# ERIE BOULEVARD HYDROPOWER, L.P.

### **OSWEGO RIVER PROJECTS:**

Oswego Falls Project (FERC No. 5984) Granby Project (FERC No. 2837) Oswego River Project (FERC No. 2474)

# APPLICATION BEFORE THE LOW IMPACT HYDROPOWER INSTITUTE FOR CERTIFICATION OF THE OSWEGO RIVER PROJECTS AS A LOW IMPACT FACILITY

**JULY 2007** 

DRAFT

**Brookfield** Power



### OSWEGO RIVER PROJECTS LIHI APPLICATION FOR CERTIFICATION

#### SUMMARY

The Oswego River Projects consist of six developments comprising three hydroelectric projects along the Oswego River in Oswego County, New York. The projects are all located at locks and dams owned by the New York State Thruway Authority (NYSTA) Canal Corporation, operator of the State Barge Canal System.

The Oswego River is formed at the confluence of the Seneca and Oneida rivers and flows approximately 23 river mile north ti Lake Ontario. The Oswego River is traversed by a series of seven locks between the cities of Phoenix and Oswego. NYSTA regulates the river to control flooding and to provide adequate water levels during the navigation season. The Oswego River Projects—from upstream to downstream, the Oswego Falls East and West Developments, the Fulton-Granby Developments, the Minetto Development, and the Varick Development—all operate in a modified run-of-river mode consistent with NYSTA's navigation requirements.

On its face, the licensing scheme of the Oswego River Projects is complicated, with the three FERC projects that comprise these projects being licensed over the course of three decades, and at vastly different points in federal and state agencies and the licensee's histories. Because the operations and natural resource concerns related to the Oswego River Projects are so closely linked, all of the project operations and mitigations and enhancements were eventually brought into the folds of a single settlement agreement, which was accepted by FERC in 2004. The U.S. Department of Interior, U.S. Fish and Wildlife Service, National Park Service, New York State Department of Environmental Conservation (NYSDEC), and five regional environmental organizations are parties to this agreement.

The location of the Oswego River Projects within a developed and industrialized area that is directly connected to the Great Lakes provides additional context for understanding the importance of the licensing, relicensing, and settlement agreement proceedings for the Oswego River Projects. The operational modifications and additional environmental protections and enhancements agreed on in the Offer of Settlement have achieved the goals of the Remedial Action Plan for the Oswego River that was developed in the 1980s, and the FERC license and settlement agreement provisions are credited with playing a major role in the delisting of the Oswego River as a Great Lakes Area of Concern.

The Fulton and Granby Developments share the Lower Fulton Dam and were originally licensed by FERC as one project, along with the Minetto and Varick developments. At the request of the previous licensee for the Oswego River Project, Niagara Mohawk Power Corporation, the Granby Development was removed from the license in 1980, and a new license was issued, to allow for relicensing and redevelopment of the Granby Project (now FERC No. 2837). <sup>1</sup>

<sup>1 11</sup> FERC ¶62,011

The Oswego Falls Project (FERC No. 5984) was issued an original license by FERC in 1996.<sup>2</sup> This licensing proceeding was initiated in 1982 with the filing of a license application by Niagara Mohawk. ADD PROBLEMS-REHEARING, APPEAL, ETC. Niagara Mohawk filed a relicense application for the Oswego River Project (FERC No. 2474)—which now includes the Fulton, Minetto, and Varick developments—in 1991. The NYSDEC denied the licensee's application for Section 401 water quality certification in 1992. The project operated under annual license for the next decade pending the disposition of the application for new license.

In 1999, FERC approved the transfer of the Oswego Falls, Oswego River, and Granby licenses from Niagara Mohawk to Erie Boulevard Hydropower, L.P.<sup>3</sup>

Erie initiated settlement agreement negotiations with intervening agencies and organizations to resolve issues pertaining to the 401 water quality certification and FERC licensing proceedings, establish the terms and conditions to be included in the new license for the Oswego River Project, and modify the terms and conditions of the Oswego Falls license to make it compatible with the measures of the settlement agreement for the Oswego River Project. Thus the terms and conditions of the settlement agreement effectively supercede the license for the Oswego Falls Project.

The Offer of Settlement was approved by FERC in the 2004 order issuing new license for the Oswego River Project. In 2006, Erie filed an application to amend the Oswego Falls Project license to allow for a maintenance upgrade to the Oswego Falls East Development. By order dated September 7, 2006, the amendment was approved by FERC and the terms of the settlement and license were modified to accelerate implementation of several environmental protections and mitigations at the Oswego Falls and Oswego River Projects. 5

<sup>&</sup>lt;sup>2</sup> 74 FERC ¶62,138

<sup>3 88</sup> FERC ¶62,082

<sup>4 109</sup> FERC ¶62,141

<sup>&</sup>lt;sup>5</sup> 116 FERC ¶62,191

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# LOW IMPACT HYDROPOWER QUESTIONNAIRE

## E. LOW IMPACT HYDROPOWER QUESTIONNAIRE

Background Information	Applicant Answer				
1) Name of the Facility.	Oswego River Projects: Oswego Falls Project (FERC No. 2474), Granby Project (FERC No. 2837), Oswego River Project (FERC No. 5984)				
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. Steven P. Murphy TITLE Erie Boulevard Hydropower, L.P. c/o Brookfield Power 225 Greenfield Parkway, Suite 201 Liverpool, NY 13088				
3) Location of Facility by river and state.	Oswego River, New York				
4) Installed capacity.	Oswego Falls Project: Granby Project: Oswego River Project: Total installed capacity:	7.46 MW 10.08 MW 18.05 MW 35.59 MW			
5) Average annual generation.	Oswego Falls Project: Granby Project: Oswego River Project: Total average annual generation:	44.4 GWh 58.6 GWh 72.5 GWh 175.5 GWh			
6) Regulatory status.	<b>FERC-licensed.</b> Licenses were issued for the Oswego River Projects according to the schedule below:				

	Oswego River Project: November	30, 2004 (109 FER	C 102,141)
	During the relicensing proceedings for settlement negotiations with intervent issues pertaining to the 401 water qual conditions to be included in the new and modify the terms and conditions compatible with the measures of the Project. This Offer of Settlement was along with issuance of the new licens and conditions of the Offer of Settlement Falls Project.  On September 7, 2006 (116 FERC © license for the Oswego Falls Project to Oswego Falls East Development and installation at this project.	ing agencies and or ality certification, established for the Oswego Falls offer of settlement for the Oswego Right of the Oswe	ganizations to resolve stablish the terms and the Oswego River Project is license to make it for the Oswego River roved by FERC in 2004, liver Project. The terms icense for the Oswego and order amending the enance upgrade to the nedule for eel passage
	The license orders and order on offer	of settlement can b	e found in Attachment 1
	The mediate orders and order on order		96
7) Reservoir volume and surface area measured at the high water mark in an average water	Oswego Falls East and West developments:	3,540 acre-feet	580 surface acres
	Oswego Falls East and West developments: Granby and Fulton developments:	3,540 acre-feet 620 acre-feet	33 surface acres
at the high water mark in an average water	Oswego Falls East and West developments: Granby and Fulton developments: Minetto development:	3,540 acre-feet 620 acre-feet 4,730 acre-feet	33 surface acres 350 surface acres
at the high water mark in an average water	Oswego Falls East and West developments: Granby and Fulton developments:	3,540 acre-feet 620 acre-feet	33 surface acres
at the high water mark in an average water	Oswego Falls East and West developments: Granby and Fulton developments: Minetto development:	3,540 acre-feet 620 acre-feet 4,730 acre-feet	33 surface acres 350 surface acres

10) Number of some contained in a 200 feet	N. D. C. I
<ol> <li>Number of acres contained in a 200-foot zone extending around entire impoundment.</li> </ol>	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.	A list of key resource agencies and NGOs involved in license proceedings and settlement agreement is attached (Attachment 2).
12) Please attach a description of the Facility, its mode of operation (i.e., peaking/run of river) and a map of the Facility.	A map of the Oswego River developments, descriptions of the project facilities and operations, and Exhibit F and G project drawings are attached (Attachments 3 and 4).
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	An additional 700 kW of power generation capacity is being added to the existing Oswego Falls West development of the Oswego Falls Project. The additional capacity will be achieved through the replacement of the existing Francis unit Number 3 with two vertical propeller units and replacement of the unit 3 horizontal generator with two new vertically-oriented generators. Because this capacity will be added after August 1998, the Oswego Falls West development of the Oswego Falls Project is treated as a "new" facility for questions 13 through 18 below.
13) When was the dam associated with the Facility completed?	The Oswego Falls West development is located at the New York State Thruway Authority's (NYSTA) Canal Corporation Lock and Dam No. 2, which was constructed in 1927.
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.	The added generation capacity is not yet operational and is currently scheduled to begin generating electricity in late 2007.
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	No – The added generation capacity will not require any new dam or other diversion structure. The added generation will be achieved through replacement of a turbine-generator unit.

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)?	No – The added capacity will increase the overall discharge of the Oswego Falls Project by 432 cfs, or 6.6%. ADD STATEMENT HERE-NO ADVERSE EFFECTS This increase in hydraulic capacity at the Oswego Falls West development will not affect the modified run-of-river operating regime or minimum flows stipulated in the 1996 license order or 2004 Offer of Settlement.
<ul> <li>(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?</li> <li>(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.</li> </ul>	No – No resource agency or other organization has ever recommended removal or decommissioning of the existing Lock and Dam No. 2, which is owned by NYSTA and is not included in the FERC-licensed project works of the Oswego Falls Project.
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.	<ul> <li>(a) Yes – The added generation was authorized by the Federal Energy Regulatory Commission by license amendment order dated September 7, 2006.</li> <li>(b) No – There are no pending appeals or litigation regarding this authorization.</li> </ul>

A. Flows	PASS	FAIL	Applicant Answer
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 instream 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	NO = Fail	Yes – The Oswego River Projects are in compliance with resource agency conditions issued after December 31, 1986 regarding flow conditions. The FERC licenses and license amendments, 2004 settlement agreement, and Section 401 Water Quality Certificates (WQC) include the requirements for flow releases and water level control recommended by the New York State Department of Environmental Conservation (NYSDEC) and U.S. Fish and Wildlife Service (USFWS).  Each year Erie files documentation with FERC confirming compliance with flow and level conditions. A copy of this filing for 2006 is attached (Attachment 5). For construction and maintenance activities that require lowering the level of an impoundment below the normal operating limits, Erie's own operating procedure (HOP 202) requires notification of NYSDEC and compliance with drawdown and rates specified in the 401 WQC (1 ft/hr).  Add statement here-how previous 10(j) recommendations superceded by settlement, no recommendations for Granby- licensed 1980 but same as Fulton by default. Installation of rubber dam at Oswego Falls to reduce fluctuation? streamflow and water level monitoring plan accepted by FERC on and is included as an attachment to this application (Attachment 5).  A summary of flow conditions recommended by resource agencies through the FERC licenses and license amendments, 2004 Offer of Settlement, and 401 WQC's follows:  Oswego Falls Project  • Impoundment fluctuation limitations: 0.5 feet (year-round).

Bypass flow: (year-round) 236 cfs or inflow, whichever is less—70 cfs released at the east-side sluice gate and 166 cfs released through tainter gate 6
Oswego River Project
<ul> <li>Impoundment fluctuation limitations:</li> <li>Fulton: 0.5 feet (year-round) from permanent crest of dam or to of flashboards when in place</li> <li>Minetto: 0.5 feet (year-round) from permanent crest of dam or top of flashboards when in place</li> <li>Varick: 1.0 feet (year-round) from permanent crest of dam or to of flashboards when in place</li> </ul>
<ul> <li>Baseflow: 800 cfs or inflow, whichever is less during walleye spawning season and 300 cfs or inflow, whichever is less for the re of the year. The baseflow for the Oswego River Project is maintain in the river immediately downstream of the Fulton development's powerhouse (through generation or over the spillway). No baseflow is provided at the Minetto development due to the backwatering effect of created by the dam at Lock No. 6. The base flow at the Varick development is provided for via the bypass flow.</li> <li>Bypass flows: Bypass flows at the Oswego River Project are provided according to the schedule below</li> </ul>
Development Bypass flow Season
Fulton 75 cfs year-round
800 cfs or inflow, walleye spawning whichever is less
Varick  400 cfs or inflow, end of walleye spawning through May 31

		200 cfs or inflow, whichever is less  June 1 through Sept. 15
		400 cfs or inflow, whichever is less Sept. 16 through beginning of walleye spawning
		As described in Section 3.4 of the 2004 settlement agreement and license Article 406, in 2005 Erie installed a low-level flow diversion structure along the portion of the western side of the bypass reach near the tailrace of the Varick powerhouse.
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	YES = Pass, go to B  NO = Go to A3	Yes – No resource agencies have issued any recommendations regarding flow conditions at the Granby Project, which was issued a new license in 1980. However, because the Granby Project shares a dam with the Fulton Development of the Oswego River Project, by default the Granby Project is operated in a modified run-of-river mode, with impoundment fluctuations limited to 0.5 feet year-round.
in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or "good" habitat flow standards calculated using the Montana-Tennant method?		The bypass flow at the Fulton development wets the upper portion of the bypass reach immediately downstream of Fulton dam (also known as Lock and Dam No. 4). The provision of the base flows at the Fulton development allows the Fulton/Granby upper bypass reach to be backwatered by discharge from the turbines and provides additional flow to the lower portion of the bypass reach.

		WHAT TO PROVIDE HERE AS "EVIDENCE" OF GOOD HABITAT FLOW STANDARDS? NEEDED?
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?	NO = Fail	N/A

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 – TEXT, include WQCs in attachment
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 –portion (where?) of Oswego River on 303(d), give classifications of segments, RAP/Area of Concern history
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 – explanation

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 C2	NO = Fail	YES – explain 10(j)/18 conditions history, superceded by settlement  Upstream eel passage requirements and schedule. This schedule has been modified and new measures added as a result of the planned capacity upgrade at the Oswego Falls East development.  Resource agency recommendations for downstream fish passage are discussed below in Section C5.  N/A for Granby? Need to answer #2 for this development only?
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)?	YES = Go to C2a NO = Go to C3		Total of the orange in answer #2 for this development only?
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?	YES = Go to C2b N/A = Go to C2b	NO = Fail	
b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific	YES = Go to C5 N/A = Go to	NO = Fail	

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?	C3		
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	NO = Go to C5 N/A = Go to C4	YES = Fail	Any need for answer here?
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?			
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?	YES = Go to C5	NO = Fail	N/A
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?			
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 – While there is no Section 18 prescription for passage of riverine fish, the Offer of Settlement (which incorporates the recommendations of USFWS and NYSDEC) and FERC licenses require provision of alternate routes of downstream fish movement at all dams associated with the Oswego River Project. The mechanisms and schedules for implementation of fish movement flows were determined in the Offer of Settlement and are

			Implementation of the fishways, or fish movement flows WHEN  Upper Fulton Dam (Oswego Falls Project)  • cfs  Lower Fulton Dam (Fulton and Granby developments)  • cfs  Minetto Dam (Minetto Developments)  • cfs  Varick Dam (Varick Development)  • cfs
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	Yes –trashrack requirements, schedule, 1-inch racks or overlays at Oswego River Project?? What's at Granby intake? Give sources (License articles or settlement sections)
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	No – No specific provision in the settlement agreement or special FERC license articles designate a formal buffer zone around the projects' impoundments and undeveloped shoreline, and all the project boundaries do not extend 200 feet above the high water mark around more than 50% of impoundment shoreline.  Describe nature of shoreline/development?
2) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's	YES = Pass, go to E and receive 3 extra years	NO = go to D3	• No-  Each project's FERC license contains an article requiring Erie to file with the Commission an annual statement reporting a

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?	of certification		description of the amount of money and activities on which the above enhancement funds were spent during the preceding calendar year and the amount of money Erie has or will contribute to the enhancement funds during the current calendar year. A copy of this filing for calendar year 2005 is attached (Attachment 8).
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	Yes – watershed land protection provisions?
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	N/A ??

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 – No according to licenses, provide update
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	Yes – explanation
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	YES = Go to E4 N/A = Go to E5	NO = Fail	N/A

pursuant to that authority?			
<ul> <li>4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:</li> <li>a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or</li> <li>b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species?</li> </ul>	YES = Pass, go to F	NO = Fail	N/A
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?			
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 –defer to EA, etc.?

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- License articles, CRMP filed and accepted (include as attachment), what about Granby? Old structures demolished?  The CRMP for the Oswego River Project was approved by the FERC on DATE(Attachment 10). As required by this order, Erie will file with FERC an annual report of activities performed at the Oswego River projects under the CRMP starting when?
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	N/A

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- Recreation & Access Plans, recreational provisions of licenses, settlement (reference appropriate FERC orders re: rec-related license article compliance)
2) If not FERC-regulated, does the	YES = Go	NO =	N/A

Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?	to G3	Fail	
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H	NO = Fail	Yes – reference licenses, access plan, settlement

H. Facilities Recommended for Removal	PASS	FAIL	
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 has recommended removal of any of the dams associated with the Oswego River Projects.

### **ATTACHMENT 1**

**Background Information Supporting Documentation:** 

License Orders and Water Quality Certifications

**Order Approving Settlement** 

**Summary of Settlement Offer/Enhancement Measures** 

# **ATTACHMENT 2**

**Background Information Supporting Documentation:** 

**Contacts/Key Settlement Parties** 

# **ATTACHMENT 3**

**Background Information Supporting Documentation:** 

**Project Descriptions** 

**Project Location Map** 

#### OSWEGO RIVER PROJECTS PROJECT DESCRIPTIONS

The Oswego River Projects consist of six developments comprising three FERC-licensed hydroelectric projects along the Oswego River in Oswego County, New York. The projects are all located at locks and dams owned by the New York State Thruway Authority (NYSTA) Canal Corporation, operator of the State Barge Canal System.

The Oswego River is formed at the confluence of the Seneca and Oneida rivers and flows north approximately 23 river miles to Lake Ontario. NYSTA regulates the river to control flooding and to provide adequate water levels during the navigation season.

The Oswego River first flows through the Phoenix dam impoundment to the Oswego Falls impoundment. The Oswego Falls impoundment provides the only significant storage volume for the Oswego River projects. The Oswego Falls East and Oswego Falls West developments (FERC No. 5984) are located immediately below this impoundment, formed by the Upper Fulton dam (Lock 2, River Mile 12.6).

Once past the Oswego Falls Project, water flow enters the Fulton-Granby impoundment. The Granby Project (FERC No. 2837) and Fulton development (part of FERC No. 2474) are located at opposite sides of Lower Fulton dam (Lock 3), approximately one mile below Upper Fulton dam. The Oswego River next enters the impoundment formed by the Minetto dam. The Minetto development (FERC No. 2474) is located near Lock 5, approximately 6.4 miles downstream of Fulton and Granby. Next water flow enters the impoundment at Lock 6 and the High Dam Project (FERC No. 10551), which is owned by the city of Oswego, with Erie providing operation and maintenance support for the plant. Finally, once past the High Dam Project, water flow enters the Varick impoundment. The Varick development (FERC No. 2474) is located near Lock 7, 1.4 miles above the confluence of the Oswego River with Lake Ontario.

### A. Oswego Falls Project

The dam and forebay gate structures at the Upper Fulton dam are owned by NYSTA. The dam has a weir section and a spillway section for overflow, and the crest is equipped with a 1.5-foothigh pneumatic flashboard system installed and maintained by Erie. To the west of the weir section, there are six Tainter gates, which are owned by NYSTA. The Oswego Falls West Development is located on the left bank (looking downstream), and the Oswego Falls East Development is located on the opposite (right) bank. In accordance with the 2004 Offer of Settlement and 2006 FERC order amending the license for the Oswego Falls Project, a seasonal (June 15 to September 15) upstream eel conveyance system will be installed at the Oswego Falls Project by the end of 2008.

The existing licensed operational mode for the Oswego Falls Project is modified run-of-river operation, which allows for a 0.5-foot impoundment fluctuation. The Project generates with inflows between 652 cfs and 7,158 cfs, and flows outside of this range are spilled at the dam. The licensed bypass flow for the Oswego Falls Project is 236 cfs or inflow, whichever is less. Of

this total bypass flow, 70 cfs is released at the East Development, and 166 is released at the West Development.

#### Oswego Falls East Development

The eastern forebay that leads to the intake for the Oswego Falls East Development is located near Lock 2. Licensed project works at the Oswego Falls East Development include the forebay, which is equipped with a trash sluice and electric-operated gate; intake structure with 1-inch trashracks; a concrete and brick powerhouse; three vertical Francis-type turbine-generator units; a tailrace channel separated from the river by a concrete gravity section and earth embankment at the lock by a masonry and concrete retaining wall; and 2.4-kV primary transmission lines and appurtenant facilities and the 2.4-kV station tie to the West Development. The three turbine-generator units each have an installed capacity of 1.5 MW and a combined hydraulic capacity of 4,230 cfs. Minimum flows at the Oswego Falls East Development are provided through the existing trash sluice gate.

#### Oswego Falls West Development

Licensed project works at the Oswego Falls West Development include NYSTA's forebay gate structure between the Tainter gates and western shore of the river that conveys water to the forebay of the powerhouse; forebay; intake structure equipped with 1-inch trashracks and ice and trash sluices; a concrete and brick powerhouse; a tailrace channel separated from the river by a concrete gravity section and from the river bank by a concrete retaining wall; and the 2.4-kV primary transmission lines and appurtenant facilities. As approved in FERC's September 7, 2006 order amending the license for the Oswego Falls Project, Erie recently performed a maintenance upgrade to replace Unit 3 at the Oswego Falls Development. The Oswego Falls Development now includes four quadruplex-type turbine-generator units (Units 1, 2, 4, and 5) and two vertical propeller turbine units (Units 3.1 and 3.2). Units 1 and 2 are inoperable, and Units 4 and 5 have an installed capacity of 0.93 MW each and combined hydraulic capacity of 1,120 cfs. Units 3.1 and 3.2 each have an installed generating capacity of 0.55 MW and a combined hydraulic capacity of 832 cfs. The minimum flow at the Oswego Falls West Development is provided through Tainter gate 6, which is adjacent to the pneumatic flashboard section of the dam.

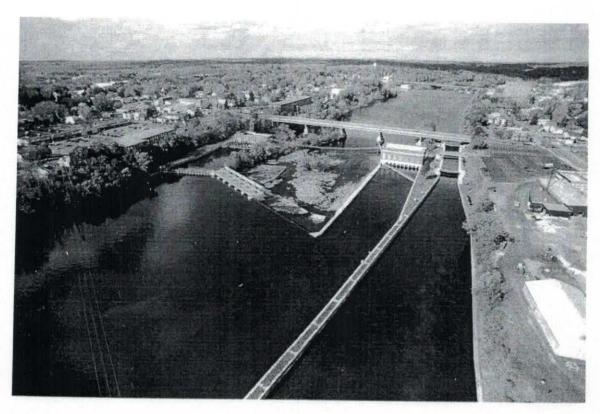


Figure 1. Downstream view of the Oswego Falls East (right) and Oswego Falls West (left) developments at Upper Fulton Dam/Lock 2.

### B. Fulton and Granby Developments

The Lower Fulton dam is a 509-foot-long and 15-foot-high concrete buttress dam topped with 6-inch flashboards. The Fulton Development is located on the left bank (looking downstream), and the Granby Development is located at the right end of the dam, adjacent to Lock 3. The Fulton-Granby impoundment has a surface area of 33 acres with a normal pool elevation of 334.5 ft msl. The bypassed reach formed by the Fulton Development is 1,850 ft long.

Inflow to the reservoir is essentially the same as discharge from the Oswego Falls Project, which has a combined hydraulic capacity of 6,922 cfs. The Fulton Development operates in conjunction with the Granby Project. As described in the 2004 Offer of Settlement, the Fulton Development operates in a modified run-of-river mode, which allows for a 0.5-foot impoundment fluctuation. Because Granby shares the dam with Fulton, by default Granby operates in this same modified run-of-river mode. The Granby powerhouse is shut down whenever available river flow is less than 2,500 cfs (the minimum turbine setting of one Granby unit). At flows less than 2,500 cfs, the Fulton powerhouse uses the river flow up to 1,165 cfs, the maximum hydraulic capacity of the Fulton Development. When available flow exceeds 2,500 cfs, the Granby powerhouse is activated and flows up to 6,000 cfs are diverted through the turbines. Due to the narrow operating limits of the Granby units (2,500 cfs to 3,000 cfs each), all water within the 2,500 cfs

to 6,000 cfs range cannot be utilized by the Granby Project; that is at flows less than 5,000 cfs only one unit can operate, and the remaining flow would be diverted to the Fulton Development.

The licensed baseflow requirement for the Fulton Development is 300 cfs or inflow, whichever is less, and 800 cfs or inflow during walleye spawning season. The provision of this baseflow, in combination with the 75-cfs minimum flow released from the sluice gate adjacent to the Fulton powerhouse, allows the upper bypass reach formed by the Fulton-Granby developments to be backwatered by discharge from the Fulton turbines.

### Fulton Development

Licensed project works at the Fulton Development include a concrete intake structure equipped with three steel gates; a 10-foot-long and 40-foot-wide forebay; \_\_ trashracks; concrete and brick powerhouse with two turbine-generator units; a switchgear building; and appurtenant facilities. The Fulton powerhouse contains two vertical fixed-propeller turbine-generator units with generating capacities of 0.8 MW and 0.45 MW and a combined hydraulic capacity of 1,165 cfs. In accordance with the 2004 Offer of Settlement and provisions of the 2006 FERC order amending the license for the Oswego Falls Project, a seasonal upstream eel conveyance system will be installed at the Fulton Development by the end of 2008.

#### Granby Development

Licensed project works at the Granby Development include an intake structure with trashracks, concrete and steel-frame powerhouse containing two generating units each rated at 5.04 MW; the generator leads, substation, switchyard, and transmission line; 3,000-foot-long tailrace; and appurtenant facilities.

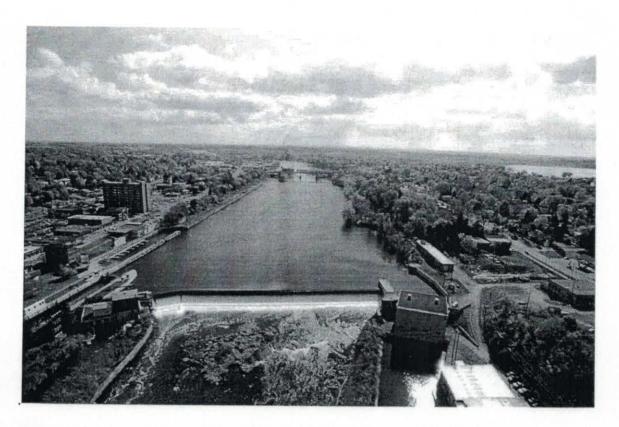


Figure 2. Upstream view of the Fulton (right) and Granby (left) developments at Lower Fulton Dam/Lock 3.

### C. Minetto Development

The Minetto dam is a 500-foot-long, 22.5-foot-high concrete gravity dam topped with 10-inch flashboards. The Minetto impoundment has a surface area of 350 acres with a normal pool elevation of 307.8 ft msl. Licensed project works at the Minetto Development include a concrete intake structure equipped with nine steel gates; a 100-foot-long, 200-foot-wide forebay; \_\_\_ trashracks; and a concrete and brick powerhouse containing five vertical Francis turbine-generator units with a combined installed capacity of 8.0 MW and combined hydraulic capacity of 7,500 cfs; and appurtenant facilities. In accordance with the 2004 Offer of Settlement, a seasonal upstream eel conveyance system will be installed at the Minetto Development by the end of 2008.

The existing licensed operational mode for the Minetto Development is modified run-of-river operation, which allows for a 0.5-foot impoundment fluctuation. There are no licensed bypass or base flow requirements for the Minetto Development, but the license does include a requirement for a 25-cfs downstream fish flow, which is released through an unused bay within the powerhouse.

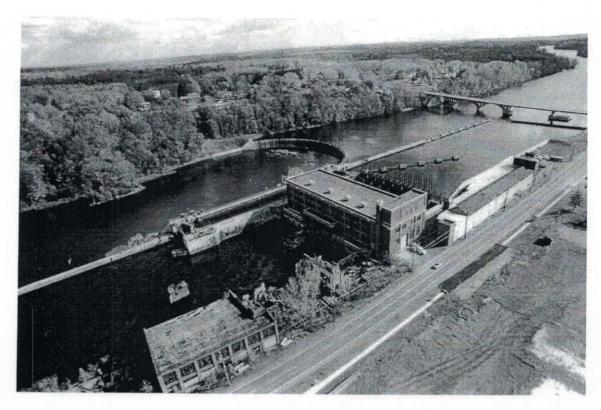


Figure 3. The Minetto Development at Minetto Dam/Lock 5.

### D. Varick Development

The Varick dam is the last dam on the Oswego River before the river's confluence with Lake Ontario. The Varick Development is located within the city of Oswego, and so the lands around the project are relatively heavily developed. The 730-foot-long and 13-foot-high masonry gravity dam contains curved, straight, and gated sections and is topped with a series of stepped flashboards ranging in height from 10 inches to 36 inches. The Varick impoundment has a surface area of 32 acres at normal pool elevation 270.0 ft (msl), and the bypassed reach is approximately 1,940 ft long. Licensed project works include an intake structure with 24 steel gates; a 950-foot-long, 150-foot-wide forebay; \_\_ trashracks; ice sluice; concreted and brick powerhouse containing four generating units; and appurtenant facilities. The turbine-generator units at Varick are fixed-blade propeller turbines and have a combined installed capacity of 8.025 MW and a combined hydraulic capacity of 5,600 cfs. In accordance with the 2004 Offer of Settlement, a seasonal upstream eel conveyance system has been installed at the Varick Development and began operating for its first season on May 30, 2007.

The existing licensed operational mode for the Varick Development is modified run-of-river operation, which allows for an impoundment fluctuation of 1 foot from the permanent crest of the dam or top of flashboards, when in place. Licensed flow requirements include a 200 cfs downstream fish flow released adjacent to the trashracks and an additional bypass flow that

varies by season, ranging from 200 cfs to 600 cfs, through an existing sluice gate adjacent to the NYSTA head gate. As required by License Article 406, Erie installed a low-level diversion structure along the western side of the Varick bypassed reach, near the tailrace of the powerhouse, which allows the majority of the upper bypassed reach flow to be diverted to the lower bypassed reach during certain periods.



Figure 4. The Varick Developments at Varick Dam/Lock 7.