlement Offer. If you have any questions or need additional information, contact Steve Patch at (607) 753-9334.

Sincerely,

Anne L. Secord

for David A. Stilwell
Field Supervisor

cc: NYSDEC, Watertown, NY (B. Fenlon, L. Ollivett)
NYSDEC, Albany, NY (W. Little)
NYRU, Rome, NY (B. Carpenter)
FWS, Hadley, MA (C. Orvis)

B.1 WATER QUALITY

NYSDEC 401 Water Quality Certificate
(June 11, 1998)

New York State Department of Environmental Conservation
Division of Environmental Permits, Room 538
50 Wolf Road, Albany, New York 12233-1750
Phone: (518) 457-2224 FAX: (518) 457-7759

John P. Cahill
Commissioner

June 11, 1998

Mr. Samuel S. Hirschey
Manager, Hydro Licensing and Regulatory Compliance
Niagara Mohawk Power Corporation
300 Erie Boulevard West, D-2
Syracuse, New York 13202

RE: **Upper Raquette River Project, FERC #2084 / DEC # 6-4099-00027/00001**
Carry Falls Reservoir Project, FERC #2060 / DEC # 6-4028-00021/00004
Water Quality Certificates

Dear Mr. Hirschey:

The Department of Environmental Conservation (the Department) hereby certifies that, based on our review of all pertinent information presented by Niagara Mohawk Power Corporation (NMPC) in its application for federal licenses for the Upper Raquette River and Carry Falls Reservoir Hydroelectric Projects and the Settlement Agreement dated March 13, 1998, NMPC has provided reasonable assurance that the subject Projects will comply with all applicable effluent standards, standards of performance and other state statutes, regulations and criteria applicable to the affected waterbody as required by the State regulatory provisions implementing Section 401 of the Federal Water Pollution Control Act.

This certification is issued pursuant to Section 401 of the Federal Water Pollution Control Act, 33 U.S.C. 1341. The Department makes this certification provided that the attached standard conditions are met, as well as the terms and conditions of the attached Settlement Agreement signed by the Department, NMPC, the U.S. Fish and Wildlife Service, the National Park Service, New York Rivers United, the Adirondack Mountain Club, the Adirondack Park Agency, the National Audubon Society, the American Whitewater Affiliation, American Rivers, the New York State Conservation Council, the Adirondack Council, American Canoe Association, the Jordan Club, the Association for the Protection of the Adirondacks, North Country Raquette River Advocates and St. Lawrence County insofar as those terms and conditions relate to all applicable effluent standards, standards of performance and other state statutes, regulations and criteria applicable to the affected waterbody as required by the State regulatory provisions implementing Section 401 of the Federal Water Pollution Control Act. The terms and conditions of this Settlement

describe the operations of the five developments comprising the Upper Raquette River Project, and the one development comprising the Carry Falls Reservoir Project, located in the Towns of Parishville and Colton, in St. Lawrence County.

Pursuant to the regulations of the Department at 6 NYCRR §621.14, the Department reserves the right to modify, suspend or revoke the Certification(s), or parts thereof, if there are material changes proposed for facilities or operations under the new license(s) such that amendment of one or both licenses is required; or in the event the referenced application(s) or Settlement Agreement are materially amended or modified, as defined by regulations of the Federal Energy Regulatory Commission at 18CFR §4.30(b)14 and 4.35 (f), respectively.

Sincerely,

Jeffrey J. Sama
Director, Division of Environmental Permits

JJS:CRV/BAH:dmt
Atts (2)

cc without att.:
401 Service List
Signatories
J. Sabattis, NMPC - Hydro Licensing Coordinator
R. Vaas, Regional Permit Administrator, Region 6
L. Ollivett, Habitat Protection Biologist, Region 6
W. Sarbello, Bureau of Environmental Protection
B.A.Hughes, Envi. Permits
W. Little, Legal

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
STANDARD WATER QUALITY CONDITIONS

A. OVERSIGHT AND ADMINISTRATION

1. 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

New York State Department of Environmental Conservation
Division of Environmental Permits, Room 538
50 Wolf Road, Albany, New York 12233-1750
Phone: (518) 457-2224 FAX: (518) 457-7759

John P. Cahill
Commissioner

June 11, 1998

Mr. Michael W. Murphy, Esq.
Law Department
Niagara Mohawk Power Corporation
300 Erie Boulevard West, A-3
Syracuse, New York 13202

RE: **Lower Raquette River Project, FERC #2330 / DEC # 4099-00006/00001**
Middle Raquette River Project, FERC #2320 / DEC # 4099-00007/00001
Water Quality Certificate

Dear Mr. Murphy:

The Department of Environmental Conservation (the Department) hereby certifies that, based on our review of all pertinent information presented by Niagara Mohawk Power Corporation (NMPC) in its application for federal licenses for the Lower Raquette River and Middle Raquette River Hydroelectric Projects and the Settlement Agreement dated March 13, 1998, NMPC has provided reasonable assurance that the subject Projects will comply with all applicable effluent standards, standards of performance and other state statutes, regulations and criteria applicable to the affected waterbody as required by the State regulatory provisions implementing Section 401 of the Federal Water Pollution Control Act.

This certification is issued pursuant to Section 401 of the Federal Water Pollution Control Act, 33 U.S.C. 1341. The Department makes this certification provided that the attached standard conditions are met, as well as the terms and conditions of the attached Settlement Agreement signed by the Department, NMPC, the U.S. Fish and Wildlife Service, the National Park Service, New York Rivers United, the Adirondack Mountain Club, the Adirondack Park Agency, the National Audubon Society, the American Whitewater Affiliation, American Rivers, the New York State Conservation Council, the Adirondack Council, American Canoe Association, the Jordan Club, the Association for the Protection of the Adirondacks, North Country Raquette River Advocates and St. Lawrence County insofar as those terms and conditions relate to all applicable effluent standards, standards of performance and other state statutes, regulations and criteria applicable to the affected waterbody as required by the State regulatory provisions implementing Section

401 of the Federal Water Pollution Control Act. The terms and conditions of this Settlement describe the operations of the four developments comprising the Lower Raquette River Project, and the four developments comprising the Middle Raquette River Project, located in the Towns of Norfolk, Potsdam, Pierrepont, Parishville and Colton, in St. Lawrence County.

Pursuant to the regulations of the Department at 6 NYCRR §621.14, the Department reserves the right to modify, suspend or revoke the Certification(s), or parts thereof, if there are material changes proposed for facilities or operations under the new license(s) such that amendment of one or both licenses is required; or in the event the referenced application(s) or Settlement Agreement are materially amended or modified, as defined by regulations of the Federal Energy Regulatory Commission at 18CFR §4.30(b)14 and 4.35 (f), respectively.

Sincerely,

Jeffrey J. Sama
Director, Division of Environmental Permits

JJS:CRV/BAH:dmt
Atts. (2)

cc without atts.:
401 Service List
Signatories
J. Sabattis, NMPC - Hydro Licensing Coordinator
R. Vaas, Regional Permit Administrator, Region 6
L. Ollivett, Habitat Protection Biologist, Region 6
W. Sarbello, Bureau of Environmental Protection
B.A.Hughes, Envi. Permits
W. Little, Legal

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
STANDARD WATER QUALITY CONDITIONS

A. OVERSIGHT AND ADMINISTRATION

1. 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

E.1 THREATENED AND ENDANGERED SPECIES PROTECTION

Agency Corespondence

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 99/608

SEP 9 1999

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, DC 20426

Subject: **COMMENTS, TERMS AND CONDITIONS, PRESCRIPTIONS**
FERC Project No. 2060-005
Carry Falls Project
Filed by the U.S. Department of the Interior

Dear Mr. Boergers:

The U.S. Department of the Interior (Department) has reviewed the July 15, 1999, Notice of Application Ready for Environmental Analysis for the existing Carry Falls Project (FERC #2060), located on the Raquette River in St. Lawrence County, New York. The original license was issued to the Niagara Mohawk Power Corporation (NMPC). The Federal Energy Regulatory Commission (FERC) has issued an order approving the transfer of the project license and the pending license application to Erie Boulevard Hydro, L.P. (EBH). EBH proposes to continue operating the existing Carry Falls Reservoir for flow augmentation to numerous hydroelectric developments located downstream on the Raquette River. There is no installed generating capacity at the site and none is proposed in the application. The license application includes the Final Settlement Offer for the Raquette River Projects, dated March 13, 1998, and signed by NMPC. Wherever the Settlement Offer differs from the License Application, our comments reflect proposals in the Settlement Offer.

GENERAL COMMENTS

Project Setting

The Raquette River flows approximately 111 miles from its origins at Blue Mountain Lake in Adirondack State Park to the St. Lawrence River. At its confluence with the St. Lawrence, the Raquette flows through the St. Regis Indian reservation, home to the federally-recognized St. Regis Mohawk Tribe. The Raquette River, the most dammed river per mile in the United States, includes 24 dams and 21 impoundments. There are 20

Reservoir is <1,357', a "drought" condition exists. In order to maintain the minimum flow of 290 cfs at Kent Mill (which is equivalent to 250 cfs at Piercefield due to the intervening drainage area), the guide curve for Carry Falls Reservoir must be violated. Therefore, when a "drought" condition occurs, the Licensee shall maintain a base flow at least equal to the average daily flow at Piercefield. In addition, the Licensee must consult with the NYSDEC to determine if modifications to the base flow and/or Carry Falls elevations are warranted.

3. **The Licensee shall modify the existing guide curve for Carry Falls Reservoir such that the impoundment will never be drawn down below elevation 1,355', except under emergency conditions as described in the Settlement Offer or under drought conditions to provide base flows below Raymondville (as detailed in Item 2 above).** The new guide curve will go into effect on June 1, 2000, unless the license has not been issued, in which case it will go into effect on June 1, 2001.

PRESCRIPTIONS

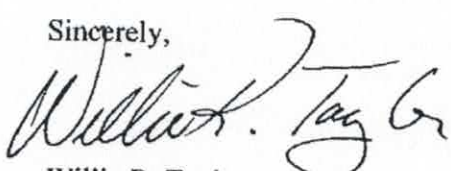
In order to allow for the timely implementation of fishways, including effectiveness measures, the Department requires that the FERC include the following condition in any license it may issue for the Carry Falls Project:

Pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, exercises his authority under Section 18 by reserving the authority to prescribe the construction, operation and maintenance of such fishways as deemed necessary, including measures to evaluate the need for fishways, and to determine, ensure, or improve the effectiveness of such fishways. This reservation includes authority to prescribe fishways for any fish species to be managed, enhanced, protected, or restored to the basin during the term of the license.

* * * * *

We appreciate the opportunity to provide comments on this application for new license.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

Enclosure (8 copies for filing)
cc: Carry Falls Service List

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 99/607

SEP 9 1999

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, DC 20426

Subject: **COMMENTS, TERMS AND CONDITIONS, PRESCRIPTIONS**
FERC Project No. 2084-020
Upper Raquette River Project
Filed by the U.S. Department of the Interior

Dear Mr. Boergers:

The U.S. Department of the Interior (Department) has reviewed the July 15, 1999, Notice of Application Ready for Environmental Analysis for the existing Upper Raquette River Hydroelectric Project (FERC #2084), located on the Raquette River in St. Lawrence County, New York. The original license was issued to the Niagara Mohawk Power Corporation (NMPC). The Federal Energy Regulatory Commission (FERC) has issued an order approving the transfer of the project license and the pending license application to Erie Boulevard Hydro, L.P. (EBH). EBH proposes to continue operating the existing Stark, Blake, Rainbow Falls, Five Falls, and South Colton developments. The license application includes the Final Settlement Offer for the Raquette River Projects, dated March 13, 1998, and signed by NMPC. Wherever the Settlement Offer differs from the License Application, our comments reflect proposals in the Settlement Offer.

GENERAL COMMENTS

Project Setting

The Raquette River flows approximately 111 miles from its origins at Blue Mountain Lake in Adirondack State Park to the St. Lawrence River. At its confluence with the St. Lawrence, the Raquette flows through the St. Regis Indian reservation, home to the federally-recognized St. Regis Mohawk Tribe. The Raquette River, the most dammed river per mile in the United States, includes 24 dams and 21 impoundments. There are 20 licensed hydropower facilities on the river. Five of these are included in this application; 14 are included in the Settlement Offer.

Fish Protection and Downstream Movement

The Settlement Offer recommends that fish protection measures be installed at all projects. These measures will consist of trashracks or overlays with a maximum 1" clear-spaced openings. These trashracks will be installed at all sites on the Upper Raquette River per an agreed-upon schedule between 2012 and 2018.

Downstream fish movement will be facilitated at each site via creation of a "fish-friendly" flow release mechanism. The structures at each site will serve as the minimum flow release structures. These structures will be made "fish-friendly" by reducing the roughness of the spillway face, reducing the dispersion of the release across the spillway face, and ensuring that an adequate plunge pool exists.

Fish Passage

No upstream fish passage facilities are being required at this time. However, the Department reserves the right to require that the Licensee install fish passage facilities in the future.

TERMS AND CONDITIONS

Pursuant to Section 10(j) of the Federal Power Act, as amended, and the Fish and Wildlife Coordination Act, the Department requests that the following special articles be included in any license the FERC issues for this project. Reporting and further consultation requirements should be added by the FERC to ensure timely and adequate compliance with the license articles.

1. **All measures included in the Settlement Offer, except those that are specifically flagged by the signatories as not to be included in the FERC license, shall be included in their entirety, without modification, as numbered license articles in any license issued by the FERC and shall be enforceable by the FERC.**

2. **The Licensee shall implement the following bypassed reach flow regimes (as described in Section 3 of the Settlement Offer) according to the implementation schedule identified in Table 2-1 of the Settlement Offer. All flows are nominal. Flows will vary with headpond elevation, but must remain within the range specified in parentheses. The flow release structure should be designed so that the nominal flow is released at the midpoint of the impoundment fluctuation range.**

Stark

As soon as control of the river is achieved in 2002, but no later than

installed in 2003 as soon as the Licensee gains control of the river, but no later than December 31, 2003. A minimum conveyance flow equal to the bypassed reach flow will be provided via a stoplog structure adjacent to the left shore of the dam. The conveyance structure shall be designed in consultation with the USFWS and NYSDEC, and will include roughness reductions of the spillway face, measures to reduce dispersion across the spillway face, and an adequate plunge pool. The final structure shall be approved by the USFWS and NYSDEC.

PRESCRIPTIONS

In order to allow for the timely implementation of fishways, including effectiveness measures, the Department requires that the FERC include the following condition in any license it may issue for the Upper Raquette River Hydroelectric Project:

Pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, exercises his authority under Section 18 by reserving the authority to prescribe the construction, operation and maintenance of such fishways as deemed necessary, including measures to evaluate the need for fishways, and to determine, ensure, or improve the effectiveness of such fishways. This reservation includes authority to prescribe fishways for any fish species to be managed, enhanced, protected, or restored to the basin during the term of the license.

* * * * *

We appreciate the opportunity to provide comments, recommendations, terms and conditions, and prescriptions on this application for a new license.

Sincerely,

Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

Enclosure (8 copies for filing)
cc: Upper Raquette River Service List

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 99/609

SEP 9 1999

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, DC 20426

Subject: **COMMENTS, TERMS AND CONDITIONS, PRESCRIPTIONS**
FERC Project No. 2320-005
Middle Raquette River Project
Filed by the U.S. Department of the Interior

Dear Mr. Boergers:

The U.S. Department of the Interior (Department) has reviewed the July 15, 1999, Notice of Application Ready for Environmental Analysis for the existing Middle Raquette River Hydroelectric Project (FERC #2320), located on the Raquette River in St. Lawrence County, New York. The original license was issued to the Niagara Mohawk Power Corporation (NMPC). The Federal Energy Regulatory Commission (FERC) has issued an order approving the transfer of the project license and the pending license application to Erie Boulevard Hydro, L.P. (EBH). EBH proposes to continue operating the existing Higley, Colton, Hannawa, and Sugar Island developments. The original license application has been modified and superseded by the Final Settlement Offer for the Raquette River Projects, dated March 13, 1998, and signed by NMPC. Wherever the Settlement Offer differs from the License Application, our comments reflect proposals in the Settlement Offer.

GENERAL COMMENTS

Project Setting

The Raquette River flows approximately 111 miles from its origins at Blue Mountain Lake in Adirondack State Park to the St. Lawrence River. At its confluence with the St. Lawrence, the Raquette flows through the St. Regis Indian reservation, home to the federally-recognized St. Regis Mohawk Tribe. The Raquette River, the most dammed river per mile in the United States, includes 24 dams and 21 impoundments. There are 20 licensed hydropower facilities on the river. Four of these are included in this application; 14 are included in the Settlement Offer.

or reduce the fluctuation zone, thus protecting and increasing shallow water littoral and wetland habitats, resulting in increased primary productivity, and improvements to fish spawning and nursery habitats.

Fish Protection and Downstream Movement

The Settlement Offer recommends that fish protection measures be installed at all projects. These measures will consist of trashracks or overlays with a maximum 1" clear-spaced openings. These trashracks will be installed at three sites on the Middle Raquette River per an agreed-upon schedule by 2011. The exception is at Sugar Island, where fish protection was not feasible without compromising the desired downstream movement.

Downstream fish movement will be facilitated at each site via creation of a "fish-friendly" flow release mechanism. The structures at Colton and Sugar Island were to be completed as part of ongoing maintenance work during 1999 and expected to be fully functional in 2000. It is our understanding that the work at Colton was completed but the structure at Sugar Island was not constructed. The structure at Higley may be completed as part of the redevelopment of that site. If redevelopment is delayed, a downstream movement structure must be functional in 2001. Since there is no minimum flow requirement at Higley, a fish conveyance flow of at least 20 cfs should be provided. Each flow release structure has been designed to be as close to the trashracks as possible to facilitate fish finding the bypasses.

Fish Passage

No upstream fish passage facilities are being required at this time. However, the Department reserves the right to require that the Licensee install fish passage facilities in the future.

Recreation

The Settlement Offer includes a variety of recreational amenities which have been determined to be compatible with fish and wildlife resources and their associated habitats. Also included in the Settlement Offer are provisions for periodic releases for whitewater boating at Colton, Hannawa, and Sugar Island. To ensure that these flow releases do not compromise the habitat gains that are being sought with the recommended bypassed reach flow regimes, procedures are included to provide flow ramping. In addition, the whitewater flow release schedule in the Settlement Offer places certain restrictions on the release of these flows. These restrictions include maximum flow releases allowed, no releases on consecutive days, and no more than six releases in a given reach within one year.

TERMS AND CONDITIONS

structure. This structure was scheduled to be completed by December 31, 1999. If not already completed, this structure should be completed as soon as the Licensee gains control of the River in the year of license issuance. The final structure should be approved by the USFWS and NYSDEC, and should include an adequate plunge pool.

6. **Whitewater boating releases shall be implemented (as described in Section 8 of the Settlement Offer) according to the implementation schedule identified in Table 2-1 of the Settlement Offer. The peak flows for scheduled releases should be approximately 1,250 cfs at Colton, 800 cfs at Hannawa, and 1,500 cfs at Sugar Island. The Licensee shall incorporate flow ramping when ascending to or descending from the desired peaks of any scheduled release. The instream flow being provided at the time of the release shall be deemed the starting point for ramping. The basic ramping scheme shall be an hourly doubling of the flow while ascending and an hourly halving of the flow while descending, within equipment limitations. These ramping schedules may be revised with approval of the USFWS and NYSDEC. The number of releases shall not exceed six per whitewater boating season in any given reach, and releases shall not be scheduled on consecutive days at any given development.**

PRESCRIPTIONS

In order to allow for the timely implementation of fishways, including effectiveness measures, the Department requires that the FERC include the following condition in any license it may issue for the Middle Raquette River Hydroelectric Project:

> Pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, exercises his authority under Section 18 by reserving the authority to prescribe the construction, operation and maintenance of such fishways as deemed necessary, including measures to evaluate the need for fishways, and to determine, ensure, or improve the effectiveness of such fishways. This reservation includes authority to prescribe fishways for any fish species to be managed, enhanced, protected, or restored to the basin during the term of the license.
>
> * * * * *

We appreciate the opportunity to provide comments, recommendations, terms and conditions, and prescriptions on this application for a new license.

Sincerely,

Willie R. Taylor

Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

Enclosure (8 copies for filing)
cc: Middle Raquette River Service List

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 99/610

SEP 9 1999

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, DC 20426

Subject: **COMMENTS, TERMS AND CONDITIONS, PRESCRIPTIONS**
FERC Project No. 2330-007
Lower Raquette River Project
Filed by the U.S. Department of the Interior

Dear Mr. Boergers:

The U.S. Department of the Interior (Department) has reviewed the July 15, 1999, Notice of Application Ready for Environmental Analysis for the existing Lower Raquette River Hydroelectric Project (FERC #2330), located on the Raquette River in St. Lawrence County, New York. The original license was issued to the Niagara Mohawk Power Corporation (NMPC). The Federal Energy Regulatory Commission (FERC) has issued an order approving the transfer of the project license and the pending license application to Erie Boulevard Hydro, L.P. (EBH). EBH proposes to continue operating the existing Norwood, East Norfolk, Norfolk, and Raymondville developments. The original license application has been modified and superseded by the Final Settlement Offer for the Raquette River Projects, dated March 13, 1998, and signed by NMPC. Wherever the Settlement Offer differs from the License Application, our comments reflect proposals in the Settlement Offer.

GENERAL COMMENTS

Project Setting

The Raquette River flows approximately 111 miles from its origins at Blue Mountain Lake in Adirondack State Park to the St. Lawrence River. At its confluence with the St. Lawrence, the Raquette flows through the St. Regis Indian reservation, home to the federally-recognized St. Regis Mohawk Tribe. The Raquette River, the most dammed river per mile in the United States, includes 24 dams and 21 impoundments. There are 20 licensed hydropower facilities on the river. Four of these are included in this application; 14 are included in the Settlement Offer.

Downstream fish movement will be facilitated at each site via creation of a "fish-friendly" flow release mechanism. The structures at Norfolk and East Norfolk are to be completed in 2000 and will serve as the minimum flow release structures (the full flow at East Norfolk and 50% of the flow at Norfolk). Since no minimum flow releases are required at Norwood and Raymondville, special structures to facilitate downstream movement will be constructed at each site. A conveyance flow of at least 20 cfs will be provided at each of these two locations.

Fish Passage

No upstream fish passage facilities are being required at this time. However, the Department reserves the right to require that the Licensee install fish passage facilities in the future.

TERMS AND CONDITIONS

Pursuant to Section 10(j) of the Federal Power Act, as amended, and the Fish and Wildlife Coordination Act, the Department requests that the following special articles be included in any license the FERC issues for this project. Reporting and further consultation requirements should be added by the FERC to ensure timely and adequate compliance with the license articles.

1. **All measures included in the Settlement Offer, except those that are specifically flagged by the signatories as not to be included in the FERC license, shall be included in their entirety, without modification, as numbered license articles in any license issued by the FERC and shall be enforceable by the FERC.**

2. **The Licensee shall implement the following bypassed reach flow regimes (as described in Section 3 of the Settlement Offer) according to the implementation schedule identified in Table 2-1 of the Settlement Offer. All flows are nominal. Flows will vary with headpond elevation, but must remain within the range specified in parentheses. The flow release structure should be designed so that the nominal flow is released at the midpoint of the impoundment fluctuation range.**

East Norfolk

As soon as control of the river is achieved in 2000, but no later than December 31, 2000, the Licensee shall commence release of 75 cfs (65-85 cfs) into the East Norfolk bypassed reach through the stoplog section of the dam near the left shore via a release structure approved by the USFWS. The Licensee shall maintain the interim flow of 75 cfs until the new structure is completed and the permanent flow regime is established.

East Norfolk

A physical barrier with a maximum 1" clear spacing shall be installed at the location of the existing trashrack structure prior to December 31, 2004, to reduce fish entrainment through the turbines. The instream flow release structure shall be used to facilitate downstream fish movement. This structure will be installed in 2000 as soon as the Licensee gains control of the river, but no later than December 31, 2000. The instream flow release structure shall be designed in consultation with the USFWS and NYSDEC, and will include an adequate plunge pool. The final structure should be approved by the USFWS and NYSDEC.

Norfolk

A physical barrier with a maximum 1" clear spacing shall be installed at the location of the existing trashrack structure prior to December 31, 2002, to reduce fish entrainment through the turbines. One of the instream flow release structures shall be used to facilitate downstream fish movement. This will be the trash sluice located at the transition of the power canal and the pipeline. A nominal flow of at least 37.5 cfs (35-40 cfs) will be provided through this structure. The trash sluice flume must be modified to reduce flow velocities, and adequate plunge pools and conveyance routes must be constructed in the rip-rap basin and obstructed channel between the trash sluice flume and the bypassed reach. This structure will be installed in 2000 as soon as the Licensee gains control of the river, but no later than December 31, 2000. The instream flow release structure shall be designed in consultation with the USFWS and NYSDEC. The final structure should be approved by the USFWS and NYSDEC.

Raymondville

A physical barrier with a maximum 1" clear spacing shall be installed at the location of the existing trashrack structure prior to December 31, 2000, to reduce fish entrainment through the turbines. An existing trash sluice gate and/or low level sluice gate shall be modified to facilitate downstream fish movement in 2001 as soon as the Licensee gains control of the river, but no later than December 31, 2001. A minimum conveyance flow of 20 cfs will be provided through these gates. The pool adjacent to the powerhouse will be modified as necessary to ensure an adequate plunge pool. The final structure should be approved by the USFWS and NYSDEC.

PRESCRIPTIONS

In order to allow for the timely implementation of fishways, including effectiveness measures, the Department requires that the FERC include the following condition in any license it may issue for the Lower Raquette River Hydroelectric Project:

Pursuant to Section 18 of the Federal Power Act, as amended, the Secretary of the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, exercises his authority under Section 18 by reserving the authority to prescribe the construction, operation and maintenance of such fishways as deemed necessary, including measures to evaluate the need for fishways, and to determine, ensure, or improve the effectiveness of such fishways. This reservation includes authority to prescribe fishways for any fish species to be managed, enhanced, protected, or restored to the basin during the term of the license.

* * * * *

We appreciate the opportunity to provide our comments, recommendations, terms and conditions, and prescriptions on this application for a new license.

Sincerely,

Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

Enclosure (8 copies for filing)
cc: Lower Raquette River Service List

ORION
POWER NEW YORK
225 GREENFIELD PARKWAY, SUITE 201 • LIVERPOOL, NY 13088
PHONE: (315) 413-2700 • FAX: (315) 461-8577

July 27, 2000

July 27, 2000

Hon. David P. Boergers
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington DC 20426

Re: Carry Falls Project (No. 2060-005), Upper Raquette River Project (No. 208-020), Middle Raquette River Project (No. 2320-005), Lower Raquette River Project (No. 2330-007), Village Of Potsdam Project (No. 2869-007)
Erie Boulevard Hydropower, L.P. Comments on Commission Staff's Draft Environmental Assessment

Dear Secretary Boergers:

Enclosed are an original and eight (8) copies of Erie Boulevard Hydropower's (Erie) comments pertaining to the above referenced Draft Multiple Project Environmental Assessment (DMPEA) for Erie's Carry Falls Project (No. 2060-005), Upper Raquette River Project (No. 208-020), Middle Raquette River Project (No. 2320-005), Lower Raquette River Project (No. 2330-007), and the Village Of Potsdam Project (No. 2869-007) issued by the Commission on June 16, 2000.

Should there be any questions or comments pertaining to this submittal, please do not hesitate to contact the undersigned at (315) 413-2787.

Very truly yours,

Jerry L. Sabattis
Hydro Licensing Coordinator

Enc.
cc: w/Enc.: J. Mark Robinson, FERC
Ted Raabe, FERC
Sam Hirschey, Erie
William Madden, Esq. Winston and Strawn
Attached Service List

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ERIE BOULEVARD HYDROPOWER, L.P.
LIVERPOOL, NEW YORK

CARRY FALLS PROJECT (NO. 2060-005),
UPPER RAQUETTE RIVER PROJECT (NO. 208-020),
MIDDLE RAQUETTE RIVER PROJECT (NO. 2320-005),
LOWER RAQUETTE RIVER PROJECT (NO. 2330-007),
VILLAGE OF POTSDAM PROJECT (NO. 2869-007)

COMMENTS ON COMMISSION STAFF'S
DRAFT MULTIPLE PROJECT ENVIRONMENTAL ASSESSMENT

INTRODUCTION

On June 16, 2000 the Federal Energy Regulatory Commission (Commission) issued a Notice of Availability of Draft Multiple Project Environmental Assessment (DMPEA) pertaining to Erie Boulevard Hydropower, L.P.'s (Erie) Carry Falls Project (No. 2060-005), Upper Raquette River Project (No. 2084-020), Middle Raquette River Project (No. 2320-005) and Lower Raquette River Project (No. 2330-007). This DMPEA also pertained to the Village of Potsdam Project (No. 2869-007). This report provides Erie's comment's on the DMPEA.

The focus of Erie's review of the DMPEA is based on a comparison of the DMPEA recommended alternative and the relicensing alternative recommended in each respective new license application and amendments emanating from the Raquette River Settlement Offer (Settlement Offer) filed with the Commission on April 22, 1998. As a result of this review, Erie's comments which follow are organized in three categories: 1) Miscellaneous Comments; 2) Endangered Species and 3) Developmental Analysis/Economics.

MISCELLANEOUS COMMENTS

With few exceptions, Erie found the summary of proposed actions in the DMPEA to be generally consistent with its understanding of the current proposed actions as set forth in the Settlement Offer. Erie also agrees with comments already filed by the Adirondack Mountain Club (ADK) and the New York State Department of Environmental Conservation (NYSDEC). We would note an apparent typographical error in ADK's comment letter at the top of page 2 in the sentence: "The site is a 400 by 42 foot foundation ruin of a tanning factory for sole leather, active from 1856 to 1998 ....." We believe this sentence should say "active from 1856 to 1898". In any event, the comments below are intended to supplement or complement the comments filed by ADK and NYSDEC.

1. *Page 7, 1st paragraph, 2nd line*: The New York Power Pool no longer exists and has been replaced by the New York Independent System Operator.

form of operation (see Section 2.5.2 of the Settlement). The Middle and Lower Raquette River Projects are not capable of operating in a load following mode, but their operation may coincide with peak demand periods.

12. *Pages 69-70, Table 4*: This composite table of the nominal instream flows also includes(in parentheses) the flow tolerances agreed upon in the Settlement. This table should have a footnote describing the rationale and intent of the nominal flows and corresponding flow tolerances as detailed in Section 3.2.2 of the Settlement.

13. *Page 75, 1st paragraph, last line*: The statement "...elevation would not drop below 1,355.0 feet" should be changed to "...elevation would not drop below 1,355.0 feet under normal operating conditions. This wording would then be consistent with the wording of Section 5.3.1 of the Settlement which characterizes the 1,355.0 limit relative to normal operation.

14. *Page 105, 2nd paragraph, 4th to last line*: FERC states "Erie proposes to monitor flows to determine ramping and peak flow levels through assessment of the relationships..." This should be changed to "Erie proposes to determine ramping and peak flows through the assessment of the relationships..." This wording reflects the fact that the Settlement does not call for monitoring (gaging) of the whitewater release. Rather the relationships will be assessed to ensure the releases result in the desired ramping and peak flows. Monitoring of flows implies streamflow gaging, and we determined in Settlement negotiations that streamflow gaging of whitewater releases would be impractical and unsafe.

RARE, THREATENED AND ENDANGERED SPECIES

The Commission staff's analysis of rare, threatened and endangered species is largely based on a letter it received from the U.S. Fish and Wildlife Service (USFWS) dated August 5, 1999. First, we are chagrined that we were never served a copy of the USFWS August 5, 1999 filing with the Commission pertaining to Erie's projects on the Raquette River. Consequently, the first time we were made aware of this letter was by reference made in the DMPEA (page 87). We also are puzzled why the yellow lampmussel survey became a staff recommendation for Erie and not for the Village of Potsdam whose project is situated between Erie's Middle and Lower Raquette River Projects.

During field studies and settlement negotiations, we were aware of the USFWS interest in the presence of bald eagle in the vicinity of the Upper Raquette River and Carry Falls Projects. But, this concern did not rise to the level of USFWS requiring any special settlement measures to address this measure as the Commission staff correctly notes in the DMPEA. Concern about the presence of yellow lampmussel did not surface during this process.

One key objective sought by Erie and its predecessor, Niagara Mohawk, in entering into settlement agreements is to avoid or minimize open-ended license conditions. The Raquette

River Settlement Offer is no exception. We feel that the Commission staff's recommendation to address bald eagle and yellow lampmussel negates this objective.

1. Bald Eagle

In the case of bald eagle, Commission staff recommends "that the final recreation plan, to be developed by Erie in consultation with the signatories to the Settlement, include measures to minimize the effect of increased recreational boating us on potential bald eagle habitat." One could argue that "minimizing" the effect on bald eagle habitat could go so far as to necessitate not constructing the agreed upon canoe portage trails if it is perceived that the added recreation could create impacts to bald eagle nesting areas. However, not constructing these recreational facilities would be in violation of the Settlement Offer. In addition, during settlement discussions the presence of the eagle nest site was periodically noted and did enter into the team's settlement plan for the Raquette River.

To avoid such open ended implications, we feel that the Commission staff's recommendation to consult with the signatories to the Settlement Offer must be based on actual site specific circumstances and focused on a finite measure designed to be compatible with the recreational measures conceptually agreed upon in the Settlement Offer. To confirm the site specific facts pertaining to bald eagle sightings, we have taken a proactive approach to contact the NYSDEC's Mark Woythal (see License Application page E.3-47), Peter Nye and Blanche Town concerning the presence of the bald eagle in the vicinity of the Blake development (personal communications Mark Woythal, Peter Nye and Blanche Town, NYSDEC, and J. Homa, IA, July 2000). Based on these discussions it was confirmed that a single nesting pair of bald eagle has been documented by the NYSDEC to have utilized two trees for nests near and to the east of the upstream end of the Blake impoundment. Although, the exact nest locations cannot be provided, the nest site is located on the opposite side of the river from the canoe portage and some thousand feet distance from the proposed route of the canoe portage between the Stark and Blake impoundment (see Upper Raquette License Application Figure E.5-1, sheet 1, for the location of the proposed canoe portage route). NYSDEC files also noted, that historically, Niagara Mohawk and Erie staff have cooperated with the NYSDEC for the placement of appropriate signs in the vicinity of the nest site that warns of the presence of nesting eagle.

Given the information confirmed via the foregoing consultation, Erie proposes that the scope of this finite measure should be in the form of cooperative installation (and design, if necessary) of appropriate signage in the vicinity of this specific canoe portage trail location. Signs, if determined to be appropriate by agencies, may give a clear message warning that nesting sites are to be avoided. However, because of the relatively isolated nature of the current nest site it may be more appropriate to avoid signage that could call attention to the site. Therefore, we recommend that the Commission amend its recommendation so as to require that Erie consult with the Settlement signatories to determine the appropriateness of utilizing signage intended to warn people not to disturb nesting sites so as to avoid impacting bald eagle.

2. Yellow Lampmussel

The August 5, 1999 USFWS letter recommends that the "environmental documents" pertaining to the Middle and Lower Raquette River Projects include an evaluation of the potential effects of the proposed activities on the yellow lampmussel (*Lampsilis cariosa).* We do not feel that the Commission staff completed this requested evaluation in its "environmental documents" (the DMPEA). Instead the Commission staff recommends that Erie conduct the survey recommended by the USFWS as a post license issuance measure. It would seem more logical to conduct the requested yellow lampmussel survey before the preparation of the DMPEA to support the evaluation of the potential project impacts in the DMPEA.

Therefore, in the spirit of cooperation inherent in the Settlement Offer, and to preclude the Commission issuing an open-ended license condition, we have consulted with the NYSDEC and the USFWS and secured their agreement to proceed with the requested yellow lampmussel survey as part of these comments on the DMPEA. Kurt J. Jirka (Ichthyological Associates, Inc) conducted the survey in July 2000. Mr. Jirka is highly qualified to conduct this survey as he is co-author of *The pearly mussels of New York State* (New York State Museum Memoir 26) and he also has an extensive knowledge of the Raquette River based on his work on the Middle and Lower Raquette River Hydroelectric Projects since 1988. Attached hereto, is a report entitled *Status and Distribution of the Yellow Lampmussel, Lampsilis cariosa, in the Vicinity of the Middle and Lower Raquette River Hydroelectric Projects, St. Lawrence County, New York,* Ichthyological Associates, July 2000.

As the attached report indicates, yellow lampmussel was historically documented only from one location on the Raquette River near Potsdam. In July 2000, it was found to occur at 12 locations extending the known distribution of *L. cariosa* in the Raquette River throughout much of the lower river. It is apparent from this survey that yellow lampmussel is more abundant in the Raquette River than previously noted, and self-sustaining populations exist where they had not previously been reported.

Yellow lampmussel inhabit relatively firm, fine substrate (clean sand and gravel) found in runs, riffles, and pools, as the findings of the attached survey affirm. As supported by Instream Flow Incremental Methodology (IFIM) studies filed with the Commission, the minimum flows agreed upon in the Settlement Offer will provide and enhance existing lamp mussel habitat in the Sugar Island bypass reach of the Middle Raquette River Hydroelectric Project. Base flows downstream of Raymondville will constantly wet suitable substrate at numerous locations in a 15 mile reach downstream of the Lower Raquette River Hydroelectric Project. Therefore, we conclude that the Middle and Lower Raquette River Project proposed relicensing alternative, as set forth in the Settlement Offer, will have a positive effect on this species of concern in creating significant enhancement of yellow lampmussel habitat. We recommend that the Commission staff account for these facts in the final Multiple Project Environmental Assessment pertaining to the Middle and Lower Raquette River Projects and delete staff's recommendation to conduct lampmussel surveys after license issuance. The survey has been completed in consultation with the agencies and is being filed with the Commission herewith.

STATUS AND DISTRIBUTION OF THE YELLOW LAMPMUSSEL, *LAMPSILIS CARIOSA*, IN THE VICINITY OF THE MIDDLE AND LOWER RAQUETTE RIVER HYDROELECTRIC PROJECTS, ST. LAWRENCE COUNTY, NEW YORK

Prepared for

ERIE BOULEVARD HYDROPOWER L.P.
Liverpool, New York

Prepared by

ICHTHYOLOGICAL ASSOCIATES, INC.
50 Ludlowville Road
Lansing, New York 14882
(607) 533-8801

26 July 2000

TABLE OF CONTENTS

INTRODUCTION

The yellow lampmussel (*Lampsilis cariosa*) is known to occur in the Raquette River near Potsdam, NY (Johnson 1947, Jirka 1991). In response to a request by the U.S. Fish and Wildlife Service (USFWS) for an assessment of the population status of this species in the portion of the Raquette River affected by operation of the Middle and Lower Raquette River Hydroelectric projects (FERC Project Nos. 2320 and 2330), Erie Boulevard Hydropower L.P., sponsored a survey of the Raquette River in the vicinity of these projects and downstream to determine the status of the yellow lampmussel in this reach of the river. The objectives of this survey included:

- Describe general habitat conditions used by this species.
- Identify the distribution of the species in the study reach.
- Identify relative abundance (based on numbers found during a timed search) of the species at sites where it is observed.
- Document recent reproduction in identified populations based on the presence or absence of multiple year classes and the presence of gravid females.

Ichthyological Associates, Inc. (IA), was chosen to develop a study scope and conduct the survey because of IA's familiarity with the Raquette River and the fact that Kurt Jirka, one of New York State's leading authorities on freshwater mussels, is a Senior Aquatic Biologist for IA. Mr. Jirka has worked on various projects on the Raquette River for IA since 1988 and is co-author of *The Pearly Mussels of New York State* (Strayer and Jirka 1997), published by the New York State Museum. He has also conducted mussel surveys in several drainages throughout New York State for the New York Natural Heritage Program. These surveys have included determining the status of *L. cariosa* at selected locations of historical occurrences in New York State (Jirka 1991).

AGENCY CONSULTATION

At the request of Erie Boulevard Hydropower L.P., IA developed a brief proposal for conducting a survey of the Raquette River in the vicinity of the Middle and Lower Raquette River projects and downstream to determine the status of *L. cariosa*. This proposal was then circulated to staff of the New York State Department of Environmental Conservation (NYSDEC) regional office in Watertown, NY and staff of the USFWS in Cortland, NY for their review and approval. Following receipt of approval of the proposal from staff of both agencies, the study was commenced in mid-July 2000. See Appendix A for communications related to the agency consultation process.

METHODS

Prior to conducting the field survey, the habitat requirements of *L. cariosa* were identified by reviewing available scientific literature and unpublished data from field notes of Kurt Jirka. Sites in the vicinity of the Middle and Lower Raquette River projects that might potentially support populations of *L. cariosa* were then identified by reviewing habitat mapping information generated

during past instream flow incremental methodology (IFIM) and routing investigations at these projects and identifying those habitat segments that potentially contained habitat suitable for *L. cariosa*. In addition, IA's general knowledge of project impoundments was used as a basis for identifying potential habitat in these waters.

The field survey was conducted July 18-20, 2000 by visiting areas potentially containing habitat for *L. cariosa*, evaluating the habitat to determine if it actually was suitable for *L. cariosa*, and then searching suitable areas for *L. cariosa*. Searches were conducted by a two-person crew via snorkeling, use of an Aquascope™ or other underwater viewing device, or observing the bottom and/or stream bank directly. Mussels were identified to species as they were encountered. When individuals of *L. cariosa* were found, their sex (determined by shell shape), size, and microhabitat (depth, substrate, general velocity condition) were noted. Searches were timed in an effort to determine relative abundance based on number of individuals found per unit of time. The location of sites where *L. cariosa* was found was also recorded on a field map.

RESULTS

Habitat Use by *L. cariosa*

Information in the scientific literature on habitat use by *L. cariosa* is scant. Ortmann (1919) and Strayer (1993) noted that it is generally found in small to large rivers, especially in riffles. Jirka (unpublished data) found this species in several small to large streams in the Susquehanna River basin in New York. The species typically inhabited substrates of gravel mixed with cobble and, sometimes, sand. Rarely was this species found in substrates with silt. Depths at which Jirka collected this species ranged from 0.3 to 3.0 ft, though were usually less than 1.0 ft (under mid- to late summer flow conditions). *L. cariosa* were collected from a variety of flow conditions, from slow-flowing backwaters to swift riffles.

Survey Study Reaches

Review of habitat mapping information for the bypassed reaches of the Middle and Lower Raquette River projects (Homa et al. 1990a, 1990b) and the Lower Raquette River routing investigation (Stafford-Glase et al. 1990) revealed several segments that might contain habitat that could support *L. cariosa*. These included habitat segments 1 and 4 in the Colton bypassed reach; habitat segment 1 in the Hannawa bypassed reach; the lower region (habitat segments 1-31), segment 38 in the upper region, and segment 52 in the eastern region of the Sugar Island bypassed reach; and segments 2-11 and 18 in the Norfolk bypassed reach. In addition (based on IA's previous experience on the Raquette River), the Colton impoundment, the head of the Hannawa impoundment where it meets the Colton bypassed reach, the head of the Sugar Island impoundment where it meets the Hannawa bypassed reach, the head of the City of Potsdam impoundment where it meets the Sugar Island bypassed reach, the head of the Raymondville impoundment where it meets the Norfolk bypassed reach, and the free-flowing reach of the Raquette River downstream of the Raymondville dam were identified as areas that might contain suitable habitat for *L. cariosa*.

These areas were then visited to evaluate the suitability of the habitat for *L. cariosa*, with the exception of habitat segments 4, 5, 26, 27, and 52 in the Sugar Island bypassed reach. These segments in the Sugar Island bypassed were not visited due to time constraints and the fact that several other segments in the reach were visited. The Raquette River downstream of Raymondville was floated by canoe and surveyed at 10 locations between the Raymondville development and the St. Lawrence County Route 45 bridge, approximately 17 miles downstream and approximately 2.8 miles upstream from the St. Lawrence River.

Distribution and Abundance of *L. cariosa*

L. cariosa was identified from 12 surveyed sites in the study reach (Tables 1 and 2). Habitat where *L. cariosa* was typically found was characterized by a mix of sand/gravel substrate, often with cobble and some boulder present. Depth was typically over 1.5 ft, and velocity ranged from less than 0.5 ft/s to about 3.0 ft/s. In areas of relatively high gradient, this species was limited to substrates of coarse gravel underlain with sand in pockets among cobble and boulder.

No areas of suitable habitat for *L. cariosa* were found upstream of the Sugar Island bypassed reach (Table 1). Substrate in the Colton impoundment consisted primarily of sand/silt or very soft muck and was considered generally unsuitable for *L. cariosa*. Habitats evaluated in and adjacent to the Colton and Hannawa bypassed reaches did not contain enough finer (sand and small gravel) substrate to support *L. cariosa*.

The Sugar Island bypassed reach did contain some areas of suitable habitat for *L. cariosa*, all located in the lower region of the reach (Table 1). Areas with sand/gravel substrate, usually mixed with cobble and boulder, are scattered throughout much of the lower region of this bypassed reach. Scattered individuals of *L. cariosa* were found in habitat segment 10 and the channel adjacent to segments 1-3 and 6 (Tables 1 and 2). The greatest number (overall and per unit of time searching) of *L. cariosa* found anywhere during the survey were found in the area immediately downstream of the end of Sugar Island, at the downstream end of the Middle Raquette River Project boundary where it meets the City of Potsdam impoundment. The habitat supporting this concentration of *L. cariosa* is expansive in this area. It appears to extend down into the City of Potsdam impoundment, though that area was not surveyed specifically.

The Norfolk bypassed reach did not contain any suitable habitat for *L. cariosa*, but the head of the Raymondville impoundment where it meets the Norfolk bypassed reach did contain some areas that were suitable. This location contained a mix of cobble, gravel, sand, and boulder. However, no mussels were found during a 20-minute search of this area.

The Raquette River downstream of the Raymondville development has many areas that contain habitat suitable for supporting *L. cariosa* (Table 1). Nine of the 10 sites surveyed contained *L. cariosa*, and several other areas not surveyed also appeared to be suitable habitat. Sites where *L. cariosa* was found in the 17-mile reach of river surveyed downstream of the Raymondville development ranged from 0.9 to 14.9 miles downstream of the Raymondville dam (Table 2). This reach of the Raquette River contains abundant habitat for *L. cariosa*, with some areas (particularly in the upstream half of the reach) apparently extending across most or all of the river channel and

along several hundred feet of river. The downstream half of this reach consists of several long, deep pools with sand or silt substrate of limited or no suitability for *L. cariosa*. However, areas in this lower reach (such as site 9) where gradient increased, resulting in some coarser substrate, generally had at least some suitable habitat for *L. cariosa*.

As noted previously, those areas containing *L. cariosa* were generally greater than 1.5 ft deep, and often deeper. This was true throughout the parts of the river where this species was found. It appears that this species has been able to maintain a limited population in the Sugar Island bypassed reach and the head (at least) of the City of Potsdam impoundment in areas of suitable substrate that remained inundated year-round. Downstream of the Raymondville dam, this species has maintained populations in areas that have not been susceptible to dewatering resulting from hydroelectric project operations. Areas of suitable substrate but with depth less than about 1.5 ft failed to support this or other mussel species.

Evidence of reproduction of *L. cariosa* in the study reach was limited. Only large (>100 mm) adult specimens were found in the vicinity of the Sugar Island development. None of the female *L. cariosa* found were noted to be gravid (brooding larvae in their gill chambers), but it was difficult to determine this condition without sacrificing the individual (no *L. cariosa* were sacrificed). It also may not have been the appropriate time of year to observe gravid females of this species. Many of the *L. cariosa* found at the downstream end of the Sugar Island development were very large, old individuals. Typically, a stable population will contain a broad size range of individuals. However, it is not unusual for young, small individuals to be overlooked in a survey of this nature, since they tend to spend most of their time buried beneath the substrate during the first few years of life. Their smaller size also makes them less likely than larger adults to be spotted during snorkeling surveys. The considerably skewed size distribution in the *L. cariosa* population in the vicinity of Sugar Island does, however, suggest that reproduction in this population may be extremely limited.

Evidence of recent reproduction of *L. cariosa* was found at some of the sites surveyed downstream of the Raymondville development. An individual estimated between 5 and 7 years old was collected from site 2. Another specimen approximately 6 years old was found at site 3, and site 5 had mussels ranging from about 80 mm to 140 mm, with the youngest probably about 7 years old. A specimen presumed to be about 4 years old (about 60 mm) was found at site 7, and the shells of a 4- or 5-year old female were found in a midden (a pile of discarded shells created by foraging muskrats or other furbearers) on shore adjacent to site 8. Again, no gravid females were found in this reach of river.

In general, more male (102) than female (53) *L. cariosa* were found, but this nearly 2:1 ratio was not consistent among sites. In some locations, males were more than 10 times as abundant as females, whereas at other sites females slightly outnumbered males. The lowest ratios of males to females were generally found at sites 5 through 8 downstream of the Raymondville development.

As mentioned previously, *L. cariosa* was almost exclusively found in areas where depth exceeded 1.5 ft, despite appropriate substrate and velocity conditions at shallower depths. This suggests that intermittent dewatering of some areas due to hydroelectric project operations may serve to limit the distribution of this species. Institution of interim, and ultimately minimum, flows in the bypassed reaches of the Middle and Lower Raquette River projects and establishment of a base flow

downstream of the Raymondville development should serve to increase the available habitat for *L. cariosa* in the Raquette River. More permanent flow regimes may enable this species to expand its distribution in the river and possibly increase its abundance. Populations that appear to have limited reproduction may see an increase in reproduction if the flow regime benefits obligate fish host species that *L. cariosa* uses to complete the larval stage of its life cycle. Increases in populations of fish host species could lead to increased survival of *L. cariosa* larvae and ultimately increases in abundance of the species. Unfortunately, the fish hosts for *L. cariosa* are unknown, so it is not known if fish host abundance can be expected to increase.

Prior to this survey, *L. cariosa* was known from only one general locale (Raquette River at Potsdam/Sugar Island) in the Raquette River. This survey has identified 12 locations where this species exists in the river, extending the known distribution of *L. cariosa* in the Raquette River throughout much of the lower river. This survey has also supplements previously limited information on the habitat use of this species in northern New York. It is apparent from this survey that *L. cariosa* is more abundant in the Raquette River than previously noted, and self-sustaining populations exist where they had not previously been reported.

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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Erie Boulevard Hydropower L.P. — Projects Nos. 2060-005, 2084-020, 2320-005, and 2330-007

Village of Potsdam — Project No. 2869-007
New York

NOTICE OF AVAILABILITY OF FINAL
MULTIPLE PROJECT ENVIRONMENTAL ASSESSMENT

(April 18, 2001)

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's (Commission) regulations, 18 CFR Part 380 (Order No. 486, 52 F.R. 47897), the Office of Energy Projects staff has reviewed the applications for new license for the Carry Falls, Upper Raquette River, Middle Raquette River, and the Lower Raquette River Hydroelectric Projects, and the application for amendment of exemption for the Potsdam Water Power Project, located on the Raquette River in St. Lawrence County, New York, and has prepared a final multiple project Environmental Assessment (FEA) for the projects. In the FEA, the Commission's staff has analyzed the potential environmental impacts of the existing projects and has concluded that approval of the projects, with appropriate environmental protection measures, would not constitute a major federal action significantly affecting the quality of the human environment.

Copies of the FEA are available for review in the Public Reference Branch, Room 2-A, of the Commission's offices at 888 First Street, N.E., Washington, D.C. 20426. The FEA may also be viewed on the web at http://www.ferc.fed.us/online/rims.htm (please call (202)208-2222 for assistance).

David P. Boergers
Secretary

FINAL MULTIPLE PROJECT ENVIRONMENTAL ASSESSMENT FOR HYDROPOWER LICENSES

RAQUETTE RIVER PROJECTS

Carry Falls Project
FERC Project No. 2060-005

Upper Raquette River Project
FERC Project No. 2084-020

Middle Raquette River Project
FERC Project No. 2320-005

Lower Raquette River Project
FERC Project No. 2330-007

Potsdam Water Power Project
FERC Project No. 2869-007

New York

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Environmental and Engineering Review
888 First Street, NE
Washington, D.C. 20246

species are generally small forage species, characterized by high fecundity, high natural mortality, and relatively short life spans. These species composed approximately 56 percent of the overall catch at the above sites.

Table 7. Summary of turbine survival tests (Source: KA, 1996).

Body form	Size	Mean survival
centrarchid	small	95.2 %
centrarchid	medium	87.2 %
centrarchid	large	83.8 %
percid	small	85.0 %
percid	medium	91.1 %
percid	large	91.8 %
soft ray	small	80.8 %
soft ray	medium	80.6 %
soft ray	large	79.3 %
salmonid	small	92.8 %
salmonid	medium	93.1 %
salmonid	large	97.4 %

The annualized turbine mortality for the aforementioned forage and juvenile fish at the Lower Raquette River Project developments ranged from less than 1,000 to approximately 16,000 fish per site, most of which were either young-of-year, juvenile, or forage organisms. This equates to a maximum daily average fish loss rate of 44 fish. Given the high natural mortality characteristics of these fish, the impact on the riverine ecosystem of a loss of the small magnitude exhibited at these sites is questionable, particularly since a naturally supported, apparently stable warmwater/coolwater fishery presently exists in the Raquette River.

The loss for legal-size game fish also appears to be small. For example, at the Norfolk site where estimated turbine loss was highest, a total of approximately 67 smallmouth bass greater than the minimum harvestable size were killed annually. This equates to an average annual fish loss of 0.2 fish per day. This is low when compared to the legal harvest rate of 5 fish *per day per angler* for smallmouth bass permitted under the NYSDEC general angling regulations for this portion of the Raquette River.

In 1996, KA reported that eels are projected to comprise 0.96 to 1.4 percent (62.7 to 3,436.5 individuals) of the total number of entrained fish at the Lower Raquette River Project (KA, 1996). Eels are also expected to account for 3.1 to 7.7

percent (23.2 to 1271.4 individuals) of total fish mortalities per year at the Lower Raquette developments. The report also projects about 37 percent mortality for entrained eels.

Although fish entrainment and mortality do not appear to be having an adverse effect on the fishery, Erie proposes, consistent with the Settlement, to install trashracks with 1-inch clear bar spacing at all its hydro developments except the Sugar Island development of the Middle Raquette River Project, to prevent entrainment of adult fish. FWS has also mandated 1-inch trashrack spacing at the Potsdam Water Power Project.

Erie also proposes to provide measures to facilitate downstream fish movement at all 13 of its hydroelectric developments. In addition to the 1-inch trashracks, these measures would include the provision of an alternate route for downstream fish movement and a plunge pool system designed to reduce damage to fish moving downstream. At the 10 developments where instream flows are proposed, Erie proposes to locate the instream flow release point to provide for safe downstream fish passage. At installations where instream flows have not been required, Erie proposes to facilitate downstream fish passage via gate structures. Table 8 shows the specific measures proposed at each development.

Because there are no anadromous fish species in the reach of the Raquette being considered in this MPEA, anadromous fish passage is not a concern. Provisions for upstream fish passage are not recommended at this time.

The Settlement reserves Interior's authority under Section 18 of the Federal Power Act to prescribe upstream or downstream fish passage facilities in the future. This reservation ensures that adequate facilities for fish passage would be in place should management goals or needs change during the life of the license.

Table 8. Fish protection and passage measures (Source: Settlement, March 1998).

Reservoir	1-inch trashracks	Downstream flow (cfs)	Passing structure	Conveyance and collection/ protection
Carry	N/A	N/A	N/A	N/A
Stark	X	45	Pipe	"
Blake	X	55	Instream Flow	"
Rainbow	X	20	Instream Flow	"
Five Falls	X	50	Instream Flow	"
South Colton	X	20	Instream Flow	"
Higley	X	20	Stoplog Section	"
Colton	X	20	Sluice Rehab	retrofit trash sluice return channel*
Hannawa	X	50	Instream Flow	"
Sugar Island	N/A	300	Instream Flow	N/A
Potsdam	X	40	Instream Flow	N/A
Norwood	X	20	Stoplog	"
East Norfolk	X	75	Instream Flow	plunge pool
Norfolk	X	37.5	Sluice/Pipe	modify trash sluice; plunge pool
Raymondville	X	20	Sluice	modify pool

* Roughness reduction of spillway face, water dispersion across spillway face, plunge pool.

Potsdam Water Power Project

Potsdam proposes to construct a fish passage structure adjacent to the proposed West dam powerhouse intake consisting of a 1.5-foot-wide sluiceway extending from the near turbine intake chamber into the tailrace near the turbine discharge. The fish passage structure would have a small intake chamber equipped with trashracks with 8-inch clear bar spacing installed across the opening. The 18-foot by 38-foot turbine intake would be equipped with 1-inch clear bar spaced trashracks situated at a 90 degree angle to the spillway. The maximum approach velocity at the trashrack would be 1.9 feet per second (fps). Potsdam proposes to provide a 40 cfs conveyance flow through the fish passage structure. Potsdam does not propose any fish protection or passage structures at the existing East dam powerhouse.

FWS indicates, in its mandatory terms and conditions filed on October 12, 1999, that Potsdam's application for amendment does not adequately describe the proposed fish protection measures. FWS indicates that, consistent with other recent licensing

proceedings involving projects on the Raquette River, Potsdam should be required to retrofit the East dam with fish protection measures, as well as install fish protection measures at the West dam powerhouse, to facilitate the downstream movement of fish. Therefore, FWS specifies that Potsdam file with the Commission, for approval, final designs for fish protection and passage facilities proposed for the West dam that are consistent with preliminary plans already discussed with FWS. FWS further specifies that Potsdam should file designs for fish protection measures at the East dam that also include a trashrack with a maximum 1-inch clear bar spacing, a sluice to provide safe downstream fish movement, an adequate plunge pool at the sluice outlet, and adequate fish attraction and conveyance flows. Designs for both the East and West dam fish passage facilities should be filed within 60 days of any Commission approval of amendment.

Our Analysis

The provision of 1-inch trashracks is expected to reduce entrainment of adult fish, but the previous entrainment/mortality studies done on the Upper, Middle, and Lower Raquette Projects indicate that these were not the fish most prone to entrainment and that turbine mortality was not a likely contributor to fishery limitations in the system. Mortality of those small fish that are likely to be entrained is likely to be low (EPRI, 1992). However, installation of 1-inch trashracks may contribute to increased impingement of adult fish if the approach velocities are too great.

We reviewed the developments of the Raquette River Projects and determined that the average approach velocities, as measured 1 foot in front of the trashracks, were generally less than 2 fps. The approach velocities are generally higher, up to 3 fps, at the Upper Raquette River developments. However, at these developments, the intakes are off-shore and deep, reducing the likelihood of impingement. Therefore, we conclude that installation of 1-inch trashrack screens at the Raquette River developments and at the Potsdam Water Power Project should not result in any adverse effects on the Raquette River fisheries resources provided that Erie continues to routinely remove debris from the trashracks.

The installation of 1-inch trashrack screens at the Upper, Middle, and Lower Raquette River Projects also could provide some measure of fish protection to American eels, the only catadromous fish identified within project waters. However, there is no technology currently available to effectively exclude eels from entrainment, or to guide them into fish passage structures. Current research being conducted is examining the issue of upstream and downstream eel passage at hydroelectric facilities,

habitat for a number of avian species, including: white-throated sparrow, dark-eyed junco, hermit thrush, black-throated blue warbler, and oven bird. Canopy dwellers and other species associated with the habitat consist of broad-winged hawk, barred owl, downy woodpecker, hairy woodpecker, pileated woodpecker, least flycatcher, American redstart, black-and-white warbler, scarlet tanager, solitary vireo, and black-capped chickadee. The large white pines present in the mixed conifer-hardwood forest provide suitable nesting and perching habitat for a variety of raptors including sharp-shinned hawk, Cooper's Hawk, broad-winged hawk, and red-tailed hawk. The conifers also provide suitable habitat for ruffed grouse, a variety of woodpecker, blue jay, and tufted titmouse.

Rare, Threatened, and Endangered Species

During the Settlement discussions, FWS indicated that the only federally listed or proposed endangered or threatened species existing within all project boundaries is the transient bald eagle (August 6, 1997). During Erie's reservoir fluctuation study, bald eagles were documented within the project area adjacent to the Blake reservoir. NYSDEC staff have observed nesting eagles within the project area on Blake reservoir (letter from C. Randy Vaas, Regional Supervisor, NYSDEC, Watertown, NY, dated July 23, 2000). In response to the notice of application tendered for filing, issued by the Commission on February 10, 1999, FWS indicated that it participated in and signed the Settlement. It stated that it had no further additional study requests, but reserved the right to request additional studies should the Settlement not be accepted by the Commission (letter from David Stilwell, Acting Field Supervisor, FWS, Cortland, NY, to David Boergers, Secretary, Commission, Washington, DC, dated March 26, 1999). Subsequently, by letter dated August 5, 1999, in response to the Commission routine request for an update on threatened and endangered species of June 29, 1999, FWS states that the bald eagle is known to occur in the vicinity of the Carry Falls and Upper Raquette River Project sites and requests an evaluation of the potential direct, indirect, and cumulative effects of specific project-related activities on the bald eagle or its habitat.

Also in the August 5, 1999 letter, FWS expresses concern about the presence of the yellow lampmussel in the vicinity of the Middle and Lower Raquette River Projects. FWS considers the yellow lampmussel a species of concern (formerly known as Category 2 Candidate species), and its status is being monitored throughout much of its range. FWS recommended that an evaluation of the Middle and Lower Raquette River Projects include the potential direct, indirect, and cumulative effects of the proposed activities on the yellow lampmussel.

Two state-listed species have been documented in the vicinity of the projects. These are the common loon, a protected wildlife/special concern species, and the spruce grouse, a threatened species. NYSDEC staff have observed the common loon at two sites in the Upper Raquette River Project area: one pair and one chick in 1985 and two adults and two chicks in 1996 on Stark reservoir, and one pair and one chick in 1985 on Rainbow reservoir (letter from C. Randy Vaas, Regional Supervisor, NYSDEC, Watertown, NY, dated July 20, 2000).

b. Environmental effects: NMPC proposes a reduction in the fluctuation in reservoirs and riverine reaches affected by the developments and the provision of instream flows to enhance fish and wildlife habitat. Neither NMPC nor the signatories to the Settlement propose surveys or plans for the protection of the bald eagle or yellow lampmussel. Potsdam proposes to install an inflatable flashboard to maintain the existing water surface elevations.

Our Analysis

Erie's proposal, as presented in the Settlement, defines the normal reservoir fluctuations as the maximum drawdown limit within a given reservoir associated with the operating range necessary to achieve ROR with pondage, store-and-release peaking, load following, re-regulating, or store-and-release pulsing hydropower operations. Each of the allowable fluctuations proposed maintains the status quo or reduces existing drawdown (see table 6 in section V.C.6). The existing wetland habitat at those sites operating at the status quo would be maintained. Wetland habitat would benefit from water level stability in the reservoirs where the extent of drawdowns would be reduced. Based on our observations, the proposed limit on reservoir fluctuation, including status quo and drawdown reduction, would benefit the wetland communities that occur in the Raquette River Project reservoirs.

FWS indicates that bald eagles are known to occur in the vicinity of the Carry Falls and Upper Raquette River Projects, and nesting sites have been observed on Blake reservoir since 1990 . Erie does not propose any activities that would require the removal of potential perch trees or nest sites at these two projects. The proposed recreational enhancements at these two projects consist of canoe portage access points and relatively short trails to access these locations at each of the developments (see section V.C.6). Canoe access to the full length of the Raquette River probably would increase boater use at the Carry Falls and the Upper Raquette River project areas. Increased boater use could disturb potential bald eagle use of the project area.

Therefore, we recommend that Erie consult with the FWS and the NYSDEC to determine the necessity of placing signage in the vicinity of the proposed canoe portage to warn users of nearby eagle nesting sites that should be avoided. Further, we conclude that future operation of the Carry Falls and Upper Raquette River Projects with mitigative signage would not likely adversely affect the bald eagle.

FWS also recommended that the Middle and Lower Raquette River Projects be surveyed by a qualified person to determine the presence or absence of the yellow lampmussel. In response to FWS's concern, Erie developed a study plan in consultation with FWS and NYSDEC and conducted surveys (July 26, 2000) for the occurrence of this species in the Middle and Lower Raquette River Project areas. The results of the surveys indicated that yellow lampmussel is more abundant in the Raquette River than previously noted, and self-sustaining populations exist where they had not previously been reported. .

Erie proposes to limit normal reservoir fluctuations at the Middle Raquette River Project (ranging from 2.0 to 0.4 feet) and the Lower Raquette River Project (ranging from 1.0 to 0.5 feet) to lessen the effect of water level fluctuation on existing wildlife habitat. Sudden changes in reservoir elevations may affect yellow lampmussel colonies. Those individuals found near the shallow shoreline areas may be temporarily exposed when water levels recede. The yellow lampmussel is able to slowly move from environments not suitable for survival. Although mobile, the yellow lampmussel requires time to adjust to water fluctuations. Any sudden drops in water level could expose the yellow lampmussel to desiccation as well as potential predation. However, among freshwater species, some unionaceans appear relatively tolerant of emersion and when exposed to air, can survive for weeks or months during these periods (Thorp and Covich, 1991).

The mussel survey demonstrated that suitable habitat was present to support an abundance of yellow lampmussel in the Sugar Island development of the Middle Raquette River Project, and at the Norwood and Raymondville developments of the Lower Raquette River Projects. The mussels were present in areas where depth was typically over 1.5 feet and appropriate substrate was found (loose, unconsolidated substrates of sand and gravel where mussels are able to burrow and overwinter). Velocity ranged from less than 0.5 ft/s to about 3.0 ft/s. The Sugar Island bypassed reach and downstream of the Raymondville development contained the greatest yellow lampmussel abundance and habitat suitability. These two impoundments currently fluctuate 1.0 foot and 0.5 foot, respectively, on a daily basis. The Norwood impoundment currently fluctuates 0.5 foot on a daily basis. These fluctuation ranges

support existing and future colonies of mussels under the current project operations. Those developments that currently fluctuate greater than 1.0 foot (such as the Higley development at 2.0 feet) do not contain suitable habitat, therefore would not serve as potential colonization sites for this species.

Existing conditions at these projects have provided habitat which supports a stable population of the yellow lampmussel. The applicant's proposed actions would maintain the current fluctuation at the Sugar Island development and would reduce the fluctuation to 0.5 foot at the Raymondville development. We conclude that the existing yellow lampmussel populations would likely not be adversely affected by relicensing the Middle and Lower Raquette River Projects as proposed. Establishment of more stable minimum flow regimes, including a base flow below the Raymondville development, and reduced reservoir fluctuation would likely increase habitat for the yellow lampmussel, thereby potentially expanding its distribution and abundance in the Raquette River. For these reasons, we do not recommend any further studies of the yellow lampmussel at this time.

Section V.C.6 describes the proposed recreational facilities for the Raquette River Projects. Based on our observations, vegetation proposed for removal does not offer any unique ecological characteristics not found elsewhere in the project areas. Creation of canoe portages and access would cause some minor, short-term wildlife displacement during construction. Long-term, but minor, wildlife displacement also would result from use of the access sites. Wildlife common to the area are typical of those found in developed areas, however, and probably would become accustomed to frequent human disturbances at potential upstream and downstream access sites and would experience little incremental effects. The enhancement benefits offered by the proposed access to project waters would outweigh the minor adverse effects on terrestrial resources.

Potsdam Water Power Project

Potsdam's proposed addition of an inflatable flashboard on the West dam at the Potsdam Water Power Project, as a measure to ensure maintenance of the existing reservoir water level elevations would be acceptable under the criteria for issuing exemptions on the condition that the reservoir elevation remains constant. Under the existing exemption's mandatory conditions, Potsdam must operate the project in a ROR mode and may not change the water surface elevation of the reservoir. Based on our analysis in section V.C.2, Water Resources, we conclude that use of the proposed inflatable flashboard would result in a maximum 0.08 inch foot (or less than 1 inch)

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 2060-051-New York
Carry Falls Project
Project No. 2084-060-New York
Upper Raquette River Project
Erie Boulevard Hydropower, LP

May 26, 2009

Mr. Thomas M. Skutnik
Erie Boulevard Hydropower, LP
225 Greenfield Parkway, Suite 201
Liverpool, NY 13088

Subject: 2008 Bald Eagle Monitoring Report; Articles 407

Dear Mr. Skutnik:

This letter is in reference to the material you filed on January 14, 2009 to comply with the Order Approving Bald Eagle Protection and Enhancement Plans Pursuant to Articles 407, issued July 17, 2003. The approved plans require you to request the results of the New York State Department of Environmental Conservation's (NYDEC) field observations on bald eagles, and file them with the Commission by January 31 of each year. According to NYSDEC field observations in 2008, nest site 14C was active-failed, and no activity was observed at historic nest sites 14A or 14B. You report that the cause of the failure of nest site 14C is not known. The NYDEC does not recommend signs to protect bald eagle nesting at this time.

The material filed fulfills the requirements of your approved plans. If you have any questions concerning this matter, please contact me at (202) 502-8915.

Sincerely,

Hillary T. Berlin

Hillary T. Berlin
Land Resources Branch
Division of Hydropower
Administration and Compliance

Species Reports

Environmental Conservation Online System

Species listed in New York based on published population data

Notes:

- This report shows the species listed in this state according to the Federal Register listing description.
- This list does not include experimental populations and similarity of appearance listings.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Listed species (based on published population data) -- 33 listings

Animals -- 23 listings

Status	Species/Listing Name
E	Bat, Indiana (*Myotis sodalis*)
E	Beetle, American burying (*Nicrophorus americanus*)
E	Butterfly, Karner blue (*Lycaeides melissa samuelis*)
E	Curlew, Eskimo (*Numenius borealis*)
T	Lynx, Canada lower 48 States DPS (*Lynx canadensis*)
E	Plover, piping Great Lakes watershed (*Charadrius melodus*)
T	Plover, piping except Great Lakes watershed (*Charadrius melodus*)
E	Puma (=cougar), eastern (*Puma (=Felis) concolor couguar*)
T	Sea turtle, green except where endangered (*Chelonia mydas*)
E	Sea turtle, hawksbill (*Eretmochelys imbricata*)
E	Sea turtle, Kemp's ridley (*Lepidochelys kempii*)
E	Sea turtle, leatherback (*Dermochelys coriacea*)
T	Sea turtle, loggerhead (*Caretta caretta*)
T	Snail, Chittenango ovate amber (*Succinea chittenangoensis*)
E	Sturgeon, shortnose (*Acipenser brevirostrum*)
E	Tern, roseate northeast U.S. nesting pop. (*Sterna dougallii dougallii*)
T	Tiger beetle, northeastern beach (*Cicindela dorsalis dorsalis*)
T	Turtle, bog (=Muhlenberg) northern (*Clemmys muhlenbergii*)
E	Wedgemussel, dwarf (*Alasmidonta heterodon*)
E	Whale, finback (*Balaenoptera physalus*)

E	Whale, humpback (***Megaptera novaeangliae***)
E	Whale, right (***Balaena glacialis (incl. australis)***)
E	Wolf, gray Lower 48 States, except where delisted and where EXPN. Mexico. (***Canis lupus***)

Plants – 10 listings

Status	Species/Listing Name
T	Amaranth, seabeach (***Amaranthus pumilus***)
E	Bulrush, Northeastern (***Scirpus ancistrochaetus***)
E	Chaffseed, American (***Schwalbea americana***)
T	Fern, American hart's-tongue (***Asplenium scolopendrium var. americanum***)
E	Gerardia, sandplain (***Agalinis acuta***)
T	Monkshood, northern wild (***Aconitum noveboracense***)
T	Orchid, eastern prairie fringed (***Platanthera leucophaea***)
T	Pink, swamp (***Helonias bullata***)
T	Pogonia, small whorled (***Isotria medeoloides***)
T	Roseroot, Leedy's (***Sedum integrifolium ssp. leedyi***)

Last updated: June 26, 2009

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List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State

Endangered

Those endangered species which meet one or both of the criteria specified in section 182.2(g) of 6NYCRR Part 182 and which are found, have been found, or may be expected to be found in New York State include:

	Common Name	Scientific Name
Molluscs	1Dwarf Wedgemussel	*Alasmidonta heterodon*
	1Pink mucket	*Lampsilis abrupta*
	1Clubshell	*Pleurobema clava*
	1Fat pocketbook	*Potamilus capax*
	Rayed Bean	*Villosa fabalis*
	2Chittenango Ovate Amber Snail	*Novisuccinea chittenangoensis*
Insects	Tomah Mayfly	*Siphlonisca aerodromia*
	1,3American Burying Beetle	*Nicrophorus americanus*
	Hessel's Hairstreak	*Callophrys hesseli*
	1Karner Blue Butterfly	*Lycaeides melissa samuelis*
	Regal Fritillary	*Speyeria idalia*
	Persius Duskywing	*Erynnis persius*
	Grizzled Skipper	*Pyrgus centaureae wyandot*
	Arogos Skipper	*Atrytone arogos arogos*
	Bog Buckmoth	*Hemileuca species 1*
	Pine Pinion Moth	*Lithophane lepida lepida*
Fishes	1Shortnose Sturgeon	*Acipenser brevirostrum*
	3Silver Chub	*Macrhybopsis storeriana*
	Pugnose Shiner	*Notropis anogenus*
	Round Whitefish	*Prosopium cylindraceum*
	Bluebreast Darter	*Etheostoma camurum*
	*Gilt Darter	*Percina evides*
	3Spoonhead Sculpin	*Cottus ricei*
	Deepwater Sculpin	*Myoxocephalus thompsoni*
Amphibians	Tiger Salamander	*Ambystoma tigrinum*
	Northern Cricket Frog	*Acris crepitans*
Reptiles	Mud Turtle	*Kinosternon subrubrum*
	2Bog Turtle	*Clemmys muhlenbergii*
	1Atlantic Hawksbill Sea Turtle	*Eretmochelys imbricata*
	1Atlantic Ridley Sea Turtle	*Lepidochelys kempii*
	1Leatherback Sea Turtle	*Dermochelys coriacea*
	Queen Snake	*Regina septemvittata*
	Massasauga	*Sistrurus catenatus*
Birds	Spruce Grouse	*Falcipennis canadensis*
	3Golden Eagle	*Aquila chrysaetos*
	Peregrine Falcon	*Falco peregrinus*
	Black Rail	*Laterallus jamaicensis*
	1,2,4Piping Plover	*Charadrius melodus*
	1,3Eskimo Curlew	*Numenius borealis*
	1Roseate Tern	*Sterna dougallii dougallii*
	Black Tern	*Chlidonias niger*
	Short-eared Owl	*Asio flammeus*
	Loggerhead Shrike	*Lanius ludovicianus*
	1Indiana Bat	*Myotis sodalis*

Special Concern

The following are designated as species of special concern as defined in Section 182.2(i) of 6NYCRR Part 182. Species of special concern warrant attention and consideration but current information, collected by the department, does not justify listing these species as either endangered or threatened.

	Common Name	Scientific Name
Molluscs	Buffalo Pebble Snail	*Gillia altilis*
	Fringed Valvata	*Valvata lewisi*
	Mossy Valvata	*Valvata sincera*
Insects	Unnamed Dragonfly Species	*Gomphus spec. nov.*
	Southern Sprite	*Nehalennia integricollis*
	Extra Striped Snaketail	*Ophiogomphus anomalus*
	Pygmy Snaketail	*Ophiogomphus howei*
	Common Sanddragon	*Progomphus obscurus*
	Gray Petaltail	*Tachopteryx thoreyi*
	Checkered White	*Pontia protodice*
	Olympia Marble	*Euchloe olympia*
	Henry's Elfin	*Callophrys henrici*
	Tawny Crescent	*Phyciodes batesii*
	Mottled Duskywing	*Erynnis martialis*
	Barrens Buckmoth	*Hemileuca maia*
	Herodias Underwing	*Catocala herodias gerhardi*
	Jair Underwing	*Catocala jair*
	A Noctuid Moth	*Heterocampa varia*
Fishes	Mountain Brook Lamprey	*Ichthyomyzon greeleyi*
	Black Redhorse	*Moxostoma duquesnei*
	Streamline Chub	*Erymystax dissimilis*
	Redfin Shiner	*Lythrurus umbratilis*
	Ironcolor Shiner	*Notropis chalybaeus*
Amphibians	Hellbender	*Cryptobranchus alleganiensis*
	Marbled Salamander	*Ambystoma opacum*
	Jefferson Salamander	*Ambystoma jeffersonianum*
	Blue-spotted Salamander	*Ambystoma laterale*
	Longtail Salamander	*Eurycea longicauda*
	Eastern Spadefoot Toad	*Scaphiopus holbrookii*
	Southern Leopard Frog	*Rana sphenocephala utricularius*
Reptiles	Spotted Turtle	*Clemmys guttata*
	Wood Turtle	*Clemmys insculpta*
	Eastern Box Turtle	*Terrapene carolina*
	Eastern Spiny Softshell	*Apalone spinifera*
	Eastern Hognose Snake	*Heterodon platyrhinos*
	Worm Snake	*Carphophis amoenus*
Birds	Common Loon	*Gavia immer*
	American Bittern	*Botaurus lentiginosus*
	Osprey	*Pandion haliaetus*
	Sharp-shinned Hawk	*Accipiter striatus*
	Cooper's Hawk	*Accipiter cooperii*
	Northern Goshawk	*Accipiter gentilis*
	Red-shouldered Hawk	*Buteo lineatus*
	Black Skimmer	*Rynchops niger*
	Common Nighthawk	*Chordeiles minor*
	Whip-poor-will	*Caprimulgus vociferus*
	Red-headed Woodpecker	*Melanerpes erythrocephalus*
	Horned Lark	*Eremophila alpestris*

Mammals	3Allegheny Woodrat	*Neotoma magister*
	1Sperm Whale	*Physeter catodon*
	1Sei Whale	*Balaenoptera borealis*
	1Blue Whale	*Balaenoptera musculus*
	1Finback Whale	*Balaenoptera physalus*
	1Humpback Whale	*Megaptera novaeangliae*
	1Right Whale	*Eubalaena glacialis*
	1,3Gray Wolf	*Canis lupus*
	1,3Cougar	*Felis concolor*

Threatened

Those threatened species which meet one or both of the criteria specified in section 182.2(h) of 6NYCRR Part 182 and which are found, have been found, or may be expected to be found in New York State include:

	Common Name	Scientific Name
Molluscs	Brook Floater	*Alasmidonta varicosa*
	Wavy-rayed Lampmussel	*Lampsilis fasciola*
	Green Floater	*Lasmigona subviridis*
Insects	Pine Barrens Bluet	*Enallagma recurvatum*
	Scarlet Bluet	*Enallagma pictum*
	Little Bluet	*Enallagma minisculum*
	2,3Northeastern Beach Tiger Beetle	*Cicindela dorsalis dorsalis*
	Frosted Elfin	*Callophrys irus*
Fishes	Lake Sturgeon	*Acipenser fulvescens*
	Mooneye	*Hiodon tergisus*
	3Lake Chubsucker	*Erimyzon sucetta*
	Gravel Chub	*Erimystax x-punctata*
	3Mud Sunfish	*Acantharchus pomotis*
	Banded Sunfish	*Enneacanthus obesus*
	Longear Sunfish	*Lepomis megalotis*
	Longhead Darter	*Percina macrocephala*
	Eastern Sand Darter	*Ammocrypta pellucida*
	Swamp Darter	*Etheostoma fusiforme*
	Spotted Darter	*Etheostoma maculatum*
Amphibians	None Listed	—
Reptiles	Blanding's Turtle	*Emydoidea blandingii*
	2Green Sea Turtle	*Chelonia mydas*
	2Loggerhead Sea Turtle	*Caretta caretta*
	Fence Lizard	*Sceloporus undulatus*
	Timber Rattlesnake	*Crotalus horridus*
Birds	Pied-billed Grebe	*Podilymbus podiceps*
	Least Bittern	*Ixobrychus exilis*
	Bald Eagle	*Haliaeetus leucocephalus*
	Northern Harrier	*Circus cyaneus*
	King Rail	*Rallus elegans*
	Upland Sandpiper	*Bartramia longicauda*
	Common Tern	*Sterna hirundo*
	Least Tern	*Sterna antillarum*
	Sedge Wren	*Cistothorus platensis*
	Henslow's Sparrow	*Ammodramus henslowii*
Mammals	2,3Canada Lynx	*Lynx canadensis*

	Bicknell's Thrush	*Catharus bicknelli*
	Golden-winged Warbler	*Vermivora chrysoptera*
	Cerulean Warbler	*Dendroica cerulea*
	Yellow-breasted Chat	*Icteria virens*
	Vesper Sparrow	*Pooecetes gramineus*
	Grasshopper Sparrow	*Ammodramus savannarum*
	Seaside Sparrow	*Ammodramus maritimus*
Mammals	Small-footed Bat	*Myotis leibii*
	New England Cottontail	*Sylvilagus transitionalis*
	Harbor Porpoise	*Phocoena phocoena*

[1]Currently listed as "endangered" by the U. S. Department of the Interior.
[2]Currently listed as "threatened" by the U. S. Department of the Interior.
[3]Species is extirpated from New York State.
[4]Piping Plover is listed as federally endangered in the Great Lakes Region, and as federally threatened in the Atlantic Coastal Region.

Definitions

Extinct - Species is no longer living or existing.

Extirpated - Species is not extinct, but no longer occurring in a wild state within New York, or no longer exhibiting patterns of use traditional for that species in New York (e.g. historical breeders no longer breeding here).

Endangered - Any native species in imminent danger of extirpation or extinction in New York State.

Threatened - Any native species likely to become an endangered species within the foreseeable future in New York State.

Special Concern - Any native species for which a welfare concern or risk of endangerment has been documented in New York State.

Authority

Environmental Conservation Law of New York, Section 11-0535 and 6 NYCRR (New York Code of Rules and Regulations) Part 182 - effective (last promulgated in state regulation) December 4, 1999.

Revision History

Effective April 24, 2000 - Canada Lynx (*Lynx canadensis*) was added to the Threatened list.

Effective August 8, 2007 - Bald Eagle (*Haliaeetus leucocephalus*) was removed from the Endangered Species List by the U. S. Department of the Interior.

A previous version of this document erroneously indicated that the Gray Wolf (*Canis lupus*) was federally Threatened.